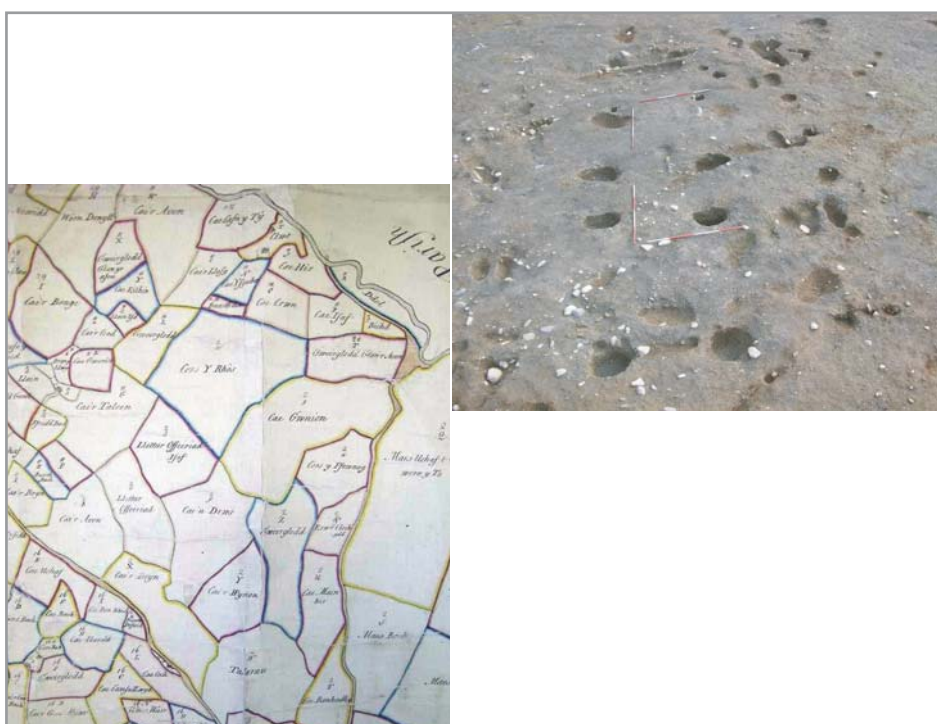


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# Recent Excavations at Llandygai, near Bangor, North Wales

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## Full excavation report Volume I: the text

GAT Project No. G1857

Report No. 764

December 2008

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# Recent Excavations at Parc Bryn Cegin, Llandygai, near Bangor, North Wales

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Full excavation report

Report No. 764

Site code: G1857

Volume I: The text

Prepared for JacobsGIBB on behalf of  
the Welsh Assembly Government

December 2008

By  
Jane Kenney  
(with contributions by Roland Flook,  
George Smith and David Jenkins)

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## RECENT EXCAVATIONS AT PARC BRYN CEGIN, LLANDYGAU, NEAR BANGOR, NORTH WALES

By Jane Kenney

with contributions by Roland Flook, David Jenkins and George Smith

### SUMMARY

*An excavation in 2005 carried out by Gwynedd Archaeological Trust investigated about 23 hectares of a 35 hectare site to the south of Bangor, Gwynedd. This revealed features dating from the Early Neolithic to the medieval period overlaid by eighteenth and nineteenth-century field boundaries. The most significant discovery was the remains of an Early Neolithic rectangular timber building. It was well preserved with numerous related features and assemblages of artefacts and charred plant remains. This structure was radiocarbon dated to between 3760-3700 cal BC and 3670-3620 cal BC.*

*There were several clusters of Mid to Late Neolithic pits, which contained a large assemblage of pottery and other artefacts. Sixteen burnt mounds were found, some very well preserved, dating from the Neolithic and Bronze Age. The remains of a Mid Iron Age ring-groove roundhouse were found, overlaid by early medieval smithing activity. A Late Iron Age/Romano-British settlement was almost completely excavated and the associated finds included a Roman seal box and evidence for glass bead making. A large cache of glass beads dating to the Roman period was probably related to the settlement despite being found some distance from it. Full medieval activity was represented only by a corn drier, but the post-medieval field system could be traced in surviving ditches.*

### INTRODUCTION

#### Background

Aerial photographs taken by Dr. J K St Joseph in 1961 revealed a complex of prehistoric monuments in a field (NGR SH 595 712) near the village of Llandygaui, south of Bangor (Fig. 1). When it was proposed to build an industrial estate on this site Christopher Houlder of the Royal Commission on the Ancient and Historical Monuments of Wales was asked to direct excavations to investigate the site. Two seasons of excavation were carried out in 1966 and 1967, exposing a Late Neolithic ceremonial complex comprising two henges, a cursus and other smaller features. This was preceded by an Early Neolithic rectangular timber structure and succeeded by an Early Bronze Age barrow, a later settlement in the middle of one of the henges and an early medieval cemetery overlying the cursus. Aerial photographs show that the cursus and some related features extend into the field to the east, which was subsequently scheduled. Interim reports were published in 1967 and 1968 (Houlder 1967 and 1968) but the final report on these excavations was not published until 2004, after Christopher Houlder's death (Lynch and Musson 2001).

The Late Neolithic ceremonial complex is of national importance and its presence suggested that the surrounding area was of high archaeological potential. An opportunity to test this assumption became available when a proposal was made to develop the fields to the south of the complex as a business park to be called Parc Bryn Cegin (Fig. 1). Outline planning permission was granted for the development of the site in 2001. The planning application was accompanied by an Environmental Impact Statement that included an archaeological assessment carried out by Gwynedd Archaeological Trust (Hopewell and Davidson 1999). This assessment included geophysical survey of 13 sample areas distributed randomly over the development site. The proximity of the henge complex made archaeological involvement for the new development essential and a Design Brief for Archaeological Mitigation was supplied by Gwynedd Archaeological Planning Service, who monitored the work throughout. An updated assessment report was produced in 2005 (Smith 2005) incorporating information from the full publication of the henge complex published in 2004 (Lynch and Musson 2001), and evidence from geological borehole and test pits carried out by Geotechnics for JacobsBabtie in January 2005. Aerial photographs were consulted for this assessment but no archaeological features were identified, with the exception of a circular feature towards the western end of the site, but the arc of this only just came within the site boundary. The Brief recommended a geophysical survey of the whole development area, which was carried out in 2005 (Stratscan 2005). The outcropping bedrock caused background noise, which confused the survey over the eastern part of the site, but old field boundaries were recognised, most of which could be identified on the eighteenth and nineteenth-century maps. Other features requiring investigation were identified.

The Evaluation Project Design proposed both 'strip, map and sample' and trial trenching as methods for evaluating the archaeology. The 'strip, map and sample' method was tested on the access road corridor and one building plateau. As the technique proved to be very successful in the trial area, it was

extended to the whole site. All areas where groundworks for the development would be carried out were stripped of topsoil and examined. Where the strip, map and sample technique identified the presence of significant archaeology, it was followed by area excavation. This involved intensive hand cleaning of the area and detailed excavation and recording of all significant archaeological features and layers.

Trial trenching was used on one occasion to establish whether archaeological deposits continued outside the development area alongside the late prehistoric/Romano-British settlement. It should be stressed that all areas not investigated by 'strip, map and sample' evaluation have an unknown, but possibly high potential for archaeological remains. These areas were not evaluated on the strict understanding that they would not be disturbed by any groundworks.

The evaluation and excavation were commissioned by JacobsBabtie on behalf of the Welsh Assembly Government (then the Welsh Development Agency), and monitored by Gwynedd Archaeological Planning Service on behalf of the Local Planning Authority to ensure that the planning conditions were fulfilled. The principal phase of fieldwork took place between 21<sup>st</sup> February 2005 and 9<sup>th</sup> February 2006. Small amounts of additional work were required to finish off a building plateau between 17<sup>th</sup> and 21<sup>st</sup> July 2006 and watching briefs on a pipe trench running north to the river and a foundation slot for a sign on 21<sup>st</sup>, 26<sup>th</sup>, 30<sup>th</sup> April and 6<sup>th</sup> June 2006.

The different parts of the site were identified during development by plateau and roadway zones. As these were initially referred to by letters and the archaeological recording system required trench numbers a separate system of trench numbering was established. This was also useful where two plateaux, or a plateau and part of a roadway, were included in one trench. In previous reports the plateau numbers have been used to identify areas of the site, however, because the trench numbers correspond to the context numbers in the detailed descriptions this report will use trench numbers as shown on Fig. 2.

The present document, along with the associated appendices, tables and illustrations, records in detail the results of the excavations and post-excavation analysis and presents an interpretation of those results. It is intended as the basic record of the excavation and to provide sufficient detail for comparative studies with other sites or to form the basis for any future reinterpretation of the present site. This report will be lodged with the Gwynedd Historical Environment Record and will be made available on the Internet through the Gwynedd Archaeological Trust's website ([www.heneb.co.uk](http://www.heneb.co.uk)). A more general dissemination of the results will be achieved through a published version of the report. This will be much briefer, with summary descriptions of the results and pertinent discussion. Concise versions of the specialist reports will be included, but where it is desirable to publish specialist reports in more detail this will be done as in separate articles. The final report will be published in *Archaeologia Cambrensis*.

## **Methodology**

### ***Excavation***

Aerial photographs and the magnetometer survey had provided relatively little information to enable targeted evaluation. The latter did identify some features of interest, but the problems of background noise and the difficulty of identifying small features by geophysical survey, meant that many features could have been missed. There was a high risk that the traditional evaluation trenches would miss the small, scattered archaeological features that were anticipated. The technique of 'strip, map and sample' was tested on the eastern part of the access road and plateau 3. This technique involves the removal of the ploughsoil under archaeological supervision to expose the natural virgin ground, in which cut features should be recognisable. These can then be identified and evaluated and excavated in detail if required. This technique proved to be very successful in the trial area and was extended to the whole site.

The stripping of the ploughsoil was done by mechanical excavators with toothless buckets under the constant supervision of archaeologists. All potential archaeological features were identified, surveyed and evaluated. The visibility of archaeological features was generally good. In some places a finer silty deposit had developed on the boulder clay. Even small, subtle features were easily recognisable in this deposit, but it had attracted burrowing animals so many of the features were disturbed. Over the rest of the site features had to be spotted in stony boulder clay or highly fractured bedrock. Once high priority areas were identified they required considerable hand cleaning to identify all related features. A total of over 23 hectares was stripped, mapped and sampled in this way and several areas identified for more intensive investigation. For efficiency, but most importantly to minimise erosion and deterioration of exposed features, excavation was carried out as soon as an area had been evaluated, without waiting for the whole site to be fully evaluated before proceeding with excavation. The post-medieval linear features, including ditches and drains, were investigated by excavating a section across them, and

recording in plan by Total Station Theodolite. Other areas, with potential for prehistoric activity, were intensively cleaned, excavated and recorded in greater detail; involving full hand excavation, detailed hand drawings at 1:20 or 1:10 as appropriate and a full photographic and written record.

### ***Environmental sampling***

The environmental sampling and processing strategy was developed in consultation with Astrid Caseldine, University of Wales, Lampeter, Gaylyne Carter, ARCUS (Archaeological Research and Consultancy at the University of Sheffield) and John Carrott, Palaeoecology Research Services (Shildon, Co. Durham).

The sampling strategy employed was related to the perceived character, interpretational importance and chronological significance of the strata under investigation. Unquestioning sampling of all deposits was avoided so that sampling was restricted to significant contexts. Modern features and post-medieval ditches were not sampled. Tree hollows were not sampled unless they were in close proximity to prehistoric features. Isolated burnt patches were initially sampled but familiarisation with these amorphous and common features suggested they had minimal archaeological significance and sampling was suspended. In other cases the significance of a context was not always immediately obvious on excavation, so a sample was taken and if necessary removed from the processing and analysis at a later date.

Where the context was large enough a bulk sample of *c.* 20 litres of soil was collected, floated and wet sieved. In some cases more was collected because the deposit was large or particularly important or both. Where the importance of the context and the results from the initial sample justified it, some of this additional material was also wet sieved.

The aim of the sampling strategy was to recover carbonised macroscopic plant remains and, if the deposit was waterlogged, possibly non-carbonised plant and animal remains, especially insect remains. However, the samples simultaneously enabled the recovery of small artefacts particularly knapping debris and evidence for metal-working.

Both flotation tanks and bucket sieving were used to process the bulk samples. The volume of the sample was measured and any large stones were removed. The deposits were first placed in the flotation tank where material floating over the sluice was caught in a 0.3mm mesh and the heavy fraction was held in a 1mm mesh. The residue was then sieved through a 1cm sieve and this large fraction was saved. Stones were removed from this fraction and discarded unless they were burnt, in which case a sample of the burnt stones was retained for analysis. The flotation did not separate all the charred remains from the residue so the 1mm residue was bucket floated. This involved agitating the material in water so that the charred remains were suspended long enough to pour off through a 0.3mm mesh sieve. This combined method proved to be very effective at separating the charred remains from the heavy fraction. The flot was dried and both the 1cm and 1mm residue fractions were dried and retained for sorting.

The flots, composed largely of charred plant remains, were weighed and catalogued and sent to Palaeoecology Research Services for study. The residue was sorted to check for small artefacts and to recover burnt bone. Samples from the roundhouse settlement and the burnt mounds were tested for the presence of magnetic metal-working debris using a magnet. All samples were visually checked for non-magnetic metal or glass working debris. Once all artefacts and any other useful evidence were removed from the residues they were discarded.

The acid soils of the site meant that there were no molluscs preserved in any of the deposits. It had been hoped that there may be waterlogged deposits that could be sampled for pollen studies, but none of these were present. Similarly a build up of colluvium was anticipated on the lower parts of the site, but this proved not to be the case. There were two natural hollows in plateau 1 that had preserved a greater depth of colluvium than elsewhere on the site, and soil columns were taken from these to investigate their potential for pollen and soil micromorphological studies. Soil columns were also taken for the deepest pit near the Early Neolithic building and from a possible glacial soil layer. The soil columns were tested for the presence of pollen but no significant pollen preservation was found in any of them. The soil columns were assessed for potential for micromorphological studies, but were found to be too disturbed by soil formation processes for good results to be likely (see appendix XV). Stone samples recovered from the burnt mounds and other features containing burnt stone were collected for study to investigate whether there was any deliberate selection of stones for their thermal properties.

After study the stone samples were discarded, two of the soil columns have been kept and all the charred plant material and burnt bone is held with the artefacts in Gwynedd Museum and Art Gallery, Bangor.

### ***Artefacts***

All stratified pottery, and occasional unstratified pieces of importance, were cleaned and marked with the site code and small finds number, as recommended by Longworth and Wood (2000, 10) and in consultation with Gwynedd Museum. The cleaning was appropriate to the type of pottery; post-medieval pottery and the harder Roman wares were washed, prehistoric pottery was very gently cleaned with a dry brush when thoroughly dry. Cleaning aimed only to expose any decoration or other details, and did not aim to remove all dirt from the sherds. Care was taken not to remove any residues or sooting on the surface. The marking was done using black and white drawing ink with a base and covering of B72 lacquer so that the marking is reversible, as recommended by Elizabeth Walker, Collections Manager, National Museum of Wales.

Lithics and glass were washed, iron and other metal objects were gradually dried and dirt was removed from the iron objects with a dry brush if necessary. Copper alloy objects were not cleaned in any way. All finds were entered in the site database, and recorded on object record sheets including weight, dimensions, a written description and a sketch of each significant item. All finds were packaged in suitable containers and conditions for long term storage, including the use of silica gel for metal items. As described above several categories of finds were recovered from wet sieving, but were processed and recorded in the same way as the rest of the material. The artefacts were then studied by the appropriate specialists (see appendix I for list of specialists) and illustrated where necessary. All corroded metal objects that were not immediately recognisable were X-rayed, as were Roman coins. Metal items such as the seal box and coins were conserved to a level at which they would be stable during long term storage. The contents of the seal box were analysed. Residue and fabric analysis was carried out on a selected number of prehistoric pot sherds. The long timetable for the fabric analysis has prevented its inclusion in this report. The Neolithic pottery assemblage is to be published as a separate paper, in more detail than the published site report will allow. The results of the fabric analysis and any conclusions that can be drawn from them will be included in this paper. Petrological analysis was carried out on the stone axe and two igneous flakes, and flint flakes and tools from the Neolithic contexts were inspected for microwear. A small number of items that were collected as artefacts but that proved to be natural and unworked were discarded. All other artefacts were packaged for storage and are held at Gwynedd Museum and Art Gallery, Bangor.

### ***Archive***

A database was created in Microsoft Access containing all site information, allowing its efficient interrogation and output. The database includes the drawing, photographic, finds and samples registers and selected information from the context sheets. All field drawings, context sheets and object record sheets have been scanned to provide a backup digital copy. The paper record and a copy of the site database and all other digital material are held by the Royal Commission on the Ancient and Historical Monuments of Wales in Aberystwyth. The artefactual archive is held by Gwynedd Museum and Art Gallery, Bangor. The archive includes a full list of contexts and this has not been reproduced here due to its length.

### ***Acknowledgements***

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site director. Most of the text below was written by Jane Kenney, but George Smith, Roland Flook and David Jenkins also contributed sections as acknowledged below.

Many colleagues have been very generous with their unpublished data and I would like to extend particular thanks to the following who have given me access to unpublished data or manuscripts: Tom Addyman, Simon Davies, Chris Hayden, Gill Hey, Chris Fenton-Thomas, Bruce Glendinning, Rod MacKey, and Alison Sheridan.

#### **Note on the presentation of radiocarbon dates**

The procedures used for choosing samples and analysing the radiocarbon dates are discussed in Appendix XVI. Full details of each date, including the date quoted in radiocarbon years BP and the laboratory number, are also given in this appendix. In the main text individual dates will be quoted as calibrated date ranges at 2 standard deviations unless stated otherwise.

## **TOPOGRAPHY AND GEOLOGY**

### ***The topography***

The site covered *c.* 35 hectares of improved pasture to the south of Bangor (centred on SH 592 705) (Fig. 1). To the north is the slight basin or plateau, now occupied by the present industrial estate, on which the Late Neolithic henge complex was located during the previous excavations. The eastern end of the site covers the crest of a ridge forming the watershed between the Ogwen and Cegin valleys. The ridge reaches *c.* 75m OD within the development area but rises further to the south. The site slopes down to the west from this ridge, with the western boundary on the banks of the Afon Cegin. Most of the site is sloping, some parts more steeply than others, and the slopes generally face north-west.

In broader terms the site is located on the narrow, undulating coastal plain between the mountains of Snowdonia and the Menai Straits. The present coast is about 2km from the site and various crossing routes went from this area to Anglesey in different periods. To the north-east where the Menai Straits open out there is the large expanse of intertidal sand and mud known as Traeth Lafan. The Afon Ogwen, which empties into Traeth Lafan, is a fast flowing stream running down from Llyn Ogwen in the heart of the mountains. Nant Ffrancon, the steep sided valley down which it flows, provides a routeway through the high mountains that was used by Telford's London to Holyhead road. The Afon Cegin is a smaller stream originating from the foot of the mountains but its mouth provided an important harbour from at least the medieval period (Davidson 2005).

In the past the site has been known as Llandegai, but it is more correctly spelt with a 'y'. Most modern Ordnance Survey maps use the 'y' spelling, though they are not entirely consistent, as do the road signs. Despite the use of the 'e' spelling in past archaeological literature the more correct 'y' spelling has been used throughout this report. It is most probable that the saint or personage remembered was actually called Cai not Tegai as is often suggested. The 'te' element being a common honorific seen in many Welsh 'llan' place names (David Longley, pers com). Melville Richards (1969), who was attempting to standardise and correct the spelling of Welsh place names uses 'Llandygái'.

### ***The geology***

(David Jenkins)

The solid geology of the site at Llandygái is exposed at numerous points both in natural outcrops and from excavation, the depth of soil being shallow over much of the area. The rock comprises relatively uniform grey to dark grey, hard, non-calcareous mudstone or siltstone of Ordovician age (Nant Ffrancon formation, Llandoveryan; British Geological Survey 1985). These rocks were compressed and tilted during the "Caledonian orogeny" such that they now dip to the east at high angles (55°), and they also developed a "cleavage" along which they now split which dips to the west at high angles (70°). The outcrops also show complex fracture (joint) patterns, both linear and curved. In addition the geological map indicates a mafic igneous intrusion (a Palaeozoic dolerite dyke running N-S), probably recorded in the adjacent railway tunnel, and there is also an ironstone bed (pisolitic haematite) within the mudstones to the south of the site which was mined in the nineteenth century.

The landform on which the site occurs is part of the Arfon platform fringing Snowdonia at around 80m OD. It has been moulded by successive glaciations with ice from both Snowdonia (moving north from the Nant Ffrancon and swinging south west) and also from the Irish Sea (moving south then swinging south west), resulting in glacial tills ("grey" and "red" respectively). Associated with these are glacial deposits (outwash sands and gravels as eskers and kames, varves, *etc.*) linked to the lake impounded on the Arfon platform between the Ogwen and Seiont valleys (Addison *et al.*, 1990), and a buried peat was observed during Houlder's excavations. In the Late Glacial these deposits would have been further modified by periglacial processes (patterned ground, solifluction, *etc.*) which have been recorded elsewhere on the platform, though they are not well expressed on the site. Finally, the

site was influenced by temperate post-glacial processes such as colluviation and by agricultural practices through to the present day.

The soils formed on this landscape have been described by Ball (1963) in one of the early memoirs produced by the Soil Survey when it was established in Bangor. They are mainly developed on glacial deposits of local or, in some parts of the coastal area, Irish Sea origin, the former being grey in colour with the finer size fractions dominated by Lower Palaeozoic siltstones, such as those underlying the site, supplemented by harder igneous material from Snowdonia in the coarser fractions. On free draining slopes this gives rise to acid “brown earths” with a clayey silt texture (*Arfon Series* “silt loams” – Hodgson 1976) and to “stagnogley” soils where drainage is poor at depth (*Sannan Series*); on more strongly drained sites “brown podzolic soils” (*Manod Series* in Ball’s memoir) may develop. In more recent terminology (Avery 1980) these would correspond to “typical orthic brown soil”, “stagnogleyic orthic brown soil” and “typical podzolic brown soil” respectively. The brown earths were represented on the upper, sloping parts of the site, while the lower, more level western parts were covered by the stagnogley soils.

### **Houlder’s excavations**

(Fig. 3)

The excavations undertaken in 1966 and 1967 by Christopher Houlder are fully described in Lynch and Musson 2001, but a summary will be provided here because of the importance of this site to the present excavation. The two sites are no more than 90m apart at the closest point and together form an area of landscape in which the prehistoric activity is more extensively and intensively recorded than any comparable area in North West Wales.

A low level of Mesolithic activity was detected but the earliest significant features dated from the Early Neolithic, in which period a rectangular timber building was constructed. As will be described below a similar building was found on the Parc Bryn Cegin site and for convenience in the discussions this first building will be referred to as Llandygai I and the Parc Bryn Cegin building as Llandygai II. One pit was contemporary with the Llandygai I building, but no other features could be confidently assigned to this phase. A single entranced henge (henge A) with a broad ditch and internal bank was constructed around 3200-3100 cal BC. This had a circle of cremation pits at its entrance and another pit with a cremation and a stone axe polisher close to the axis of the henge. There were also a group of pits near the centre of the henge and other pits, including one containing a mint condition Langdale (Group VI) stone axe. Probably somewhat later, although its date was not established, another henge was built to the south. This henge (henge B) had two entrances and presumably an external bank around its ditch. At its entrance this henge had a cremation burial in a timber chamber, and there were several pits in the interior including one pit with Peterborough Ware and three pits with Beaker pottery. The former also contained an axe polisher. Another pit contained a broken Graig Lwyd (Group VII) stone axe and flakes of the same stone.

A cursus monument was probably constructed at about the same time as henge B. This was defined by ditches interrupted by at least four causeways and may have had internal banks. In use at about the same time was a circular ditch about 35m in diameter with an entrance on its eastern side. This may have been another, smaller henge. A much smaller hengiform feature was also found. Activity on the site continued with an Early Bronze Age round barrow containing an un-urned cremation and a Food Vessel in a separate pit.

Henge A was re-used for a later prehistoric settlement with a central roundhouse, a second house and numerous pits and postholes, some defining four-poster structures. There was no dating material from these features but they were suggested as being possibly Early Iron Age. There was also Romano-British activity in the partially filled henge ditch. This included hearths, furnaces and postholes and seem to result from a short-lived settlement. In the early medieval period, probably about the sixth to eighth centuries AD, an extended inhumation cemetery was created over the cursus. This had at least 62 graves and a small rectangular mortuary enclosure with a central grave. Post-medieval trackways and field boundaries also ran across the site.

## MESOLITHIC ACTIVITY

Traces of Mesolithic activity on the site were very slight but a scatter of finds hints at a low-level presence (Fig. 2). Parts of three Late Mesolithic microliths were found in Pit Group VI towards the western end of the site. There was one complete narrow-blade scalene triangle (SF 979.2, Fig. 4) from pit 6034 and two probable mid-section fragments of narrow-blade microliths (SF 1362) from pit 6043. The scalene triangle is made on a narrow flake retaining its bulb and retouched on the end and one side. Despite wet sieving the pit fills no microburins were found to indicate specialised microlithic manufacture on site, and the finds were residual in the contexts, which also contained Late Neolithic pottery.

Another microlith (SF 1228, Fig. 4) was recovered from a posthole 9437 south of structure G, a late Iron Age feature in the middle of the roundhouse settlement. The posthole was part of a group that seemed to be related to the Iron Age features or associated with a spread of burnt stone sealing structure G. This area is discussed in detail below. The microlith is a small scalene triangle retouched on three sides, possibly originally retaining a bulb and made on light brown, pebble flint. A serrated blade (SF 712), on yellow-brown flint, was found in a disturbed area (3979) on the edge of a post-medieval ditch where is cut through roundhouse D and stones were pressed into the boulder clay. Although not particularly diagnostic this could also be Mesolithic. A blade core of Mesolithic type (SF 701) was found just south of roundhouse E in trench 4, and another Mesolithic-style core (SF 693) was found unstratified in trench 8 (Fig. 4).

These few scattered artefacts, mainly found as residual pieces in later contexts can do no more than suggest a very low-level presence in the area in the Late Mesolithic period. Slight features associated with a Mesolithic settlement might have been destroyed by ploughing but any concentration of flints in the ploughsoil would probably have been spotted during the monitoring of the ploughsoil stripping and the wet sieving program would have detected microliths surviving in later features. The scarcity of Mesolithic evidence can therefore be accepted as the result of a genuine scarcity of Mesolithic activity on the site.

Mesolithic evidence was equally sparse on Houlder's site, although one pit outside henge B had a number of Mesolithic style flints and a microlith (Lynch 2001, 24). Mesolithic groups do seem to have been present in the area but the results of these two large excavations demonstrate that their occupation sites were elsewhere.

## THE EARLY NEOLITHIC BUILDING AND SURROUNDING FEATURES

### Introduction

Located on the north-west facing slope in trench 1 (NGR SH 59438 70546), at an altitude of 56m OD, was a group of features that appeared to define the remains of a rectangular timber structure (Fig. 5). Eight substantial postholes formed two roughly parallel lines, the end posts of which were joined by shallow slots. To the south was a parallel line of regularly spaced smaller postholes. On the north side the start of a symmetrical line was indicated by post and stakeholes, but much of this side had been lost to erosion. These features together defined a regular rectangular area measuring *c.* 12.5m by 8m externally (Fig. 7). As will be discussed below it was considered that the size and plan of the structure was consistent with a roofed building. The structure was aligned east-north-east to west-south-west, and the artefacts present suggested an Early Neolithic date.

There was very little stratigraphy as the soil cover was rarely over 0.2m deep. Ploughing had removed the floor level and any occupation deposits inside the structure, although some survived in hollows nearby. Traces of interior detail, however, had survived, and it is estimated that the original floor level had lain only a few centimetres above the exposed surface.

Other pits and postholes surrounded the structure. One pit, part of a group of six near the south-western corner of the structure, contained later Neolithic Grooved Ware pottery. These pits are discussed in a later section as Pit Group VIII.

Intensive cleaning of the area revealed narrow linear features two of which (1606 and 1620) seemed to be aligned in relation to the structure. This raised the possibility of enclosures outside the structure, but the excavated evidence strongly suggested that these were peri-glacial features, probably parts of ice polygons. The fact that one ran under a deposit containing Early Neolithic material supported this assertion. Other peri-glacial features caused some confusion with the archaeology, especially in the south-eastern corner of the structure.

## Description

The features will first be described without prejudging their functions. Parts of the rectangular structure are described together where the features were of a similar character or formed patterns. Other features around the rectangular structure are described together because they formed physical groupings.

### *The rectangular structure*

(Figs 7-11, plates 1 and 2)

#### *Central postholes*

Four postholes (1406, 1519, 1532 and 1539) were laid out in a rectangle in the middle of the structure. This rectangle measured about 2.5m by 1.9m to the centres of the postholes, which were roughly aligned with the end postholes, though rather further apart. This group of postholes lay about 3m from the west end and 6m from the east end of the rectangular structure.

The postholes themselves were generally oval in plan, between 0.7-0.96m in length and 0.5-0.6m in breadth. Their sides were steep and the bases flat and they varied between 0.28 and 0.45m in depth. In all these postholes the ghost of the post had survived as a 'postpipe', a soft dark deposit with near vertical boundaries, created where the post had rotted *in situ*. These were of variable clarity but seemed to represent posts of around 0.25m in diameter. There was some evidence that posthole 1532 held two smaller posts instead of a single larger one, but this effect may have been caused by differential infilling of the postpipe (Fig. 9). Around the posts were packed stones and the redeposited sub-soil dug from the hole. Although disturbance had generally destroyed the upper parts of the postpipes, lower down they were well preserved with clearly defined boundaries, showing that they had been allowed to decay undisturbed.

Lying on the same alignment to the east of the four large postholes were two deep but narrow postholes (1291 and 1370). These were *c.* 0.3m in diameter and 0.4m and 0.27m deep respectively. They both contained packing stones and there were the remains of a postpipe in the base of 1370.

#### *The east and west ends*

The east and west ends of the structure were defined by pairs of postholes with associated features. The postholes (1483 and 1495 at the eastern end and 1689 and 1691 at the western end) were sub-circular or oval in plan and measured between 0.78-0.86m in length, 0.72-0.6m in breadth and 0.28-0.43m in depth. The eastern postholes had quite gently sloping sides and rounded bases, while the western postholes were deeper with steep sides. This difference may be due to differential truncation with only the lower parts of the postholes surviving at the eastern end. There were no postpipes in postholes 1483 and 1495. The section of posthole 1483 was more indicative of a post having been removed than rotting undisturbed *in situ*. That of 1495 suggested the infilling of an entirely empty hole (Fig. 9).

In 1691, which was particularly well preserved, the post had been securely wedged in position by carefully placed packing stones, but the post was not left to rot *in situ*. The post seems to have been levered over to the west to loosen it and then removed, disturbing the packing stones only in this part of the posthole. The hole left by the removal of the post was filled with a deposit 20% of which was composed of fire-cracked stones. These stones had been tipped in at steep angles, some almost seeming to have been wedged into gaps. Two large stones up to 0.36m in length sealed the top of the deposit. There was a concentration of charcoal towards the bottom of the deposit and it also contained seven sherds of pottery, a heavily burnt scraper, other flint flakes and some rock crystal chips. Posthole 1689 had undergone a similar sequence of events, although it retained a trace of its original postpipe, and the hole left by the removal of the post was not as densely packed with burnt stones as in 1691 (Fig. 9).

Both pairs of posts had slots or hollows running between them and a roughly parallel feature on the inside. The slot (1690) at the western end was shallow and narrow (length 1m, breadth 0.3m, and depth 0.1m) but well defined. Its fill contained stones, some of which appeared to line the cut and seemed to be packing stones. Linear organic staining in the fill may have represented traces of planks. There was no stratigraphic relationship between the slot and the postholes but their layout indicates that they were all contemporary.

The slot between the posts at the eastern end (1505) was more amorphous in shape (length 1.2m, breadth 0.82m, depth 0.09m), although still shallow. This had one posthole cut towards the southern end of the feature and large stones at the northern end suggested packing-stones for another post (Fig. 8). Postholes 1483 and 1495 cut the fill of 1505. This stratigraphic relationship probably does not indicate different phases of activity. The same evidence would be produced if the posts were erected in 1505 before the posts in the other postholes, but within the same construction event.

Running parallel to the pair of posts at the eastern end was a broad sub-rectangular slot 1404 (length 2.2m, breadth 0.5m, depth 0.15m). This was packed with medium sized stones, which had been



considerably confused by ploughing. Despite the disturbance three concentrations of stones could be defined, and the northern most concentration had a discrete pocket of charcoal in the middle. These concentrations imply packing stones for three posts (Fig. 8).

At the western end there was a shallow elongated oval cut (1548) in approximately the same relative position. This measured 0.99m by 0.6m and was 0.1m deep. This feature was heavily truncated and disturbed but a few stones did survive that may have been packing stones.

A small (0.27m diameter), very shallow (0.025m) scoop (1774) just to the east of posthole 1691 may be related to this group of features.

#### *South side*

The south side of the structure was well defined by a line of postholes. The posthole 1656 at the south-eastern corner of the structure was fairly large (0.89m in diameter, 0.35m deep), although it was confused due to being cut into the top of peri-glacial features. A considerable quantity of post packing still survived. The next four postholes in line (1254, 1277, 1572 and 1613) were smaller (between 0.39m-0.68m in length, 0.37-0.5m in breadth and 0.15m-0.2m in depth), but well defined. Both 1277 and 1613 had postpipes full of charcoal, and large pieces of charcoal were recovered from some of the other postholes (Fig. 10). The postpipes indicated posts about 0.15m in diameter.

The south-western corner was more complex. It was composed of two groups of features. Three small features (1311, 1313 and 1852) formed the corner itself. These were not particularly well defined but 1311 did appear to have some packing stones. There was a gap of c. 1.8m between these features and the other group to the east. This group consisted of two parallel slots (1573 and 1636) and two postholes (1294 and 1581). The two slots were quite different to the other features forming the south wall. They were straight sided slots with rounded ends and steep sides, up to 1.2m long, 0.58m wide and 0.25m deep. Slot 1573 had a postpipe in the middle suggesting a post c. 0.16m in diameter. Slot 1636 had carefully placed, substantial stone packing, which was disturbed at the eastern end of the feature. Postholes 1294 and 1581 were circular in plan; 1581 was 0.45m in diameter and 0.27m deep, 1294 was 0.41m in diameter and 0.12m deep. Posthole 1581 was dug through the fill of 1573 (Figs 7, 10), although this may just mean that it was put in place slightly later in the same construction event. Posthole 1294 was positioned very close to 1636 but these features could still be contemporary.

#### *North side*

Unlike the well preserved south side the north side of the structure was severely truncated and disturbed. The north-western corner of the structure still survived, represented by three fairly well preserved features (1667, 1678 and 1682/4). The best preserved was a roughly circular posthole 1684, 0.6m diameter and 0.18m deep, with post packing stones. The other two features were no more than 0.1m in depth and had no evidence for post packing or other internal features.

To the east was a group of very shallow features, no more than 0.08m deep. They varied in size and shape but all were small. Feature 1422 appeared to have a packing stone in place and several fills contained charcoal. Despite their truncated condition these features seemed to form the start of a line parallel to that to the south. It could not be demonstrated that this line continued further east except for the presence of one small feature 1676, 0.1m deep, distinguished only by the presence of charcoal in its fill.

#### *Internal features*

Inside the rectangular area defined by the postholes were several other features. A shallow slot 1556/1611 lay between posthole 1532 and the smaller posthole to the south 1613. This slot was no more than 0.1m deep, up to 0.36m wide and 2.2m long. Towards the southern end it contained stones that may have been packing stones. A shallow oval cut (1609) projected perpendicularly from this slot to the east. Although there were some hints that posthole 1532 cut the fill of the slot the spatial relationships of these features strongly suggested that they functioned together.

Adjacent to posthole 1254 was a shallow feature 1264 (0.12m deep) and also within the eastern end were two small sub-circular features about 0.45m in diameter; 1335 was 0.12m deep and 1339 was 0.36m deep. Both had bowl-like profiles and lacked obvious packing stones or other positive evidence that they were postholes.

In line with and to the east of postholes 1519 and 1406 was a feature 1337 measuring 1.18m in length, 0.66 wide and 0.23m deep. It was sub-rectangular in plan with steep sides and a flat base. It was initially assumed to be a posthole but although 1337 did contain occasional larger stones none were positioned to be suggestive of post packing. The feature was also significantly shallower than the other central postholes.

In the western end of the structure were two shallow hollows no more than 0.05m deep (1394 and 1530). These contained no post packing stones but charcoal in their fills suggested they were the truncated remains of anthropogenic features. Also in the western end was an irregular orange-brown patch of burnt sub-soil (1314) about 1m in length. Another similar patch (1468), 1.9m long, lay immediately west of posthole 1689.

### ***Features outside the rectangular structure***

#### ***Features to the west***

Three postholes 1666, 1704 and 1779 lay to the west of the rectangular structure on the same alignment as its southern side. These were all sub-circular with a maximum width of 0.4m-0.58m and a depth of 0.43m-0.18m (Fig. 7). All were originally probably over 0.4m in depth, but had been truncated to varying degrees; 1779 had been significantly disturbed by the mechanical excavator dragging one of the packing stones out of place. All three features had packing stones largely in place and 1779 had traces of a postpipe in the base. Although there were flecks of charcoal in their fills there was no evidence that these posts had been burnt down and the postpipe in 1779 suggests that the posts had been left to rot *in situ*.

Nearly parallel to postholes 1704 and 1779 ran a slot 1727 3.42m long and 0.4m wide, although the eastern end was disturbed by burrowing and the original feature was probably only c. 2.6m long. It was 0.16m deep and the undisturbed part was fairly straight with parallel steep sides. The fill contained occasional stones but none suggestive of packing stones.

Further east and just slightly off the same alignment was another shorter slot 1724, measuring 1.7m by 0.4m and 0.1m deep. This was shallower and slightly less regular than 1727. While these features were probably animal burrows, their straightness and the fact that they were nearly parallel with the line of postholes makes it possible that these were structural slots (Fig. 7).

Immediately east of the slots was a group of possible stakeholes (1512, 1692, 1787, 1789, 1791, 1793, 1795, 1797, 1799, 1801, 1803, 1805, 1807, 1809, 1811, 1813, 1815, 1817, and 1819). With the exception of 1692, which was a small curvilinear feature 0.5m long, all these features were sub-circular, no more than 0.14m in diameter and 0.08m deep. Not all of these had steep sides or were well defined and although some may have been truncated stakeholes others could have been animal burrows or root holes. Potsherds from 1512 and 1692 suggest that this area represents disturbed remains of an occupation deposit.

To the north of the slots were two irregular patches of burnt soil (1744 and 1758) composed of orange burnt clayey silt. The largest patch measured 2.2m by 1.1m. Near these was a shallow pit 1729, 1.1m by 0.8m and 0.13m deep, with some evidence of *in situ* burning on its sides.

There were numerous other features to the west of the rectangular structure, but most of these were slight and of unclear function with the exception of a large pit 1619.

Pit 1619 was an irregular oval in plan and measured 2.5m by 1.6m and 0.56m in depth. Its sides were generally steep but rather irregular and its base was rounded. It had a number of distinct fills (Fig. 12). The basal fills were grey silts and clays, possibly water deposited. Above these were brown silty deposits some from erosion of the sides and general silting events. Towards the top of the fill was a distinctive charcoal-rich layer with heat shattered stone. This contained fragments of Early Neolithic pottery, a burnt flint flake, a clear quartz crystal and the butt end of a polished stone axe. The pit then filled in entirely with more silting containing occasional lenses of charcoal.

To the north of the pit was a small patch of burnt sub-soil (1657) and a shallow hollow (1647), 0.08m deep, the fill of which contained frequent charcoal flecks.

To the south of the pit there was a line of shallow features (1637, 1681, 1687, 1694, and 1719) no more than 0.15m deep running nearly, but not quite, parallel to the extended line of the south wall. Individually these features were unconvincing. Although some contained flecks of charcoal there was little to suggest that these were not just hollows or rootholes. None of these features produced finds and it is probable that their alignment was due to chance and that these were not significant archaeological features.

Nearby were where three irregular features 1662, 1664 and 1716. Feature 1662, which appeared to cut 1664, contained charcoal and both it and 1664 contained some stones but none convincing as packing stones.

Three small sub-circular pits (1545, 1547, and 1605) no more than 0.12m deep were rather better defined and may have been real features, although they had no finds and little charcoal. However, these features could have been related to the group of six pits to the south-east, one of which contained Grooved Ware. These will be fully discussed elsewhere as Pit Group VIII.

### *Features to the east*

There were fewer features beyond the eastern end of the rectangular structure and most of these seemed to be of minimal importance. Two, however, were of interest; one was a circular pit 1249 with vertical sides and a flat base, measuring 1.13m by 0.98m, and 0.25m deep (Fig. 12). It was located near the south-eastern corner of the rectangular structure.

Just beyond the eastern end of the rectangular structure was a small pit 1328, measuring 0.42m by 0.37m and 0.15m deep. This was rather confused as it seemed to have been cut into the eastern end of a small elongated oval feature 1393, and the two features had very similar red-brown silty fill, with the exception that the fill of 1328 contained a high proportion of burnt bone fragments. It was these fragments that largely defined this as a separate pit. There was a much larger quantity of burnt bone in pit 1328 than anywhere else on site and it was assumed to be a human cremation. However, analysis showed that the bone was of non-human animals.

Also in this area were two shallow hollows (1377 and 1379), no more than 0.07m deep, with one apparently cutting the other. These contained flecks of charcoal but there was nothing to suggest that they were significant features. There seems to have been root disturbance in this area as an adjacent irregular feature 1383 was interpreted as a root hollow. A small feature 1381 apparently cutting the top of the hollow might have been a posthole but is more likely to have been variation within the root hollow. An irregular feature 1715 a little further east was definitely a root hollow.

### *Other outlying features*

There was a group of six pits laid out in a roughly oval pattern to the south of the rectangular structure. One of these produced Grooved Ware pottery indicating that this group belongs to a later period than other activity in this area and these features will be described in the next section as Pit Group VIII.

About 9m south of the rectangular structure was an elongated hollow 1738, measuring 3.58m by 0.9m, and 0.28m deep. Its terminals were rounded and its sides and base were fairly irregular. The hollow was filled by medium size rounded stones. Within this stony fill was a lens of charcoal (1726), which contained a large rim sherd of a single Early Neolithic pot.

To the south of the main building was an irregular shallow hollow 1669, filled by mid-brown sandy silt with poorly sorted stones of all sizes (1670). This produced seven sherds of pottery as well as other small fragments, a flint flake and a chip of worked quartz. The irregular shape of the hollow suggested it was natural and although no soil structure had survived, the quantity of finds suggests that the fill was a remnant of an old ground surface or occupation layer surviving due to its protection in the hollow.

About 3m further south from this deposit was a sub-circular pit 1764, 1m in diameter and 0.32m deep. This contained no finds and no evidence of use as a posthole.

## **Artefacts**

### ***Distribution***

A low level of finds was recovered from across this area but the majority was concentrated within the rectangular structure. Table 1 lists the quantity and type of finds from each feature and figure 13 shows their distribution. The postholes 1406 and 1532 were particularly rich in finds, and the material came from both the post packing and from the postpipes. The eastern end postholes contained relatively little but post trench 1404 was quite productive of finds. At the western end the material in postholes 1689 and 1691 came mainly from the spaces left by the removal of the posts. Only a few finds were recovered from the smaller postholes.

To the west of the rectangular structure a sherd of Early Neolithic pottery was found in posthole 1704, and flint chips were recovered from posthole 1666. Activity in this western area was also demonstrated by pottery in the burnt area 1744, hollow 1716 and in the animal burrows or hollows 1512 and 1692. A shallow pit in this area 1729 and hollow 1647 also contained a small number of artefacts. The large pit 1619 contained the butt end of a polished stone axe within a single charcoal-rich layer. The axe was associated with fragments of Early Neolithic pottery, a burnt flint flake, and a clear quartz crystal.

There were few finds to the east of the rectangular structure but pit 1249 was quite rich in finds and pit 1327 contained the largest deposit of burnt animal bone fragments. Finds to the south were mainly preserved in the irregular natural hollow 1669, filled by a probable old ground surface deposit 1670. These were mainly small eroded sherds of pottery, but hollow 1738 produced the largest Early Neolithic pot sherd on the site.

### **Pottery**

A full catalogue of the pottery is included in appendix II and this section provides a summary of Frances Lynch's conclusions as stated in that appendix. See figure 14 for pottery illustrations.

All the pottery contained within contexts associated with the rectangular structure was exclusively Early Neolithic, mostly normal 'Irish Sea ware' shouldered bowls but very little of any one vessel surviving. There was one large segment of rim and body of an unshouldered bowl (SF167) from the elongated pit 1738, but its fabric is much the same as the other vessels, as is the surface treatment and the shape of the rim. Most sherds are small and abraded, suggesting that they are essentially domestic rubbish. A very few joins can be made between ancient breaks but they remain small pieces, except the large sherd of the unshouldered bowl (SF 167). This sherd broke along old breaks as it was lifted but was found in the ground as a single piece laid flat with its exterior facing upwards. It might be considered a deliberate 'deposit' but the rest of the smaller sherds seem to be accidental inclusions. The nature of the finds is closely comparable to those from the Early Neolithic building found under Llandygai henge B in 1967.

The old ground surface contexts also included predominately Early Neolithic material, again small quantities of several different vessels. This area contained one sherd that might not be Early Neolithic but it is not far from the norm. There were also some fragments of hard, abrasive material from this feature and from deposit 1758. This is not true pottery and may be just burnt pieces of boulder clay.

Two sherds (find numbers 131 and 143) were chosen for residue analysis (see appendix III for full report). Both came from the old ground surface deposit in hollow 1669 and were chosen because they had possible sooting. SF 143 failed to produce traces of lipids but SF 131 produced traces of a triacylglycerol oil or fat probably indicative of a plant oil. The fragmentary and eroded nature of most of the sherds makes the survival of residues on other sherds unlikely but this analysis has demonstrated that it is possible. Whether further analysis would produce sufficiently enlightening results to justify the damage to this small but important pottery assemblage is a matter for debate.

Petrological analysis of the fabric of selected sherds indicated their local origin but highlighted SF 167 as unusual, because of the absence of lithic clasts and the sophistication of its fabric, which might indicate a more distant origin (appendix XVII).

### **Lithics**

Full reports on the flint, quartz, Graig Lwyd stone and other stone artefacts are included in appendices VI to VIII. This section provides a summary of those reports by George Smith and John Llywelyn Williams.

The flint assemblage contained an unusually high ratio of retouched and utilised pieces to waste pieces, despite extensive sieving of deposits to recover knapping debris. Only a single flint core was found. The flint tools consisted of a broken arrowhead, two scrapers, two spurred pieces, one piercer, two casually retouched pieces and three other utilised flakes (Fig. 15). This varied tool assemblage suggests domestic use, not the inclusion of newly manufactured or carefully selected objects. The scarcity of debitage suggests that most knapping took place away from the rectangular structure. Microwear analysis showed that several of the tools had been used and identified a small flake as a component of a hafted composite sickle (appendix X).

All the flint pieces were from pebble flint and therefore small, with the exception of the arrowhead. The pebble-backed scrapers are comparable with examples from beneath the Trefignath chambered tomb, Holyhead, Anglesey (Healey 1987 50-9) and in the tomb at Din Dryfol, south-west Anglesey (Lynch 1987), where pebble flint was also the main raw material used.

The arrowhead (SF88) is the only non-domestic object. It is a large example, particularly for Western Britain, and may not have been leaf-shaped but kite-shaped, because its sides are almost straight. Kite-shaped arrowheads are recorded as most common in Ireland and Scotland with a few recorded from Northern England from special burial deposits (Green 1984, 32). In North Wales one was found at the chambered tomb of Dyffryn Ardudwy, Meirionnydd and two at the chambered tomb of Pant y Saer, Anglesey (Lynch 1969, 156). One of the latter was a large example, 60mm long, comparable to that from Parc Bryn Cegin.

The arrowhead, larger in size and better in quality of raw material than the rest of the assemblage, could have been imported. It was certainly a delicate and probably special object. Its position, in a primary context amongst the packing of one of the main posts of the building may indicate a deliberate and meaningful deposit.

The crystal quartz assemblage, although much smaller, matched the flint assemblage. There was a wide scatter of debitage and two fragmentary cores were recovered. Two pieces appeared to be tools, a truncated piece and a piercer (SF894 and SF1239, Fig. 15), although the transparency of the material



made retouch difficult to detect. The debitage was almost impossible to see on site and was only recovered by wet sieving. Most of the assemblage came from the area of the rectangular structure but a crystal fragment weighing 3g came from the charcoal-rich deposit in pit 1619. This was in association with the broken stone axe, crystal debitage and one of the possibly retouched crystal pieces. The quantity of debitage demonstrates that this was not an isolated experiment but that items were regularly being made of rock crystal on the site.

Seventeen flakes and twenty-three chips of Graig Lwyd stone were recovered from the area of the rectangular structure and surrounding pits (excluding Pit Group VIII). The distribution of these flakes was concentrated on the central postholes. Posthole 1406 produced one piece from the packing deposit and one from the postpipe fill, while in 1532 the postpipe produced three flakes of the same stone (including SF1167 and SF1225, Fig. 15). There was a flake from aisle posthole 1519, but also two flakes from the eastern post trench 1404 (SF1037, Fig. 15) and single flakes from an internal posthole 1291 and a posthole on the south wall 1294. Two small pits to the west of the building contained pieces, as did the patch of old ground surface to the south. The broken stone axe from the large pit 1619 west of the building, associated with fragments of Early Neolithic pottery, may be significant in this context. The axe was initially believed to be made of Graig Lwyd stone but petrological analysis (see appendix IX) proved that it was made of an Ordovician volcanic tuff. Not all the flakes found may be related to the Early Neolithic activity as four pieces were found in Pit Group VIII with Grooved Ware pottery (this pit group and its finds will be discussed below). However, the location of flakes within the main postholes of the structure, especially in the lower parts of the postpipes, shows that these were genuinely related to its use.

Some of the flakes from the rectangular structure had remnants of polish. One piece from the postpipe in posthole 1532 was polished, as was a flake from the post trench 1404. Pit 1729 to the west of the structure contained an ovoid medallion shaped flake with a ground and polished surface (SF1097, Fig. 15), in association with a small unpolished reduction flake (but also see the discussion of the finds from Pit Group VIII). This demonstrates that the flakes were from polished stone tools, most likely axes.

The only other stone artefact from the area of the rectangular structure was an elongated oval pebble of a hard igneous stone (SF 135). This was found in post-hole 1656 with other packing stones, and although in shape and size it is very similar to an axe it has not been shaped, worked or obviously utilised in any way. This may have been deliberately selected for its shape but its location suggests that it was used as a normal packing stone.

### **Plant and animal remains**

Biological remains are fully catalogued and discussed in appendix XIV and this section provides a brief summary of the remains. One hundred and three samples from features associated with the Early Neolithic building were studied. Most contained modern intrusive or contaminant remains and the ancient remains were largely restricted to charred plant material. Most of the charcoal was represented as small fragments of a single wood type. Some of the larger charcoal fragments were identified as oak, hazel and, in small quantities, pine. Most of the features forming the rectangular structure had a low level of charcoal. The largest quantities were concentrated in posthole 1406, post trench 1404 and in several postholes on the south wall. In most of these larger deposits oak was dominant with some hazel, although no oak was identified from 1406. In several of these features the oak charcoal was in the form of silted 'slivers' and probably derived from structural timbers. Fairly large quantities of oak charcoal were found in pit 1249, at the south-eastern corner of the rectangular structure and in the old land surface to the south, but this material was not characteristic of charred timbers. The charcoal around the large rim sherd in feature 1738 was also mainly oak, but the charcoal-rich layer in pit 1619 failed to produce identifiable material. Pine charcoal was recovered from 1676 and a possible stakehole nearby.

Postholes 1406 and 1532 contained the largest amount of charred hazelnut shells and a few poorly preserved cereal grains. Small quantities of charred hazelnut fragments and identifiable cereal grains were also recorded from the internal postholes 1291 and 1370, pit 1335 and from all features forming the eastern end of the structure. Charred hazelnut shells and cereal grains also came from the possible stake or root holes 1377 and 1381 to the east of the structure. Pit 1249 produced an assemblage dominated by hazelnut shell and five cereal grains. Some features at the western end of the structure contained small amounts of hazelnut shell. There were also a few cereal grains but most were unidentifiable. Only postholes 1666 and 1691 at this end produced identifiable grains, including barley, emmer wheat and naked wheat. There is, therefore, a suggestion of food processing being concentrated at the eastern end of the structure.

Other foods were represented by one charred fruit stone of blackberry from post-trench 1404. Evidence of weeds associated with crop fields were restricted to finds of (*Galium aparine* L.) from post-holes 1406 and 1483, and sun spurge (*Euphorbia helioscopia* L.) and knotweed (*Persicaria*) from the fill of post-hole 1666.

Animal bone was represented only by tiny fragments of burnt bone, which was largely unidentifiable. Postholes 1406 and 1532 contained small amounts, as did pit 1339, but the small pit 1328 close to the line of the eastern gable end contained most with 56g. This was the only collection with larger fragments (to 32 mm), some of which resembled pieces of horncore but this could be caprovid or cattle.

## **Dating**

### ***Artefacts***

With the exception of the Pit Group VIII to the south of the rectangular structure all pottery found in this area dated to the Early Neolithic. The absence of activity of other periods suggests that the structure was probably Early Neolithic. At a more detailed level the main postholes preserve the best stratigraphy for studying the relationship of the finds to the structural features. In the main postholes artefacts were presumably introduced during three phases; construction, use and abandonment/demolition. Material introduced during construction was presumably either used by the builders or from earlier activity and would be expected in the post-packing material. During the use of the structure artefacts might have been trodden into the post-packing or worked their way down through animal burrowing or other disturbance. Material introduced into the postpipes and post removal hollows in the abandonment phase could be either deliberately introduced, incidentally deposited as rubbish produced elsewhere or already present and originating from the use of the building. The first two of these options would date the abandonment of the structure, while the last would date its use.

Early Neolithic pottery and flints were recovered from the post-packing material in postholes 1406 and 1532, but most of these came from the top 0.2m of the fill, which was the most disturbed, and could include finds from the postpipes. It is also possible that finds were trampled into the top of the post-packing during the use of the structure. A burnt leaf-shaped arrowhead (SF 88) from 1406 was situated against the edge of the posthole and is most likely to belong to the packing phase. The artefacts from the postpipes were more securely stratified as these were only taken from areas where the postpipes were clearly defined. In 1406 these included flint, a pot sherd and a Graig Lwyd flake. Another Graig Lwyd flake came from the packing material. The postpipes in 1532 produced flint and three Graig Lwyd flakes, one burnt and broken into three pieces. The decay of the post, which would involve insect, worm and root activity, would provide opportunity for material to be introduced from surface deposits, and it is assumed that this explains the presence of artefacts in the postpipes. The artefacts in the hollow left in posthole 1691 when the post was removed could have been deliberately deposited. These finds included seven pot sherds and a burnt flint scraper. The material introduced into 1691 could have originated from the occupation deposit within the building, the burnt stones possibly being related to cooking activities. The way in which burnt stones were packed in looked as if they were deliberately placed so this backfilling may have represented ritual deposition. In this case the possibility that the material was imported from elsewhere cannot be ruled out, but it seems most likely that local occupation debris was used.

In conclusion while a small amount of material in the posthole packing may relate to activity prior to the construction of the rectangular structure most of the material from features forming this structure probably originates from its use in the Early Neolithic. The three postholes extending the southern rows of posts to the west appear contemporary with the rectangular structure due to their spatial relationship, but the presence of Early Neolithic pottery in posthole 1704 confirms this. Many of the other features around the rectangular structure also contained Early Neolithic pottery and other artefacts consistent with an Early Neolithic date. The only exception was considerable quantities of Grooved Ware in pit 1553. It is assumed that the other pits close by also dated from the later Neolithic and other features not otherwise dated could have been contemporary. However, the wide distribution of Early Neolithic finds and very limited distribution of later material does indicate that most of the activity in this area was Early Neolithic.

### ***Radiocarbon dates***

Early Neolithic rectangular structures are the subject of much debate as discussed below, so it was important to obtain a suit of dates related as closely as possible to the use of the structure. The principles followed in the selecting of the dates are specified by Marshall (appendix XVI). In summary the aim was to obtain a range of dates covering the full period of use of the structure and to ensure the activity itself is dated by selecting short-lived samples from secure contexts related directly to the use

of the structure. Hearth deposits are ideal for this purpose, but in their absence material from the postholes was used, with some material from other internal features. As discussed above the material in the postholes was most likely to have come from the use of the structure. In order to ensure both early and late material was dated samples were taken from post-packing deposits and from the fill of the post removal event in posthole 1691. To avoid accidentally restricting the dating to specific events samples were taken from all parts of the structure with an emphasis on the deeper features, where contamination was less likely. Both hazelnut shells and cereal grains were dated to increase the range of activities dated. Two samples were dated from each of four features, three postholes and one pit, to test the assumption that the material in the features was of the same actual age. These duplicate measurements all proved to be statistically consistent. Fourteen samples were submitted from features interpreted as structural elements and from one internal pit.

To effectively date all the activity around the rectangular structure would have required a very large number of dates. Many of the features can be approximately dated by their finds and association to the structure, so the dating programme concentrated on the structure itself with the exception of pit 1619. The charcoal layer within this pit produced a broken stone axe and it was desirable to determine whether the activity represented in this large pit was related to the structure or to the later Neolithic activity represented by the Grooved Ware in pit 1553. Two samples from the charcoal-rich layer (1631) containing the axe were submitted for dating. All the samples from this area were submitted to the Leibniz Labor für Altersbestimmung und Isopenforschung, Christian-Albrechts-Universität, Kiel, Germany for AMS dating.

The samples were sent in two batches to allow the use of simulation modelling to establish the optimum number of dates necessary. A preliminary round of six samples was submitted to give an indication of the date before the final number of samples was chosen. This required selecting the preliminary samples before the full assessment of the charred plant material had been completed. In order to obtain the preliminary dates quickly a piece of oak charcoal of indeterminate age was selected from posthole 1613, although this was not an ideal sample material. The risk of potential age at death offset in this sample mean that its date can only be used as a *terminus post quem* for the date of the structure. Excluding this sample the other thirteen measurements from the structure are statistically consistent and could have been all exactly the same age. However, the same results could be produced by material accumulating over a short period of time. Using the assumption that the structure was in continuous use for a period of time a Bayesian model was produced from the dates (see appendix XVI for details). The model provides estimates for the start of the use of the building of 3800-3670 cal BC at 95% probability and 3760-3700 cal BC at 68% probability and the end of use of 3690-3610 cal BC at 95% probability and 3670-3620 cal BC at 68% probability. The span of use of the structure is estimated at 10-140 years at 95% probability and 40-110 years at 68% probability. Due to the number of samples dated and the consistency of the results the 68% probability results can be accepted as the most probable dates.

Two dates were obtained on the charcoal-rich fill (1631) in the large pit 1619, to the west of the structure. These dates proved to be very different, indicating contamination of the deposit. One date (KIA31089, 3800-3640 cal BC) is consistent with the dates from the rectangular structure, while the other (KIA31088, 3520-3350 cal BC) is later, but not late enough to be attributed to the Late Neolithic activity nearby (see discussion of Pit Group VIII below). Out of a total of 20 dates from this area of the site (including the pit group) KIA31088 is the only assay to suggest activity at this period. As the upper fills of the pit seem to have derived from natural silting and also contained some charcoal it can be assumed that the dated hazelnut shell was introduced by this means long after the main layer of charcoal was deposited. Knowing the deposit has been contaminated and having no corroboration date KIA31089 must be used with some care. However, it is so similar to the dates from the rectangular structure that the particular hazelnut shell dated must have been produced by this period of activity. The question is how much of the material in this layer was also from the structure and how much was later. The presence of Early Neolithic pottery and lack of any later finds does support the earlier date and suggests that most of the material was related to the use of the structure. The stone axe, however, could have been deposited at any time up to 3520-3350 cal BC, or possibly later as the evidence for contamination shows that this was not a sealed deposit. It is not possible, therefore, to give a reliable date for this artefact.

### **Interpretation**

The Early Neolithic activity in this area can be divided into three phases: the construction of the rectangular structure, its use and its abandonment. The form of the structure will be interpreted under the first phase, followed by a discussion of the evidence for the other phases. Some comparisons will be made to other similar structures, particularly the building under Llandygai henge B. For

convenience the henge B building will subsequently be referred to as Llandygai I, with the current building as Llandygai II.

### ***Phase I: Construction***

It has been established above that the majority of the postholes in this area were restricted to a rectangular area measuring *c.* 12.5m by 8m externally and apparently defining a single structure. The alignment of the eight large postholes along the centre of the rectangular structure suggested that they were all contemporary and held two parallel rows of four posts each. The four central postholes appear to have held posts about 0.25m in diameter, which were firmly packed in place in fairly deep, steep sided holes. The undisturbed post-packing stones in posthole 1691 at the western end indicated a post about 0.3m in diameter.

It is possible that all these posts were free standing, but a structure of this size could be easily roofed and the layout of the posts would be appropriate for a roofed building. It is proposed that the large posts formed aisle posts supporting the roof. This would leave relatively little weight on the walls, explaining the smaller shallower postholes defining the northern and southern wall lines. Such a building would presumably have a pitched roof and flat gable ends, and would fit into Darvill's type A (Darvill 1996). The Llandygai I building (Lynch 2001) can be seen to be of very similar design even though the wall lines were less well preserved.

The Llandygai II building had a possible internal area of 10.5m by 6.5m, i.e. 68.25m<sup>2</sup>, and a total area of about 100m<sup>2</sup>. Comparing the size of these structures is not straightforward as interpretations of their forms often vary, and many are not complete. In general terms throughout Britain and Ireland these structures vary in size between Balbridie, Aberdeenshire (Ralston 1982, Fairweather and Ralston 1993) with an area of 288m<sup>2</sup> and small structures such as Gwernvale, Powys (Britnell and Savory 1984) and the Clegyr Boia, Pembrokeshire (Williams 1952) houses at 13.3 and 13.8m<sup>2</sup>. Llandygai II with an area of 100 m<sup>2</sup> falls within the range of the second rank buildings, and is the largest of these buildings in Wales.

Many Early Neolithic buildings in Ireland and to a lesser extent in England, Scotland and Wales have foundation trenches. The survival of charred timbers on several sites demonstrates that these supported walls constructed of planks set vertically in the ground. Such trenches are often deep, those at Corbally, Co. Kildare were over 1m deep (Purcell 1999, 2002), and the existence of many well preserved post-built structures without trenches shows that their lack is not just an artefact of differential preservation. The absence of foundation trenches in the current building shows that it did not have the plank walls. It is assumed that the walls were of wattle and daub, although there was no firm evidence for this. Stakes would have been necessary to support the wattles but these may not have penetrated the ground deeply and so no traces survived. Other types of walling are possible, for example turf or cob, but perhaps less likely. Ó Riordáin (1954) suggested brushwood or turves for the walls of Lough Gur A, Co. Limerick, but the walls there had a double line of posts, presumably to restrain material between them.

### ***Partitions and other internal features***

If this structure is accepted as a rectangular timber building several of the smaller features inside it could indicate a division of the internal space. The shallow slot 1556/1611 running between posthole 1532 and the southern wall post 1613 was quite convincing as the support for a partition inside the building. Evidence for a comparable slot on the northern side of the building has been lost to erosion.

Other features within the building hint at further partitions. The two deep but narrow postholes (1291 and 1370) seem too small to have held major structural timbers but could have supported a partition either between the two posts or between the posts and the outer walls, possibly also involving posthole 1264. However the depth of these postholes compared to the other internal features does suggest that they may have supported more than a slight partition. Whether features 1335 and 1339 were pits or postholes is unclear. Their shapes and lack of packing stones suggested pits, but they were of a very similar size to the south wall postholes and if they held posts it is possible that, along with 1264, they divided off the south-eastern corner of the structure.

There were also hints of a partition across the western end of the building, although the evidence for this was much slighter. It may have started with the posthole 1581 on the southern wall and run to a pair of features on the northern wall (1398 and 1400). On this line were two shallow hollows no more than 0.05m deep (1394 and 1530). Individually they were not very convincing but their location was appropriate to support a partition.

Feature 1337 was difficult to interpret. Initially it was assumed to be another aisle posthole but despite intensive cleaning no matching pair could be found for it. Although 1337 did contain occasional medium-sized stones there were no obvious post-packing stones. The feature was also significantly shallower than the other aisle postholes. It is possible that it was an abandoned posthole



dug in the wrong place or that it was an internal pit, but its position on the line of the aisle posts appeared to be significant.

Lynch refers to Llandygai I as a tripartite structure in comparison with Ballyglass, Co. Mayo (Ó Nualláin 1972), but this design feature is not obvious in most other examples, although it might be applicable to houses 1 and 2 at Corbally (Purcell 2002). It does not apply to Llandygai II, which if the partitions are ignored can be divided into two by the positions of the main postholes; the four internal postholes were located in the western half of the structure, leaving the eastern half open. This layout also applies to Llandygai I, but it had an additional pair of postholes before the north-eastern gable end, creating the tripartite division. If Lismore Fields building I can be interpreted as two structures or units, then the eastern unit is very similar to Llandygai II, including partitions running to the middle pair of postholes. The rectangular structure on Moel y Gaer, Flintshire (Britnell 1991) also had a similar plan. The open compartment at Moel y Gaer and Lismore Fields, Derbyshire (Garton 1991) was about 4m long, that at Ballyglass and both Llandygai buildings was about 5.5m. To extend the comparisons wider the space between the partitions at the Lockerbie Academy building, Dumfries and Galloway (Bruce Glendinning pers. com.) was about 4m, and the largest open spaces at Balbridie and Claish, Stirlingshire (Barclay *et al* 2002a) were about 5.5m. Many of the smaller rectangular structures throughout the British Isles were of a similar size and it is possible that an important consideration in the design of these buildings was to provide an open space of roughly this size. At Llandygai II this might be used to argue that postholes 1370 and 1291 did not support a partition, but had another function related to the use of this space. These postholes were much deeper and more substantial than features related to the other proposed partitions.

Barclay *et al* (2002b) consider the possibility that the concentration of postholes in one half of the structure might indicate an upper floor, possibly for storage. Most examples seem to have the open area at the north or east end of the building, with the exception of Ballyglass that has it at the south-east end, but the number of examples are too few to establish whether this was a significant trend.

#### *Gable end structures*

Both gable ends displayed considerable complexity and it is not obvious how to interpret the features. The gable postholes at each end were joined by slots. At the western end the slot 1690 was narrow and shallow and traces of staining may indicate the presence of planks. The gap between the posts at this end may have been blocked by vertical planking, unlike the rest of the walls, which are assumed to be of wattle and daub. At the eastern end of the building the slot 1505 was much broader and more amorphous in shape. It seemed to have held at least two posts, which would also have blocked the space between the gable posts. Whilst it is possible that 1690 held some type of threshold feature, it seems more likely that the space between the posts at both ends was blocked and that the doorway was located elsewhere.

Immediately inside and parallel to the eastern gable end complex was a trench 1404, which seemed to have held at least three posts. It seems unlikely that these were structural posts so close to the gable end and can perhaps be seen as supporting some internal timber feature. Possibilities that might be proposed could include a bench, narrow table or even a 'dresser' similar to the stone ones at Skara Brae and other Orkney settlements, but the true nature of this feature cannot be determined from the buried remains. It is possible that there was a similar, perhaps smaller feature at the western end. Feature 1548 was shallow, much shorter than 1404, and although it contained a few stones it is not clear that this held a post or posts. Although not exactly comparable it is worth noting the slots and postholes in the Neolithic building at Balbridie. These were immediately inside both gable ends and blocked access through a proposed doorway. The Neolithic building at Claish had similar features, though not as close to the gable ends (Barclay 2003, 78).

#### *Orientation and entrance*

The building was aligned east-north-east to west-south-west, almost along the contour of the hill. Llandygai I was orientated more towards the north and a survey of similar structures throughout the British Isles reveals alignments to all points of the compass. This may indicate that the orientation of these structures was due to local topography rather than tradition or ritual. The alignment along the contours at Llandygai II meant that there was a gentle but noticeable slope of *c.*1 in 17 south-north across the building, which could have caused some inconvenience for its use. The slope as excavated, however, may not accurately reflect that on which the structure was built. The loss of most of the north wall suggests that the building had been constructed on a level terrace and that ploughing subsequently smoothed out the slope, differentially eroding the outer edge of the terrace. However, this erosion is unlikely to have removed all trace of a terrace of the size necessary to level the slope for a building platform. Sloping floors are noted elsewhere in Early Neolithic buildings at Drummenny, Co. Donegal

(Dunne 2003, 170), Ballyglass (Ó Nualláin 1972) and Lough Gur A (Ó Riordáin 1954). At the last site the southern end was 0.6m lower than the northern end. It should be noted that all the later roundhouses at Parc Bryn Cegin also had sloping floors.

It is proposed that there was an entrance in the south-western corner of the Llandygai II building. The slots 1573 and 1636 imply a structural difference about this corner and the gap between these and the three corner features (1311, 1313 and 1852) is an appropriate width for a door at c. 1.8m. The heavy stone packing in 1636, which was not seen in any of the other south wall postholes, indicated a particularly important structural element. How slots 1573 and 1636 functioned in relation to an entrance or what timbers they held is not clear. It is possible that the small posthole 1294 may be related to the fixing of the door itself, although it could have been a regular wall posthole. If this interpretation is correct the apparent removal of the post from 1636 (discussed below), when all the other posts along the wall seem to have been left to rot *in situ*, may be of significance.

In other comparable buildings doorways are often difficult to define, though entrances have been proposed facing all aspects. However, slightly more are recorded as facing north or west as opposed to east or south, contrary to the conclusions of Topping (1996). The orientation of the building and the position of the door therefore may have less to do with maximising light into the building than has been supposed. There is, however, some preference for doorways in the corner of walls, often in the corner of an end wall. Cooney (2000, 62) notes that there are screened areas sometimes just inside the doorway and a possible emphasis on the right hand side of the building. If the entrance to the present building was in the south-west corner it would have led into an apparent partitioned area at the west end of the structure, and on entering one would be forced to turn right into the building.

### ***Phase II: Use***

Many of the features inside the building can be identified as non-structural internal elements, which could have been added after the initial construction of the building but were probably integral to its design. The only exceptions were the possible pits 1337, 1335 and 1339. Although some of these may also have had a structural role it is probable that they were pits dug during the use of the building. The burnt deposits at the western end of the building (1314 and 1468) could have been the remains of hearths, although they were indistinguishable from numerous other burnt patches of various dates scattered over the site. Patch 1314 in particular seems too close to the building wall to have been the location of a hearth and 1467 would have been outside the western gable of the building. It is more likely that any contemporary hearth had been eroded away, although the presence of probable fuel wood charcoal and burnt stones does suggest that the building did have a hearth.

Other features surrounded the building, some of which could pre- or post-date the building. However, their spatial relationship to the building, the extensive scatter of Early Neolithic pottery and the absence of activity in other periods, except for the group of later Neolithic pits, suggests that most belonged to the lifetime of the building.

There was a small amount of activity close to the eastern end of the building, but most of the Early Neolithic activity extended to the west. The function of the large pit 1619 close to the west end of the building is unclear, although the water-borne silts in the lower fills may suggest water catchment. As discussed above one radiocarbon date (KIA31089, 3785-3655 cal BC) and the presence of Early Neolithic pottery do suggest that the charcoal layer (context 1631) half way up the fill of this pit was related to the use of the building. The quantity of charcoal and presence of burnt stone may be related to a burning event, perhaps cooking. This deposit could, therefore, be interpreted as rubbish dumped into a convenient, abandoned pit. The presence of the broken axe and quartz crystal may indicate a more symbolic aspect to the activity. The use of crystal quartz and Graig Lwyd stone on the site are discussed below and the Neolithic tradition of burying material in pits is discussed in relation to the later pit groups. The large pit itself was presumably dug during the life of or before the building. The nature of the upper fills and the presence of later charred material in layer 1631 suggest that after the dumping event the pit was left open to fill gradually with colluvial deposits.

The three postholes on the alignment of the south wall were too far apart to represent a continuation of the main building in this direction, and there was no other evidence to support such an extension. They must, therefore, be seen as a separate, though related structure. It was 7.8m from 1704 to 1666 and almost exactly the same distance from 1666 to the south-western corner of the building. If the postholes represented a fence line intermediate posts or stakes would be expected within such a wide gap. The posts may, therefore, have been free standing. The building at Yarnton, Oxfordshire had four posts continuing the line of the north wall (Hey forthcoming). At Lismore Fields, Derbyshire there were two lines of large postholes, which Garton (1991, 13) considers not to have been fences as there was no intermediate posts, and they may have held free standing timbers for visual effect.

Alternatively the uneven spacing between the posts may be of significance. Postholes 1704 and 1779 were 3.7m apart (between the centres of the posts) and would form a fairly neat parallelogram with the two slots (1724 and 1727). It is possible that these features formed a small lean-to shelter measuring about 6m across by 6m along the northern side and 3.7m on the southern side. However, it is difficult to reconstruct a viable structure from the available evidence and nature of the slots remains uncertain. The possible stakeholes in this area formed no clear pattern and can only indicate general activity.

Many of the other potential features in this area seem to have been either natural hollows or the result of bioturbation. Features 1662, 1664 and 1716 lay on the same alignment as the southern wall of the building, but this positioning was probably by chance as these were very irregular shallow features. There was a pot sherd in the top of the fill of 1716 but this might have lodged in the slight hollow caused by this largely natural feature. Other more convincing features could be related to the activity resulting in the deposition of Grooved Ware in one pit. The linear hollow 1738 was presumably related to Early Neolithic activity as it held a large rim sherd of Early Neolithic pot, but the function of the stone-filled feature was not clear. Early Neolithic activity probably extended over all the area to the south of the building as considerable numbers of pot sherds were preserved in the hollow 1669, and presumably other evidence had been eroded away.

Beyond the activity immediately surrounding the building there was no significant prehistoric activity for a radius of over 80m and no other major Early Neolithic features on the rest of the site. However, traces of a wider Early Neolithic landscape did exist in the form of a low level of archaeologically visible activity across the rest of the site. These occasional sherds of pottery and widely scattered pits are discussed below.

### ***Phase III: Abandonment or demolition***

Evidence had survived in several postholes to indicate what happened to the structure of the building once it ceased to be used. The four central postholes all had well defined, undisturbed postpipes indicating that the base of the posts at least were left to rot *in situ*. In contrast there was evidence that all the gable end posts had been removed. Postholes 1483 and 1495 exhibited considerable disturbance of their fills suggesting that these had been disturbed in a way that the four central postholes had not, most probably due to the removal of the posts.

Postholes 1689 and 1691 were also disturbed but the evidence was much better preserved in these cases and indicated a complex sequence of activities. The posts were carefully levered out of these postholes and the resulting hollow filled with material including fire-cracked stones and artefacts. The material introduced into 1691 could have originated from the occupation deposit within the building, the charcoal, burnt stones and burnt flint possibly being related to cooking activities.

Many of the postholes on the south wall had clear postpipes, including slot 1573, which had a postpipe in the middle. This shows that the posts on this wall were left to decay *in situ*. Slot 1636 was the exception and had evidence for the removal of its post. It had carefully placed, substantial stone packing, which only survived at the western end of the cut. The stones were probably lost from the eastern end due to the post being levered out. The resulting hollow was deliberately infilled with material containing quantities of fire-cracked stones, in a sequence very reminiscent of the west gable end postholes. The features on the northern wall were generally too truncated to be sure whether or not the posts had been left in.

It seems, therefore, that while many of the posts were left to rot undisturbed the largest and most prominent posts at the gable ends were removed along with one post from the proposed entranceway. These could have been removed for re-use, as they would have been the tallest timbers in the building, but a more symbolic demolition might have been intended.

### ***Did the building burn down?***

A large proportion of Early Neolithic rectangular buildings in Ireland ended in conflagration (Moore 2004, 147), as did most of the large Scottish structures (Ralston 1982, 239; Murray 2005b; Barclay *et al* 2002; Barclay and Maxwell 1998). House 2 at Clegyr Boia, Pembrokeshire was probably destroyed by fire (Williams 1952), but few other buildings in England and Wales are discussed in these terms. However, the Llandygai I building also seems to have burnt down; large chunks of charred oak from the posts were recovered and the charcoal was intensely incinerated (Lynch 2001, 31). Moore (2004, 146-147) associates the burning with acts of aggression, but the transformative power of fire may be used for practical reasons against disease and infestation or for more ritual or ceremonial purposes (Tringham 2005).

The prevalence of burning means that this is a factor that should be considered for Parc Bryn Cegin. Direct evidence of burning on the ground beneath the building is limited, although there were the two burnt patches at the western end of the building (1314 and 1468). These have been discussed above, but

it is possible that they were the only surviving patches of heat altered earth produced by a conflagration, the rest having been lost to erosion. There was a lump of burnt clayey soil in the base of one of the postpipes in posthole 1532. This possibly originated from heat altered soil around the top of the posthole and fell in as the post decayed, but on its own it is not enough to prove that the structure burnt down.

The charcoal from the postholes provides the best evidence. In all cases where there is evidence these rectangular buildings were built solely of oak, so it is assumed that oak charcoal represents structural timbers. Identifiable oak charcoal was quite rare in the Parc Bryn Cegin structure. The only feature with large quantities of it was the post trench 1404 at the eastern end, although significant quantities also came from postholes on the south wall, especially in the postpipes of 1277 and 1613. There was none identifiable from the aisle postholes. If the building had been burnt down, oak charcoal would be expected in quantity in all the internal features in the form of large, easily identifiable chunks, as it was in Llandygai I. Evidence has been discussed above suggesting that the gable end posts were deliberately removed, although the rest of the aisle posts rotted *in situ*. If this had been done after the building was burnt then oak charcoal would definitely have been introduced to the posthole fills, although it seems unlikely that the building would have been burnt either deliberately or accidentally if its roof had already been dismantled. The evidence therefore makes it unlikely that the building was burnt. The larger deposits of oak charcoal found in the south wall postholes and particularly a deposit within post trench 1404 probably originated from the charring of post bases to prevent decay. A charcoal-rich deposit seemed to line posthole 1572. This would be hard to explain as the result of the building burning down but can be interpreted as the charred outer surface of a post that had rotted away *in situ*.

Although it is an argument from negative evidence the absence of burnt daub also suggest that the building was not burnt. It is suggested that the most likely material for the walls would have been wattle and daub. In a conflagration the daub would have been fired and would almost certainly have survived in quantity in the top of postholes or other features.

There was burnt stone in the later fills of three features; 1636 on the south wall and western gable end postholes 1689 and 1691. These features did not have recognisable oak charcoal so it is likely that the burnt stone was not associated with the destruction of the building by fire, but had another origin probably in relation to cooking. Particularly in 1691 these stones seem to have been deliberately deposited. In this posthole the pottery showed no signs of reburning, but a broken flint scraper was heavily burnt and may have originated from the same source as the stones. However, it should also be noted that burnt flint was included in the original post packing deposits of some postholes e.g. 1406, so finds could have been burnt through other activities.

### **Discussion of the date**

Armit *et al* (2003, 148) state that Irish rectangular buildings are restricted to the first half of the fourth millennium BC and it seems that this date applies across the British Isles. As Hayden (2006, 57, 58) has noted most seem to be restricted to a period 3900-3600 cal BC at the beginning of the Neolithic, while sites with later dates tend to be atypical in either structure or function. If the dates are used at 68% probability activity at Llandygai II started around 3760-3700 cal BC and ended about 3670-3620 cal BC, towards the end of the national range (at 95% probability the period of use is 3800-3670 cal BC to 3690-3610 cal BC).

Mature oak charcoal has been used to date many Early Neolithic rectangular buildings because it can often be demonstrated to be part of the structure itself. This material was not used at Parc Bryn Cegin because although the relationship between the sample and the activity to be dated is very close the age of the oak when felled is unknown. This age-at-death error can potentially be hundreds of years, even assuming that the timber was not re-used from a previous structure. This element of uncertainty negates the value gained from the close association. The Llandygai I building was dated by four radiocarbon dates (Lynch and Musson 2001, 117). Three of these dates were on bulk charcoal samples all containing substantial quantities of mature oak and gave date ranges of 4350-3700 cal BC (NPL-223), 3950-3780 cal BC (GrN-26824) and 3960-3760 cal BC (GrN-26823) at 2 standard deviations. One sample is specifically described as containing 'large pieces which were part of the core of the oak post' (Lynch and Musson 2001, 117). The fourth date was an AMS date on a single charred hazelnut shell from a posthole. This date (3770-3620 cal BC (GrA-20012)) is much more reliable and suggests an old wood effect of at least 200 years. A similar old wood effect can be seen in several of the dated 'timber halls' from Scotland (Sheridan 2007). This has biased the dates from some sites and several may be significantly later than usually quoted in the literature. A detailed reassessment of the dates from these structures could produce interesting results. The current evidence suggests a short period over which these buildings were constructed. The discarding of poor dates and Bayesian analysis of good suites of



dates has a very good chance of tightening this range even further. When the influence of old wood effect is removed it is probable that more of the dates will group towards the later end of the presently proposed range.

The absence of evidence for the replacement of structural elements or the rebuilding of Llandygai II suggests that the building had a single phase of use. Cooney (2000, 63) points out that earthfast timber structures of this sort would be unlikely to survive for more than a generation without maintenance. Wainwright and Longworth (1971, 224-225) consulted the Forest Products Research Laboratory to obtain an estimate for the lifespan of earthfast oak timbers based on experimentation. Their rule of thumb of 15 years for each inch (2.54cm) radius of oak heartwood gives an estimate of 75 years for the main structural posts at Llandygai II. Bayesian analysis of the dates from Llandygai II allows an estimation of the span of its use to be produced (see appendix XVI, Fig. 5). The span of use is estimated at 10-140 years (95% probability) and probably 40-110 years (68% probability). This strongly supports the assumption that the building was used until the main timbers failed and then abandoned. This period might be seen as possibly three generations, although a much shorter period is possible. This is long enough for the impressive and substantial structure to be perceived as permanent but not ancient. The people who built it could have related the story to their grandchildren who saw its demise, or possibly a long-lived individual could have witnessed both. The longevity of the building was of a very different order to that of the chambered tombs; a distinction that those who used it might have made.

### **Discussion of artefacts and ecofacts**

It has already been argued that the finds support an Early Neolithic date for the building and much of the activity around it. There was a concentration of artefacts and ecofacts inside the building, where the main internal postholes produced the largest number of most find types. It is argued that this suggests most finds were deposited accidentally during the use of the building. Finds in the west gable end postholes appear to have been deliberately deposited after the partial demolition of the building but may still originate from the building's use.

The style of pottery and its fragmentary abraded state is very similar to that from Llandygai I (Lynch 2001, 34 and appendix II). The condition of the sherds is consistent with them being accidentally deposited as domestic rubbish. The only exception to this is the large sherd of the unshouldered bowl (SF 167), which might be considered to have been deliberately deposited, although the feature it was within had no easily comprehended function. It certainly did not seem to be a pit dug deliberately to hold such a deposition as will be discussed below in relation to the later Neolithic pottery assemblage. The analysis of residues on sherds in this assemblage was not extensive (Appendix III) but the single positive result suggests that some vessels were used for containing foods.

The flint assemblage at Llandygai II can be described as a small assemblage of domestic character but with a high proportion of tools to waste flakes. Lithic assemblages in other comparable buildings are varied; a few are very large, particularly Ballygalley, County Antrim (Simpson 1995, 1996b) with 2000 flint artefacts, and some are very small. At Claish, Stirlingshire despite recovering 200 sherds of pottery, the only lithic was a single flake of Arran pitchstone (Barclay *et al* 2002a). On some sites there was a high proportion of debitage and few retouched pieces, e.g. Coolfore, County Louth (Ó Drisceoil 2003) and Tankardstown, County Limerick (Gowen and Tarbett 1988a and b). In contrast others have a high proportion of tools and Drummenny Lower, Co. Donegal, has no debitage (Dunne 2003). At White Horse Stone, Kent, the lack of larger pieces of debitage suggested that it had been collected and disposed of off site (Hayden 2006). Llandygai II fits with the latter sites as it has a high proportion of tools to debitage despite an intensive wet sieving regime to recover small pieces. Few flints came from the postholes at Llandygai I, but several of these were retouched (Lynch 2001), suggesting a similar pattern of flint use. The presence of quartz and Graig Lwyd flakes might be interpreted as of special significance, although the flint tools assemblage suggested a range of domestic activities. The usewear analysis (appendix X) revealed sickle gloss on two pieces and usewear on one convex and one concave scraper, showing that the tools were used and they performed a variety of functions.

The scatter of crystal quartz debitage, cores and two possible tools shows that this material was being repeatedly worked at Llandygai II. The only other record of its use in north-west Wales comes from the Lledr Valley in Central Snowdonia where it was found in a mixed but predominantly Later Mesolithic assemblage, which includes one possible narrow-blade microlith in crystal quartz (Smith 1999d).

Crystal quartz or rock crystal has been found in association with other Early Neolithic rectangular buildings. At Lismore Fields there were 'several struck flakes of crystal' found in pits near the building (Garton 1991, 13), and 64 pieces of quartz or rock crystal were found at Corbally (Purcell 2002). A single flake of rock crystal was recorded from posthole 5 in Llandygai I (Lynch pers com), but the lack of more material is probably related to the lack of a wet sieving programme as most of the material at

Parc Bryn Cegin was recovered from sieving. Other sites mention the knapping of quartz but unless specified otherwise this is assumed to be white quartz, not clear (e.g. at Drummenny (Dunne 2003), Tankardstown house 2 (Gowen and Tarbett 1988a and b), Gortaroe (Gillespie 2002), Ballyglass (Ó Nualláin 1972), Lough Gur A (Ó Riordáin 1954) and Ballygalley (Simpson 1995). A full survey of other Neolithic sites would be necessary to determine whether the presence of clear crystal quartz material in rectangular timber buildings is significant or part of the common technological repertoire.

The two retouched pieces from Llandygai II closely resemble microliths in their abrupt retouch and small size, which is necessitated by the very small size of the raw material (Fig. 15). Unlike white, opaque quartz clear crystals are relatively rare and because of their size would have been difficult to work. The resulting tools would have had to be hafted to be used and could have formed composite tools like Mesolithic microliths. In a world without glass clear crystal quartz must have seemed a remarkable material and it is probable that these tiny implements had a symbolic significance.

### *Graig Lwyd*

The most significant difference between the finds from the two Llandygai buildings is that Graig Lwyd flakes were found at Llandygai II, but not at Llandygai I (Lynch 2001, 34-35). Houlder (1968) attributed the Llandygai I building to the 'middle men of the axe-trade' (ibid, 219), due to Graig Lwyd axe fragments in a pit 5m from the building. However, this pit (FB151) was subsequently dated to the Late Neolithic and also contained a transverse arrowhead consistent with this date. The Graig Lwyd stone found in and around the Parc Bryn Cegin building is therefore of considerable significance as this site is one of the very few to have produced worked Graig Lwyd stone from Early Neolithic contexts. Graig Lwyd flakes were present on the terrace under the chambered tomb of Bryn yr Hen Bobl (Lynch 1991, 108), but as these were associated with Peterborough Ware pottery (ibid, 106) they were presumably of a Middle Neolithic date.

In Llandygai II many of the flakes were securely stratified within the main postholes of the building, some from the lower parts of the postpipes. Three of the dated contexts from the building contained Graig Lwyd flakes, but the evidence suggests all the flakes were deposited during the use of the building, and are therefore contemporary with it. As discussed above it is justifiable to use the 68% confidence limits for the combined dates and the use of the building can be said to have started between 3760–3710 cal BC and ended between 3660–3620 cal BC. This can be taken as the date for the earliest use of Graig Lwyd stone on this site.

The earliest date from the Graig Lwyd axe factory site was 4350-3990 cal BC (SWAN-142), associated with a flaking floor under cairn 67 (Williams and Davidson 1998). The current site provides the earliest date for the use of this stone away from the source, and the polished flakes show that the stone was being used to make axes at this date.

However, the types of flakes demonstrate that this material does not represent axe production or axe sharpening, but the breaking down of axes into flakes and debitage (Williams, appendix VIII). This process is more clearly demonstrated in the later pit groups and will be discussed in more detail below but does seem to apply to the activity in the building. It may be that flake tools were being produced, especially at this earlier period, but none of the Graig Lwyd flakes from the Early Neolithic building were retouched or had obvious traces of use. Tools, including two scrapers, were made on flakes of Graig Lwyd stone found under the tomb of Bryn yr Hen Bobl (Lynch 1991, 107) and these could indicate the type of implement the flaking was aiming for, or just unretouched sharp edges may have been required. It is possible that the reduction had no direct practical purpose but was a highly ritualised way of destroying stone axes, as is argued for the Graig Lwyd flakes in the later pits (see below).

Stone axes are associated with several Irish Early Neolithic buildings, and axe flakes have also been reported from some sites e.g. Ballyglass (Ó Nualláin 1972), Ballynagilly (ApSimon 1976), Ballygalley (Simpson 1995), Ballyharry 1 and 2 (Moore 2003), Tankardstown (Gowen and Tarbett 1988b) and Cloghers (Kiely 2003). At Ballygalley axe manufacture and finishing was suggested but at Cloghers some flakes are described as being from the re-use of axes. At Ballyharry 1 the reworking of stone axes is specifically suggested (Moore 2003), and Ó Riordáin (1954, 310) states that the use of flakes from stone axes as scrapers was common on sites on the Knockadoon peninsula. All these sites are Irish, but there are examples from British sites, such as Padholme Road, Peterborough (Pryor 1991), Garth Dee, Aberdeen (Murray 2005a), and Lismore Fields, Derbyshire (Garton 1991, 13).

The axe found at Llandygai II was not only broken but also burnt to a high temperature. It must have been broken before being burnt, as the broken surface is also heat altered, and the burning caused a crack in the axe, which would certainly have failed with the force of the blow that broke the axe. Cooper and Hunt (2005) describe a flint axe from Rothley, Leicestershire, which had been 'completely calcined by intense heat to the point of exploding'. This axe had been deposited in a pit with Grooved

Ware pottery and other significant items. The breaking and burning of the Parc Bryn Cegin axe may also indicate a more ritually charged treatment of the axe and associated deposit than the simple discarding of rubbish.

### *Charred plant remains*

It has been argued that cereals were much less economically important in the Neolithic than traditionally thought (Thomas 1996), because of the relatively sparse nature of the evidence for cereal grains on many Neolithic sites. The predominance of charred hazelnut shells and small number of charred cereal grains from the Early Neolithic building on the present site might be seen to support this argument. However, the comparison of cereal grains and hazelnut shells as an index of their relative importance in the diet is highly problematic. The shells are waste products from preparing food and are most likely to be disposed of by burning on a fire. Cereal grains are the food product itself and will not be charred except by accident. A very small number of charred cereal grains may therefore result from frequent use of this food and large numbers of charred hazelnut shell fragments may result from the shelling of a relatively small number of nuts. The presence of even a small number of cereal grains should be taken as an indication that cereals were grown in the vicinity and consumed or stored on site. Across Britain and Ireland cereal grains are consistently present in Early Neolithic rectangular buildings, and occasionally as at Balbridie (Fairweather and Ralston 1993) and Lismore Fields (Garton 1991) they can be very numerous. Cross (2003, 199) claims that wheat has been found on every such site where botanical studies have been carried out, and saddle querns are also found on some sites, e.g. Corbally houses 1-3 (Purcell 2002), Ballyharry 1 (Moore 2003) and Eilean Domhnuill (Armit 2003, 94, 98).

Emmer wheat, barley and naked wheat were all present in the Parc Bryn Cegin building, with emmer being found in the greatest quantities. The remains represent parching and dehusking hulled cereals, and this process seems to have been carried out in or near to the eastern end of the building as most of the material was found in features at this end. The evidence would seem to suggest that cereal cultivation was an important part of Neolithic culture, although what part it played in the diet and its economic importance are harder to establish. If it was of social or even ritual importance rather than being an important staple part of the diet the area cultivated may have been relatively small and patches of cereals could be planted and harvested as part of a yearly migration. Where large quantities of grain have been found these could have been collected from a very wide area by many groups coming together. The presence of the largest collections in the most impressive structures could support this.

The presence of hazelnuts in Early Neolithic rectangular buildings is also very common and in some cases they considerably out-number cereal grains, e.g. Claish (Barclay *et al* 2002) and Corbally houses 1-3 (Purcell 2002), although Hayden (2006) claims that generally cereals are more frequent than hazelnut shells. However, the contrast of cereal grains and hazelnuts as domesticated and wild foods seems to be to be deceptive. Hazel is an understory shrub, which produces most prolifically in open secondary woodland or on woodland margins. The pollen core taken at Llyn Cororion showed that hazel initially declined with the arrival of the climax forest but it subsequently recovered and remained a significant presence throughout the prehistoric period (Watkins 1990). It is likely that its recovery was due to human activity increasing favourable habitats. Where hazelnuts were an important part of the diet it is extremely probable that the woodland would be heavily managed to favour their production, the nuts may even have come from hazel hedges. It seems probable that there would be specific managed sites for hazelnut production, possibly close to where the cereals were grown. There is no reason to see them as part of a very mobile foraging subsistence strategy.

The wood charcoal on the site provides some useful evidence. The quantity of identifiable oak charcoal has already been used to argue against a fiery end for the building. The hazel charcoal common in some features is best interpreted as fuel for fires, and in the absence of a definite hearth site suggests the presence of a fire in the structure presumably for light, heat and cooking. Hazel could have been used in the roof and wattle walls but this would only be preserved if the building had burnt down, which would have resulted in greater quantities more widely distributed. The pine charcoal recovered from posthole 1676 is problematic. Pine was rare in the Neolithic period and its presence may indicate Mesolithic activity but it is more likely to be intrusive from very much later activity. On Houlder's site at Llandygai pine was unusually common from early contexts (Lynch 2001, 32) and this may represent a real presence of pine in the Late Mesolithic and Early Neolithic.

There is general agreement that Wales, like much of the rest of Britain, in the Early Neolithic was covered in dense forest with occasional, localised, short-term clearances (Caseldine 1990; Richmond 1999). Elm declined sharply in the forests across Britain early in the Neolithic. Although its relationship to farming has been questioned human activity was probably connected in some way with the decline and it is often associated with a rise in agricultural activity (Kenney 1993). The elm decline

has been dated at Llyn Cororion to 4985±65 BP (3950-3650 cal BC) (Watkins 1990, 135) and at Nant Ffrancon to 5160±70 BP (4230-3780 cal BC) (Hibbert and Switsur 1976). At Llyn Cororion the elm decline was not associated with significant clearance indicators, but at Nant Ffrancon values of non-arboreal pollen did increase after the elm decline, suggesting more clearance activity. Although these dates are very general the evidence suggests the elm decline was contemporary with the occupation of the buildings at Llandygai I and II.

What clearances there were seem to have been for livestock grazing and pollen evidence for cereal cultivation in the Neolithic period is slight. The first cereal pollens grains did not appear in the core at Llyn Cororion until about 1400 BC at the earliest (Watkins 1990). However, cereal pollen is likely to be under represented in the pollen record, especially in a wooded environment, so establishing the extent of cereal cultivation is difficult. Plant macrofossil evidence for cereal cultivation in Wales is sparse but most recent Neolithic excavations have produced some charred cereal grains or crop weeds seeds (Caseldine 1990, 44-45). Although the assemblage was small the charred plant remains from Parc Bryn Cegin demonstrated that some cereals were being cultivated in the area from the Early Neolithic onwards.

## THE EARLY NEOLITHIC BUILDING: ITS FUNCTION AND CONTEXT

### Introduction

Early Neolithic buildings have been at the heart of work on the period for the past fifteen years. The absence of domestic structures in southern England inspired a reassessment of the nature of the Neolithic. This was initiated largely by Thomas (1991), who envisaged Early Neolithic groups as highly mobile, without substantial dwellings and living a life little changed from that of the Mesolithic. This view has been countered especially from Ireland (e.g. Cooney (1997, 2000)) but also by British archaeologists who believe they have good examples of long term Early Neolithic settlement (e.g. Mercer (2003)). The discussion has enlivened the subject and raised the standard of scrutiny required of structures that previously were automatically assumed to be domestic.

Research has been limited by the difficulty in finding Early Neolithic buildings. Excavating flint scatters tends to reveal scattered pits and postholes rather than structures (Barclay 2003, 72; Edmonds 1999, 18). In Scotland very large Neolithic structures have been found through aerial photography, e.g. Balbridie and Crathes, Aberdeenshire, and Littleour, Perthshire, but smaller structures are only found through area excavation. Current planning regulations in Britain and Ireland and the resulting increase in area excavation has favoured the discovery of these features. Over 90 Neolithic 'rectangular structures interpreted as houses' (Cooney 2000) have now been discovered in Ireland (Armit *et al* 2003), some 36 of which are Early Neolithic rectangular structures (Moore 2004), and this number is rapidly increasing. Almost all of these have been found during road schemes or other construction projects involving the stripping of large areas with close archaeological monitoring. Gowen and Halpin (1992, 25) specifically state that the building at Newtown, Co. Meath, would not have been found without "the constant on-site presence of an archaeologist...during the topsoil stripping phase". The practice of assessing an area by trial trenches rather than stripping may be responsible for the lower number of structures in Britain, although very large area excavations are now redressing the balance in England. Rectangular Early Neolithic buildings have recently been found at Yarnton, Oxfordshire and White Horse Stone, Kent and others are in the grey literature awaiting publication, to add to the 16 sites with early or middle Neolithic structures or possible structures listed by Darvill (1996).

In southern England many very large areas have been stripped under the best archaeological regimes and these features are not commonly found, but Gibson (2003) lists many good reasons why absence of evidence does not necessarily mean evidence of absence. Both Yarnton and White Horse Stone were preserved under colluvial or alluvial deposits (Hayden 2006, 51), without which they probably would not have survived in a recognisable form. These sites are vulnerable to ploughing and, where they are dug into chalk, to the loss of the bedrock itself (Gibson 2003, 137, Hayden 2006, 52). Such erosion might not remove all traces of a site but could easily reduce it to the unintelligible scatter of pits and postholes so often found associated with flint scatters.

Barclay (2003) could list 28 possible Neolithic settlement sites from the Scottish lowlands, not all with convincing structures, and recent development archaeology has already increased that number. In Wales Darvill (1996) could only list three sites with structures, Clegyr Boia, Dyfed, Gwernvale, Powys and the original Llandygai building. Lynch (2000, 53) adds a rectangular structure on Moel y Gaer, Flintshire. This small number may be related to the relative scarcity of development archaeology in Wales and the lack of large-scale excavations in particular.



(See tables 8 and 9 for a summary of Early Neolithic rectangular timber buildings and related sites with references)

### **The function of Early Neolithic rectangular buildings**

The arguments put forward by many authors including Thomas (1996), Whittle (1997), Pryor (2004) and Cross (2003) preclude the automatic assumption that these structures had a primarily domestic function. The interpretation of these sites as dwellings has often relied consciously or otherwise on comparisons with early medieval buildings, which they closely resemble, and with modern expectations of houses. As a result of this discussion the archaeological remains must now be closely inspected for evidence of function. A disadvantage has been a polarisation of ideas between domestic and ritual functions, when these divisions were most probably not made in prehistory.

The design of the structures does, to modern eyes, suggest a dwelling. The majority of these structures are interpreted as having been roofed (unroofed examples, such as Balfarg (Barclay and Russell-White 1993) and Littleour (Barclay and Maxwell 1998), are considered as different but related monument types), and they were substantial and weatherproof. Many have partitions dividing the buildings and providing the separated spaces required of a modern house, e.g. the partitions in Ballyharry 1 were seen as private sleeping areas (Moore 2003). The presence of hearths is also seen as domestic and many of these buildings did have hearths or cooking pits, either internal or external.

The difficulty is whether such interpretations can be taken for granted when considering a culture so far removed in time. Alternative interpretations need to be considered and evidence sought. For example a hearth could be used for cooking in a variety of non-domestic circumstances and even for burning offerings.

The size and construction of these buildings has been used to suggest a non-domestic function. Known Mesolithic structures were slight, temporary and sub-circular, although more substantial, long-lived examples are now being found, e.g. Howick (Waddington et al 2003). Later Neolithic buildings seem to have been largely sub-circular and often also fairly slight (Darvill 1996); the exceptions being themselves interpreted as monumental structures (e.g. Littleour (Barclay and Maxwell 1998). Although the majority of Neolithic settlement sites produce a scatter of pits and postholes, few can be reconstructed as functioning structures (e.g. Bolam Lake, Northumberland (Waddington and Davies 2002)). Where these sites are particularly well preserved there is evidence for slight sub-circular structures in the Early Neolithic (e.g. at Kilhern, Dumfries and Galloway (Buckoke 1999), Cowie, Stirling (Atkinson 2002) and Garthdee Road, Aberdeen (Murray 2005a)). Of these Cowie and Garthdee Road represent long term or repeated occupation. The rectangular timber buildings are therefore seen as being outside the general tradition in the British Isles, where circular structures were generally preferred both before and after the Early Neolithic and were apparently still widely used throughout that period.

In continental Europe during the Early Neolithic the rectangular or trapezoidal longhouses of the Linearbandkeramik culture were constructed across a wide area from northern Hungary to northern France (Whittle 1998, 155). Although many of these longhouses were very large there were also smaller structures, similar in size to the Llandygai buildings (Whittle 1988, 47). Both large and small structures used foundation trenches and post construction, but there was a consistent tradition of three rows of internal posts, in contrast with the examples in the British Isles which have either one or two internal rows. After the Linearbandkeramik, in north-western Europe as well as in the British Isles, recognisable building plans become rarer and in many cases the structures are smaller (Whittle 1988, 48), although the buildings in the Michelsberg village of Les Hautes Chanvières, Ardennes are up to 60m long (Marolle 1989). Sheridan (2003 and 2007) identifies Picardie and Nord-Pas de Calais in the north-east of France as the most likely origin of British pottery styles, and believes that future work will reveal rectangular buildings in this area. Hayden (2006) notes that the closest parallels for the British structures come from the Michelsberg and preceding Rossen and Cerny cultures in northern France and Belgium, but recognises that the parallels are not exact. Barclay *et al* (2002, 128) see the British structures as drawing on a 'commonality of intent and practice' rather than being exact replicas of Continental buildings. Rectangular timber buildings in the British Isles, therefore seem to be part of an outside tradition brought in and used alongside more traditional structures. That the more numerous slight structures represent dwellings can be suggested from their number and from the continuation of previous styles of dwelling. Features of the rectangular structures, as well as their novelty, make them more suited for other purposes.

As discussed above although many of the British and Irish rectangular structures were very large, there are many small examples, but all were substantially built. The extensive use of oak, especially planking for the walls is seen as entirely outside the normal building tradition and designed for the impression, if not reality, of permanence (Cross 2003, 199). The larger buildings would certainly have

been suitable for gatherings of considerable numbers of people. Cross (2001, 2003) suggests that competitive feasting was a major incentive for the introduction of agriculture and the Neolithic culture to the British Isles, and that rectangular buildings should be seen in this context. The similarity of the largest structures to Anglian halls may indicate a similarity of function. This interpretation could only apply to the larger buildings, although the Llandygai buildings would have been large enough to be seen in this context.

Subdivisions seem to be an important part of the design of these structures. Many of the Irish examples have two or three compartments (Armit *et al* 2003, 146), and the large Scottish examples have many more. Balbridie and Claish had four and Crathes (Murray 2004, 2005b) had four main compartments and possibly more. The structure recently discovered at Lockerbie Academy, Dumfries and Galloway, had at least six well-defined partitions that were more substantial in places than the wall line (Bruce Glendinning pers. com.). The regularity of these partitions and their prominence in the larger buildings implies these are not just the practical division of domestic space. The dichotomy of ritual and domestic is of course an artificial one and domestic structures can be heavily influenced by ritual symbolism as demonstrated by Richards (1996). Topping (1996) uses Balbridie as an example where movement through the building would be severely controlled by the partitions and suggests this created spaces with ritual significance that might be relevant whether the building was primarily a dwelling or not. However, these design constraints do not seem to have applied to non-rectangular structures, perhaps indicating that rectangular buildings were perceived differently to every day habitations.

The argument for a non-domestic function of these structures was based largely on their rarity in Britain (Thomas 1991). While new discoveries are rapidly changing the perception of their rarity the question remains valid. Although Ballyharry 1 represents an exception, most of the structures appear to be single phase with few or no alterations. The duration of the Llandygai II building has been discussed above and both estimates for the durability of the timbers and the radiocarbon dates are consistent with a duration of the building of 100 years or less. If this was typical it suggests that these buildings had a medium duration, making them appear very permanent compared to slight, temporary structures but transient in comparison to the chambered tombs.

If most of these buildings were used for about 100 years but the tradition of their use continued throughout the Early Neolithic presumably each building would have been replaced several times. The limitations of developer funded excavations often mean that the area around a building cannot be investigated and in many cases it is impossible to know if the structure discovered was isolated or part of a larger group (Armit *et al* 2003, 147). Some large excavations, such as at Yarnton have been able to prove that the building was genuinely isolated (Hey forthcoming). At Parc Bryn Cegin it can be categorically stated that there were no contemporary structures within 100m of the building and almost certainly not within a 150m radius. In several cases there are pairs of buildings, such as at Tankardstown, Cloghers and Lismore Fields, but in the latter case one structure seems to have been much later than the other. Close groupings of buildings are known with seven at Corbally (Purcell 2002, Tobin 2003), possibly five at Thornhill (Logue 2003) and on the hilltop sites such as Carn Brea (Mercer 1986). More commonly buildings appear to be isolated, although in several cases another building lies within 200m to 1km, as at Llandygai where the buildings are 500m apart. Where buildings are demonstrated to be isolated they were not replaced close to the original sites, so it is possible that these more widely spaced structures were sequential rather than contemporary. The number of buildings in use at any one time might, therefore, have been very low; too low to accommodate more than a small proportion of the population.

The radiocarbon dates from many of the buildings are insufficiently precise to clarify this question, but the use of Bayesian analysis at Llandygai II has provided a precision that might be used to investigate the issue. Unfortunately the one reliable date from Llandygai I is insufficient to indicate whether these buildings were contemporary or sequential. A new suite of dates from Llandygai I could provide an answer to this question at least in this one case. Initial inquiries (Lynch pers. comm.) suggest that there may be enough charred plant material preserved in the National Museum to achieve this aim.

It might be expected that the function of these structures is reflected by the artefacts and ecofacts found within them, but the evidence is equivocal. The quantity of finds varies significantly between these buildings. The large amounts of finds at Ballyharry 1 (Moore 2003) and Carn Brea (Mercer 2001, 43) have been used to support the domestic interpretation, but at Ballygalley its particularly large number and range of finds has been claimed as evidence for manufacturing and redistribution (Simpson 1995, 43). Many Neolithic rectangular buildings have very few finds, which has supported short-term or non-domestic use. The small assemblage at Llandygai II can be attributed to erosion of occupation deposits, but at sites such as White Horse Stone, protected under colluvium and not subjected to

ploughing, the small assemblage must be more indicative of the original deposition pattern. Dunne (2003) uses the scarcity of finds from Drummenny to argue that it was used perhaps for no more than a single season before being destroyed by fire. The presence in some buildings of fine pottery, rock crystal and stone axes has been used to argue for a special use (Cross 2003, 199).

A funerary function has been suggested for some of these structures. Some have been found under cairns and barrows. That under the Knowth chambered tomb had been abandoned for long enough before the tomb was built for a soil horizon to develop over the remains (Eogan and Roche 1997). Ballyglass in contrast was interpreted as having been dismantled in order for the tomb to be built (Simpson 1995). The small square structure at Gwernvale seems to have influenced the alignment of six posts within the tomb forecourt, which were still standing when the cairn was built (Britnell and Savory 1984). Pryor (1991, 1982) argues that the proximity of a contemporary grave to the Padholme Road structure and the consistency of its alignment with a supposed Neolithic mortuary enclosure implies a funerary purpose for this building. Even if a direct relationship between the buildings and overlying tombs can be proved this does not demonstrate that the buildings were funerary in nature. The exceptions might be rare cases, such as the Late Neolithic rectangular structure at Raigmore (Simpson 1996a), where its position precisely under the centre of the cairn does make a common function probable.

Human bone is very rare from any of these structures, although in most cases soil conditions mean that only burnt bone survives. Yarnton provides the exception as cremated and unburnt human bone was found in a posthole on southern wall (Hey forthcoming). There were also human remains from one of the bedding trenches in the structure at Gwernvale (Britnell and Savory 1984). This structure was similar to the one at Padholme Road and supports the suggestion that these small square structures might have had a funerary function. However, the variety of finds and charred plant remains from many buildings argues against a simple funerary interpretation for most. Although there are many common features in the construction techniques and proportions of rectangular buildings in the British Isles it is reasonable to suggest that these traditions were drawn on for buildings of a variety of functions.

The Early Neolithic Scottish buildings seem to represent a tradition apart from the rest of the British Isles. Their size is significantly larger than the largest buildings elsewhere with the exception of Yarnton, which is poorly defined and could be interpreted as much smaller (Hey forthcoming). Recent discoveries, such as Lockerbie Academy, Dumfries and Galloway and Station Brae, Dreghorn, North Ayrshire, have reinforced this size difference. Their characteristic structural features are common to buildings elsewhere in the British Isles but they seem to be exaggerated in Scotland. The same traditions seem to continue into the later Neolithic, where they are expressed in more obviously ceremonial monuments. There are structural similarities between Early Neolithic buildings such as Claish and unroofed Mid and later Neolithic structures, such as Balfarg and Littleour and even post defined enclosures like that at Douglasmuir (Kendrick 1995). The latter has similarities with the pit defined cursus tradition (Brophy 1998). Although not a simple chronological progression this may hint at the Early Neolithic rectangular buildings being at the start of a tradition leading into very large ceremonial monuments. If the legacy of Early Neolithic rectangular buildings was more important in ceremonial monuments than domestic ones it raises the question of the function of the earlier buildings themselves, although alone this cannot prove that they were also mainly of ritual function.

Other factors have been used to argue for a ceremonial rather than domestic use. Thomas (1996, 7) notes the exposed position of many of these structures, although research for this report suggested the contrary. Excluding the complex hilltop settlements such as Carn Brea (Mercer 1986) and Clegyr Boia (Vyner 2001), which seem to be a different site type to the isolated timber building, the majority of topographic descriptions involve river terraces and undulating lowlands and the proximity of water. However, general descriptions may conceal important local variations. Llandygai II was located in undulating lowlands not far from water, but its position towards the top of the ridge put it further from the river and in a more exposed location than that chosen for the later roundhouse settlement. Perhaps these factors were less important in the choice of location.

While there seem to have been common traditions in Early Neolithic rectangular buildings across the British Isles these could have been applied to buildings with a variety of different functions. Whether these were primarily domestic or ritual there is an impressive and almost monumental character to even many of the smallest of these structures. There is, of course, no reason why ritual or ceremonial activity should not be carried out at a largely domestic site or that some people might not live full time at a largely ceremonial site. Murphy and Simpson (2003, 109) see a 'ritual component' in the activity at Northton, Harris, but do not consider this to detract from the interpretation of the site as domestic. The slab-lined façade references tomb architecture at Eilean Domhnuill, North Uist but the pottery, quern stones and other evidence suggest that this was 'a place where people lived' (Armit 2003, 95, 99).

Further work is necessary to test the frequency and isolation of these buildings. However, if current trends are supported it might be reasonable to assume that while people may have lived some or all of the time in these buildings that their functions extended beyond the domestic into the wider social or ceremonial sphere.

## MID AND LATER NEOLITHIC PIT GROUPS

### Introduction

Several groups of small pits were found, mainly scattered on the ridge running along the eastern side of the site, but one group was located on lower ground further west (Fig. 2, 5 and 6). The layout out of these groups varied, Group I contained seven pits, six forming a rough L-shape. Groups II, III and IV were formed of three pits each. Group V was composed of two widely separated pits and group VI, on the lower ground, had up to seven pits close together with three outlying. All the above groups contained Peterborough Ware pottery, although Group VI also had Grooved Ware. Another group of pits (Group VII) did not produce Neolithic pottery and proved to be of a Bronze Age date, although apparently representing a similar activity to the others. Group VIII was located close to the south-western corner of the Early Neolithic building and one pit in the group contained Grooved Ware pottery.

### Pit Group I

(Figs 16-18, plate 3)

#### Description

This group, which lay close to the eastern boundary of the site (NGR SH 59595 70449, *c.* 61m OD), consisted of six pits in a rough L-shape with another outlying pit. Two of the pits were cut by a later field boundary. The pits were small and shallow with charcoal-rich fills.

Three of the pits (1036, 1049 and 1052) formed a line running almost exactly magnetic north to south. Pit 1036 was 0.6m in diameter and 0.13m deep, and 1049 was 0.54m in diameter and 0.18m deep. Both were circular pits with steep sides and flat bases. They had charcoal-rich silty fills containing heat fractured stones and were disturbed by animal burrowing. Pit 1052 was very shallow, measuring 0.55m in length, 0.45m wide and only 0.12m deep. It was roughly circular, although disturbed by animal burrowing and had gently sloping sides and a concave base. The fill contained less charcoal than the other two pits on this line, but was packed with pot sherds belonging to a single large Peterborough bowl in the Mortlake style.

Continuing the line of these three pits *c.* 7m to the north was an oval feature (1011), measuring 2.4m by 1.1m, and 0.38m deep. The fill of this feature contained *c.* 30% heat fractured stone, suggesting that it had some relationship to the pits, which also contained burnt stone. However, 1011 produced no finds and its identification with the other pits is uncertain.

To the east of 1052 was a cluster of three pits, two of them severely truncated by a later field boundary ditch 1034. Half of 1032 had been cut away by the ditch, although it had a probable original diameter of 0.31m. Pit 1027 had a diameter of 0.4m and was 0.16m deep. It was circular with steep sides and again had been disturbed by animal burrowing. Both pits had black, charcoal-rich fills.

Pit 1258 had been severely truncated by the ditch 1034, but was roughly circular in plan, measuring 0.72m in diameter and 0.2m in depth. It had a black loamy fill with patches of burnt soil and heat-cracked stones. It cut the top of another feature (1321), but this contained very much less charcoal than the pits and had a rather irregular shape. It is probable that 1321 was an animal burrow, perhaps an infilled sleeping chamber, and that the charcoal and artefacts were introduced from pit 1258 above.

Pit 1094, to the west of the other pits, was rather larger, measuring 1.2m in length, 0.75m wide and 0.33m deep. It was not very well defined but contained some larger stones that could be suggestive of post packing. The fill was charcoal-rich and contained burnt stones like the other pits but produced no finds. Defining this pit was problematic because it was cut into the top of another feature 1096, which initially appeared to be a rather irregular cut *c.* 4.5m long, up to 1.26m wide and 0.36m deep, with a U-shaped profile. Its fill was a soft, friable, orange silty sand with small stones and some charcoal. This feature was sealed by layer 1156, which was very similar to the general B horizon (1003) of the soil in this area. This strongly suggested that 1096 pre-dated soil formation processes that had not influenced the Late Neolithic pits, and was therefore very much earlier and almost certainly a natural feature. The complete absence of finds from this feature also supports this. There were other similar features in the area (1018 and 1222) filled by soft red-brown silt resembling 1003, but sometimes containing more stones. It is probable that these were peri-glacial features or the result of particular soil processes over a very long time and that they were not anthropogenic.

To the west of the pits was a very irregular linear feature (1376) filled with burnt soil, some pockets of clay being quite hard fired. This seemed too irregular to be a deliberate cut and may have been a burnt out animal burrow, or some other effect caused by probably quite recent burning.

It is not clear whether all the pits in this group were identified. The area around the pits was intensively and repeatedly cleaned to the north, east and west, except where a balk was left to protect a



water-pipe. This cleaning revealed numerous animal burrows but no further anthropogenic features. However, immediately to the south a former road and its flanking ditch cut across very close to the pits. If the pit group had continued to the south they would have been removed by the road.

### ***Interpretation***

There was much confusion in this area with animal burrows and late ditches, but the most convincing pits formed two small groups; 1036 and 1049 formed a pair and just over 2m to the south were four closely clustered pits (1027, 1032, 1052, and 1258). None of these were intercutting and all contained artefacts indicating a Mid Neolithic date. None of these pits had evidence for complex or gradual filling. There was no erosion of the pit edges, despite them being cut into soft silty subsoil. All seemed to have a single fill that appeared to have been deposited in one event. This was particularly clear with 1052 as the sherds of the Mortlake bowl were distributed throughout the fill.

Few of the other surrounding features were directly related to these pits; most of the features being either animal burrows or natural features. The rather amorphous pit 1094 could have been contemporary with the main group, although it produced no dating evidence. Unlike the other pits it contained large stones that could be interpreted as packing stones. However, the poor definition of this feature suggests that the stones had been concentrated by tree roots and that this was not a genuine pit. A similar problem is presented by 1011, which was initially interpreted as a burnt tree root hole, but the quantity of burnt stones and its fairly regular shape on full excavation suggests an anthropogenic origin, although its contemporaneity with the Neolithic pits cannot be demonstrated.

## **Pit Group II**

(Fig. 19)

### ***Description***

Further south along the ridge more pits containing pottery were found. There were three groups each containing three principal pits, and an isolated pit (referred to for convenience as Pit Group V). There were numerous hollows and burnt patches scattered around in trench 4, especially on the top of the ridge towards the eastern end of the trench. Most of the hollows were caused by tree or shrub roots. They had dark brown fills and often concentrations of stones. None of these produced any prehistoric finds and they could have been created at any period before the fields were laid out in their current form and improved in the nineteenth century. The patches of burnt natural were also concentrated on the ridge and are probably related to scrub clearance. None were closely associated with the pit groups and there is no evidence to associate them with prehistoric activity.

Group II was situated at 70m OD just west of Rhos Isaf (NGR SH 59456 70335). The three pits 4012, 4021 and 4049 were laid out in a nearly regular isosceles triangle with a base of 3.5m and sides of 3m, externally. Pit 4012 measured 0.98m by 0.82m and 0.2m deep, 4021 measured 1.01m by 0.86m and 0.21m deep, and 4049 was 0.7m in diameter and only 0.1m deep. All were sub-circular with steep sides and fairly flat bases, although 4049 had more gently sloping sides because only the very base of the feature survived. The fills were of mid-brown silty clay with occasional stones and flecks of charcoal and were generally homogenous with no visible tip lines or other evidence of gradual filling. Pit 4049 contained some burnt stone and 4021 had three larger stones apparently placed in its base.

About 4m west of these three pits was an arc of five smaller pits (4016, 4018, 4020, 4024, and 4413). These were sub-circular, up to 0.55m in diameter, but no more than 0.1m deep. They contained few finds but quantities of charcoal and 4020 also contained large numbers of charred hazelnut shells.

### ***Interpretation***

This was a neat, well-defined group, despite pit 4049 being heavily truncated, largely by incautious machining during stripping. The absence of possible packing stones and homogeneity of the fills are consistent with Pit Group I, although the number of sherds from this group was much less. The three larger pits and the five smaller pits form two sub-groups, but their layout indicates that they were respecting the same central space and were probably all contemporary. The small pits were so shallow that it is impossible to say whether they were pits or the base of postholes, forming a small curving shelter providing protection from the prevailing westerly winds.

## **Pit Group III**

(Fig. 20, plate 4)

### ***Description***

About 52m south-west of Pit Group II was Pit Group III (NGR SH 59418 70298, 71m OD) formed of pits 4062, 4069 and 4092, which were laid out in a triangle measuring c. 4.5m by 3.5m by 3m.

Pit 4062 was roughly oval in plan, measured 0.91m by 0.72m and 0.44m deep, and had steep, near vertical sides and a fairly flat base. This pit is of particular interest because it had a more complex depositional history than the rest. Its main fill was brown clayey silt (4061), with some larger stones near the bottom of the deposit, particularly a large stone in the centre. The boundary between 4061 and the redeposited sub-soil (4414) that surrounded it was steep, and both of these fills rested on a charcoal-rich primary fill (4067).

Pit 4069 measured 0.82m by 0.54m and was 0.22m deep. Although not as complex as pit 4062 the fill did contain thin lenses of charcoal and sand. There was also a concentration of stones towards the middle of the fill but these were too small to be post-packing stones. The fill of 4092 contained some larger stones but otherwise the fill was quite homogenous with pottery, mainly from a single Fengate vessel distributed throughout. This pit measured 0.66m by 0.61m and was 0.32m deep. The sides of both these pits were steep and well defined and their bases fairly flat.

### ***Interpretation***

Although these pits did not form a regular triangle their layout appeared very clear and deliberate. There were hollows caused by tree and shrub roots in this area but no other anthropogenic features of any sort. The layout of the pits and their depth and steep sides are suggestive of postholes, but the evidence from their fills was not convincing. The fills of these pits were generally more complex than those of the other pit groups. The lenses in pit 4069 hinted that the material had not been dumped in one event, but the stones within the fill were too small for packing stones. Pit 4092 had a more homogenous fill. It did contain some larger stones but these were not positioned to suggest packing stones. The most complex fill was in pit 4062. Three possible scenarios might be used to explain the sequence seen in this pit.

1 - After the charcoal-rich layer (4067) had been deposited a post about 0.4m in diameter was placed in the hole and packed round with stones and redeposited sub-soil (4414). The post later decomposed *in situ*.

2 - 4067 was deposited, the pit was left open to weather and the upper edges collapsed leaving deposits slumping steeply into the cut (4414). The rest of the pit was infilled (4061).

3 - 4067 was deposited and the pit immediately backfilled with the material that had been dug out of it (4414). Later the pit was redug but smaller and shallower than before and filled with 4061.

The problem with the posthole hypothesis is the absence of convincing packing stones and a large stone placed in the middle of 4061. It is possible that the post was removed and the stone and the rest of 4061 then deposited. The slumping of the sides is possible but it assumes a much greater depth to the pit for the material to have slumped from at such a steep angle. The way that fills 4067 and 4414 were mixed at their interface is perhaps more indicative of them having been deposited together. During excavation it was initially thought that the boundary of (4061) was the pit itself. Removing (4061) left a neatly circular, steep-sided hole, and it was only (4067) extending under the sides that indicated that this was not the original cut. It is therefore tentatively suggested that this pit was rapidly infilled and then redug and another dump of domestic rubbish was deposited. For the filled pit to still be visible the redigging probably occurred fairly soon after the original event.

The evidence, therefore, indicates that these were pits and not postholes. Pits 4062 and 4092 appear to have been filled quickly soon after digging, but 4062 was probably redug and material, including most of the pottery in this pit, was deposited. Pit 4069 may have been left open for longer and been infilled sequentially.

### **Pit Group IV**

(Fig. 21, plate 5)

#### ***Description***

Pit Group IV was located further down the slope at c. 67m OD (NGR SH 59360 70338). Two pits 4100 and 4109 were only 0.2m apart with pit 4103 c. 1.2m to the east. They were all steep sided sub-circular pits; 4100 was 0.7m in diameter and 0.28m deep, 4103 measured 0.9m by 0.8m and was 0.3m deep, and 4109 was 0.63m in diameter and 0.4m deep. The lower fill of 4100 was a fairly sterile orange sandy clay with shale, but the upper fill was dark brown to black clayey sand with shale, burnt stone, charcoal and small pot sherds as well as some large rounded stones, that might have been packing stones. In contrast it was the lower fill of 4103 that contained charcoal, burnt stone and pottery in a dark brown clayey silt. The sides of the pit then seemed to have slumped in and the upper, more sterile fill of mid-brown clayey silt with occasional pebbles was deposited. In pit 4109 some erosion of the pit side occurred before the deposition of a loose orange sandy silt with some charcoal, burnt stone and patches of burnt soil. Although it contained some burnt material this deposit was consistent with erosion from the surrounding B horizon. The upper fill was richer in charcoal with more burnt stone,

burnt flint and a large severely heat-cracked stone. The last mentioned was a cobble with a naturally flat face but it may have been a hearthstone as it was so heavily burnt.

### ***Interpretation***

Again this was a neatly laid out group of pits in an area with no other neighbouring features. It could be argued that pits 4100 and 4109 were too close together to be contemporary, but they did not actually intercut and could have functioned together. In contrast to the pits in the other groups all these pits had some evidence of erosion of their sides. This was quite extensive in the case of 4103, where slumping of the sides had occurred. In 4100 and 4109 the erosion appeared as sterile deposits in the base of the pits. All the pits contained large stones, some of which were suggestive of packing stones, but none were entirely convincing. Pits 4100 and 4109 certainly seemed to be too close together to have held posts as part of a structure. The possible hearthstone in 4109 was placed horizontally and centrally near the top of the pit within a deposit of burnt material. The stone on its own was not large enough to be an *in situ* hearth, but it seems to have been quite carefully placed within the pit fill. The other pits also contained burnt material including burnt stone, but in the case of 4103 this deposit lay below a later, less burnt fill. Pits 4100 and 4109 seem to have been left open for long enough for erosion to partially fill them before charcoal-rich material was deposited. In 4103 this sequence seems to have been reversed. The charcoal-rich material was deposited and then the pit left open so that the sides started to collapse and the rest of the pit was filled with eroded material.

### **Pit Group V**

(Fig. 22, plates 6 and 7)

#### ***Description***

Towards the southern edge of trench 4 was a single small pit 4133 (NGR SH 59328 70301, 68m OD). This was an oval pit measuring 0.67m by 0.52m and 0.25m deep. It had steep sides and a rather uneven base as it was cut into the shale bedrock. The centre of the pit was taken up by a rounded stone nearly 0.3m in length. Underneath and to the east of this stone, within a charcoal-rich deposit, were numerous pot sherds, some quite large, but there were very few sherds in the western half of the pit. The burnt deposit and the pottery seem to have been deposited together, with the pottery probably deliberately placed on the eastern side of the pit. The pit was then infilled with yellowish brown clayey silt with abundant charcoal and occasional angular small stones. This still contained a few pot sherds but these and the charcoal may have been mixed into this deposit from that below.

This appeared to be an isolated pit, although it was only 7m from the trench edge, and the existence of other pits outside the excavated area cannot be ruled out. There was another pit lying between it and Pit Group IV; 22m from pit 4133 and 29m from Pit Group IV. This pit (4127) was circular with steep, well-defined sides and measured 0.77m in diameter and 0.2m in depth. The fill was a fairly homogenous dark brown clayey silt with occasional charcoal flecks and abundant large fire cracked stones. It was very similar to the other pits with later Neolithic pottery but contained no finds at all.

### ***Interpretation***

Pit 4133 seemed to be in the same tradition as the other pit groups although it seemed to be isolated. All the other pit groups were closely clustered and any features within a similar distance of 4133 would have been within the trench and identified. It is odd that pit 4127 produced no finds if it was of the same date and function as the other Neolithic pits. However, it did contain heat-cracked stones, which were found in many of the other pits. Unfortunately no soil sample was taken from pit 4127 to collect charred material so it has not been possible to radiocarbon date this pit.

### **Pit Group VI**

(Figs 23 and 24)

#### ***Description***

Pit Group VI was situated in trench 6 in the low-lying western part of the site, and so in a very different location to the other groups, which were on the ridge. The pit group was on top of a slight knoll in the glacial deposits at about 30m OD. This pit group included three separate sub-groups. To the north up to seven pits were situated close together amongst irregular features probably caused by tree roots (NGR SH 59032 70698). Two more pits lay about 22m to the south-west (NGR SH 59015 70681) and a single pit 40m to the south-east (NGR SH 59071 70681). Some of the pits produced later Neolithic pottery and several flint tools made in a very fine brown flint rarely found elsewhere on the site.

There were two well-defined pits 6041 and 6044 situated next to each other, 1.2m apart. Pit 6041 measured 0.98m by 0.71m and 0.23m in depth, while 6044 measured 0.68m by 0.54m and 0.3m deep. Both were sub-circular, steep sided and had fairly flat bases. Pit 6041 contained *c.* 20% burnt stones



and 6044 was largely filled with stones but most were not burnt. Although the stones in 6044 were fairly evenly distributed throughout the fill some did slope down the pit sides and it is possible that these represent disturbed post packing stones. There did seem to be slumping around the edges of 6041 as these were quite difficult to define, but there was no such evidence for 6044. The surface of the fill of 6044 and the area around it were reddened by heat suggesting that there had been a fire directly above the infilled pit. Pit 6041 was particularly rich in finds, producing fine flint tools and pottery.

Close to these pits were several other features, which were more or less convincing as pits. The recognition of anthropogenic features was made harder by the presence of tree-root hollows and animal burrows in the area, and a large pipe trench that cut through the middle of the group. Two more features were almost certainly genuine pits (6043 and 6055). Pit 6043 was almost square in plan with quite steep sides and a flat base, but had been disturbed by animal burrowing. It measured 0.64m by 0.57m and was 0.11m deep. Its fill was charcoal-rich with occasional stones. Although 6055 had been largely cut away by the pipe trench it had evidently been a circular feature about 0.78m in diameter and at least 0.18m deep. Its fill was also charcoal-rich with *c.* 50% fire cracked stones.

Three other features may have been pits. Feature 6079 was sub-circular, 0.4m in diameter and 0.17m deep. It contained no finds but its fill did include fragments of charcoal and occasional heat-cracked stones. This feature was somewhat difficult to recognise because it had been dug into the top of a tree hollow. Feature 6047 was a rather irregular oval hollow (0.58m by 0.43m, 0.16m deep) filled with orange brown silty clay with only occasional charcoal fragments, but it did produce two small flint flakes. Even smaller and less certain was 6061 (0.31m by 0.25m, 0.12m deep). Its dark brown sandy loam fill contained a little charcoal, but it too contained two flint flakes and some small fragments of pottery.

There were several tree-root hollows in the area and it is probable that these were contemporary with or pre-dated the pits. The root complex 6049/6075 was cut by the probable pit 6079, so the other pits may have post-dated this feature. The root hole did contain crumbs of prehistoric pot. Although the other root holes nearby did not contain finds one (6076) did produce charred hazelnut shells. This could be indicative of a hazel tree that has burnt down but the charred nuts could have come from the activity associated with the pits.

About 22m south-west of this first cluster were two more pits. Pit 6034 was an irregular oval shape, measuring 0.9m by 0.8m and 0.15m deep, and 6072 was circular, 1.1m in diameter and 0.23m deep. Although 6034 was little more than a hollow with brown silty homogenous fill it contained quantities of pottery from a single Fengate vessel. Pit 6072 was also artefact-rich but was a more complex feature. Around the sides of the pit was an orange/red brown silty loam (6073), the hollow in the middle was lined with large rounded stones (6074) and had been filled in by a soft dark brown silty loam with frequent charcoal (6066). Most of the artefacts came from deposit (6066), but two sherds were recovered from (6073).

Fifty four metres to the east was a single small pit measuring 0.65m by 0.53m. It was nearly circular but only shallow (0.12m deep), with gently sloping sides. The fill was a dark grey silty sand with charcoal.

### ***Interpretation***

These pits lay about 370m south-west of the southern Llandygai henge and at about the same altitude. Their position on a drier knoll in this rather wet area was probably of significance. The ground was also fairly flat where the pits were situated but sloping elsewhere, making this an obvious site for occupation activity. The main group of pits were little over 4m from the trench edge, so it is possible that there are further features beyond. In the main group, if all seven features are accepted as pits of some sort, it can be seen that they were laid out in a rough oval measuring *c.* 5.8m by 4m, with 6055 close to the centre. The stones in some of the pits could represent packing stones but there was no firm evidence that these features were postholes.

Pit 6072 might be interpreted as a posthole but there was little evidence that the other feature in this pair, 6034 was also a posthole. The more complex fills in 6072 could be interpreted as a large postpipe surrounded by packing material, but there are problems with this interpretation. If deposit 6066 were the fill of a postpipe and 6073 packing material around the post then it would be expected that the large stones (6074) would be within 6073 to act as packing stones. In fact they were nearly all within 6066 and many lay sloping against the boundary between 6066 and 6073, as if this had been a cut. It is possible that the pit had been filled with 6073 then redug and the stones (6074) laid in the cut and 6066 deposited. The boundary to 6066 was certainly steep and regular enough to suggest this, although it was perhaps not as clearly defined as might be expected in this case. Some disturbance by animal burrowing and stones having been pressed well into the soft fill (6073) might explain this. If this was a redug pit then it is similar to examples in Pit Groups III and IV.

## **Pit Group VII**

(Figs 25 and 26)

### ***Description***

This group of seven pits was situated in trench 3, 65m uphill from roundhouse A (NGR SH 59191 70399, 51-52m OD), and consisted of a closely grouped cluster of five pits and two outliers.

Around an area of burnt natural 3123, measuring 1.34m by 0.95m, were five pits (3111, 3139, 3143, 3155, and 3190) varying in size from 0.45m in diameter and 0.13m deep to 1m in diameter and 0.4m deep. Most had steep sides and flat bases, although 3190 had a bowl-shaped profile, with more gradual sides and rounded base. All contained some charcoal in their fills and 3143, 3155 and 3190 had fire cracked stones. Pits 3155, 3139 and 3143 also contained small fragments of burnt bone and flint and 3155 had fragments of pottery. While the fills of 3155 and 3190 were fairly homogenous the other pits had more than one distinct fill. Pit 3143 had three fills, the first was a deliberate deposit of charcoal-rich material but the other two appeared to be phases of slow silting. Pit 3139 had two fills, the lower one with very little charcoal; the upper fill contained more charcoal but not a large proportion. Between the two fills was a large, unworked stone, sloping down across most of the width of the pit. In 3111 were two fills, the upper one being darker and richer in charcoal than the lower one. They both contained large cobbles, but the lower fill was composed almost entirely of cobbles. The matrix between these cobbles was quite similar to the natural subsoil.

Two pits lay to the south-west. These were about 4.5m apart and the closest was *c.* 4m from the main group. Pit 3121 was approximately oval (0.71m by 0.54m and 0.21m deep) and bowl-shaped in profile, lacking the steep sides of most of the other pits. It had a single homogenous fill with only very occasional charcoal flecks and no finds. Pit 3146 was circular with vertical sides and a flat base (0.53m diameter, 0.26m depth). Although dug into a fairly soft sub-soil the steep sides were well defined and showed no erosion. The fill was soft and dark with charcoal and heat-cracked stone and some large stones in the base. It also contained several fragments and one larger featureless sherd of pottery in a vesicular fabric.

There were two other patches of burning (3135 and 3173) to the west of the main group of pits, with another smaller patch 3191 to the east. There were three other features in this area but they proved to be tree root hollows or animal burrows. Located 8.5m from the main pit cluster but only 2.5m from pit 3146 was a large pit of a very different character. This pit (3186) was an oval cut, measuring 2.8m by 1.8m and 1.3m deep, with steep to vertical sides and a flat base. Much of the fill was composed of large cobbles in a loose, soft matrix. Although there were no finds the unconsolidated fill suggested a recent, probably post-medieval, date for the feature.

### ***Interpretation***

#### ***Pit Group VIIa: Outlying pits***

It was initially assumed that the main cluster of pits and two outliers were of the same date. Radiocarbon dating proved this assumption to be incorrect and that two distinct periods of activity were present. The implications of this, especially in relation to the outlying pits, will be discussed below in the section on radiocarbon dates, but it should be noted here that the outlying pits are to be considered separately from the main cluster.

#### ***Pit Group VIIb: Main cluster***

The shape and size of the main cluster of pits compared closely with the Neolithic pit groups described previously. The presence of charcoal and heat-cracked stones in their fills was also similar. The big difference was the scarcity of any artefacts, especially pottery. The location on a fairly steep slope was different to both the pit groups on top of the ridge and to Pit Group VI on its low knoll. The layout of the pits was similar to Group VI. The five pits lay on a rough circle around the burnt patch, with an external diameter of *c.* 4m and an internal diameter of *c.* 2.5m. Although smaller this recalls the layout of the main cluster of pits in Group VI. Also like Group VI there were outlying pits, but not so distant in this case. With the scarcity of finds the interpretation of this group depended heavily on the radiocarbon dates, as discussed below.

## **Pit Group VIII**

(Fig. 27)

### ***Description***

Pit Group VIII was located close to the south-western corner of the Early Neolithic building (NGR SH 59436 70536, 56.5m OD). This group consists of six pits, one with complicated fills and possible evidence for recutting, and one containing Grooved Ware pottery. The pits, therefore, appear to date from much later than the building, but also possibly later than the majority of other pit groups that contained Peterborough Ware pottery.

The six pits were arranged in a rough oval measuring 3.8m by 3.3m externally and about 2m diameter internally. Feature 1305 was a shallow, sub-circular pit measuring 0.6m by 0.56m and 0.12m deep. It had a single mid-brown sandy clayey silt fill containing some charcoal and charred hazelnut shells. Pit 1309 was larger and deeper at 0.84m by 0.78m and 0.28m deep. It had three fills, the lowest being richest in charcoal, and two large stones had been placed in the middle of it, but no finds were recovered.

On the western arc of the circle of pits were two rather irregular, shallow features. One was a sub-circular pit 1584 (0.6m by 0.65m, 0.23m deep) with gently sloping sides. Its fill contained charcoal, including charred hazelnut shells, but no finds. Several flat stones were concentrated in the base of the cut, almost as if they were lining it. Immediately adjacent to the pit and just cutting through the edge of its fill was 1586, measuring 0.6m by 0.75m and 0.18m deep. It also had gently sloping sides and a single fill with no charcoal or artefacts but occasional larger stones.

Feature 1596 was a well-defined, fairly deep pit, measuring 0.91m by 0.78m, and 0.36m deep. It was sub-circular with steep sides and a regular flat base. It was filled by red brown sandy clay with shale fragments and discreet charcoal lenses. Redeposited natural in the upper part of the fill indicated some collapse of the sides had occurred. It appeared that another smaller circular pit 1579, 0.72m in diameter and c. 0.3m deep, cut into the top of the completely infilled pit. This had a sequence of fills, the lowest of which were similar to the fill of 1596 but with some lumps of yellowish clay, then there was a charcoal-rich layer, sealed by red-brown silty clay. The redness appeared to be due to heating and suggests that the charcoal was deposited and covered over when it was still hot or perhaps material from a hearth had been deposited in the pit, with the charcoal dumped first then burnt soil. It is possible that this apparent recut was an illusion caused by a considerable dump of material down the southern side of the pit before the sequence of burnt layers was deposited.

East of 1596 was a neat oval pit 1553, measuring 0.95m by 0.75m and 0.25m deep. It had steep sides and a slightly rounded base. The pit was filled by mid-brown silty sand with clayey patches, occasional stones, shale fragments and frequent charcoal fragments towards the base. Upper part of the fill seems to have been the result of natural silting. Distributed throughout the main fill was a great deal of pottery from perhaps six different Grooved Ware pots, none complete but present in quite large pieces.

To the north-west of this group of pits were four other features, which were close enough to be related to either the pits or the Early Neolithic building. Features 1562, 1545 and 1547 were small, shallow and fairly irregular, no more than 0.6m in length and 0.17m in depth. Feature 1545 did contain infrequent charcoal flecks but the others contained nothing to suggest an anthropogenic origin. Feature 1605 was larger, 0.78m in diameter but only 0.12m deep. Its sides and base were rather uneven and although it contained some large stones the fill contained no artefacts or charcoal.

### ***Interpretation***

The oval arrangement of the pits is similar to that in Pit Groups VI and VII, but unlike both these groups there was no central feature. The size and shape of the pits was also consistent with the other groups. The fills of 1596, with their complex sequence of lenses and possible recut, were quite different to the homogenous fills of most of the other pit groups. Pit 1553, however, appeared to have had a very similar function to the pits in the other groups as it had a single homogenous fill with pot sherds throughout. The sherds of different vessels were mixed together, with no indication that large pieces of each vessel had been inserted separately. The similarities with the other pit groups suggest that Pit Group VIII had a similar function to the others. The presence of Grooved Ware, however, may be taken to suggest a later date.

Unlike the other groups Pit Group VIII was not isolated but on the edge of the area of Early Neolithic occupation. It is possible, therefore, that not all the pits in this group were contemporary. Small fragments of Early Neolithic pottery from both pits 1305 and 1553 can be explained as being residual. The presence of igneous rock flakes in four of these pits does suggest activities in common, although Graig Lwyd flakes also came from features related to the Early Neolithic building.

The characteristics of some of the Graig Lwyd pieces were quite distinctive, as discussed below, and similar pieces were also contained in a pit (1729) on the western limit of this area. This pit produced no other diagnostic material and was not dated. The Graig Lwyd pieces may indicate that it was contemporary with Pit Group VIII rather than the building.

## Artefacts

(Figs 28-34, table 2 gives a summary of finds from all contexts related to the pit groups)

### Pottery

This section summarises the pottery study by Frances Lynch (see appendix II for full report). The Pit Groups, with the exception of Group VII, all produced either Peterborough Ware or Grooved Ware.

In Pit Group I there were up to seven vessels of the Mortlake style of Peterborough Ware (Fig. 28). The most complete vessel (Pot IA) was the main vessel in pit 1052 and the pieces seem to have been placed in the pit with some care. Many of the sherds rested against the sides of the cut, some with the rims upwards, but two large rim sherds were also found at the base of the pit. It appears that although the sherds were fairly large when placed in the pit there was little evidence that whole sections of pot had been placed upright in the pit. Within Llandygai henge B pit FB 39 had a large piece of Mortlake ware deposited in a very similar way (Lynch 2001, 69).

The other vessels were represented by only a few small sherds in pit 1052 and in the other pits. Pit 1036 held the remains of several pots, and pit 1049 had a few body sherds from what might be a single pot, but in both instances there were additional featureless sherds. Two sherds of residual Early Neolithic pottery occurred in pits 1036 and 1052. This pit group is about 176m from the Early Neolithic building, so it is probable that these sherds are all that remains of a separate area of Early Neolithic activity. There is a possibility that the larger, atypical pits, i.e. 1011 and 1094 were associated with earlier activity, although neither produced any specific evidence for this.

Approximately 27 vessels from across the site are judged to belong to the Fengate style of Peterborough Ware. Most of the material came from the pit clusters on top of the ridge in the south-eastern corner of the site: Pit Group II had four pots (Fig. 29), Group III perhaps 11 vessels (Fig. 30), Group IV had only three (Fig. 31), and pit 4133 in Pit Group V contained the remains of five vessels (Fig. 32). Pottery identified as probably Fengate was also found in Pit Group VI, at the lower, western end of the site (Fig. 33). This pottery style was found in the pair of pits (6034 and 6072) and in the isolated pit (6087). Although most probably attributable to the Fengate tradition these vessels had similarities to Early Bronze Age Collared Urns. Pit 6034 contained pieces of a single urn-like vessel (PGVI.A), pit 6072 contained parts of four vessels and the isolated single pit 6087 had other featureless sherds similar to vessel PGVI.B in pit 6072.

In all instances, except Pit Groups II and IV, there was one vessel that was represented by a substantial number of sherds, normally representing almost half the circumference of the rim, with some of the body and base. The deposition of these larger pieces of pot in the pits suggests careful placing of segments of an already broken vessel. Alongside these 'major pots' there are minor ones represented by only a few sherds. This same pattern of deposition occurred with the Mortlake style vessels from Pit Group I and the Grooved Ware in Pit 1554 (Group VIII). The main vessel in Pit Group III (PGIII.A) was present as three sections amounting to about 50% of the rim circumference, with a segment of base and lower wall. Similarly pit 4133 in Pit Group V contained large pieces of rim and some body and base of one vessel (PGV.A) along with small pieces of other pots. Most of the pottery was placed in the eastern side of the pit under a stone. Vessel VI.A, the only pot in pit 6034, was also incomplete and had become somewhat weathered since it had been broken.

Nine Grooved Ware vessels can be recognised, one (PGVIII.A) present in substantial quantity, the others represented by only a few sherds. Grooved Ware comes from two find spots widely separated across the site. Pit Group VIII, close to the Early Neolithic building, contained six pots, all from one pit (1553) (Fig. 34). The other pits within Pit Group VIII did not contain pottery, with the exception of crumbs of Early Neolithic pottery from pit 1305. Pit 1553 also contained fragments of Early Neolithic pottery and it is assumed that these were residual. Sherds of the most complete pot (PGVIII.A) were found close together in the southern part of pit 1553, but sherds of the other vessels were mixed together, often lying directly one on top of the other as if deposited together. The Grooved Ware in pit 1553 was, therefore, deposited in exactly the same way as the pottery in the Peterborough Tradition pits, with one major pot broken into large segments and a few sherds of other vessels. This pit was isolated from the Peterborough pits by at least 175m. It was also isolated from the other Grooved Ware find spots (Pits 6041 and 6043, Fig. 33) over 400m away amongst the main pit cluster in Pit Group VI. Pit 6041 contained pieces of three vessels, one of which was represented by 58 sherds. Pit 6043 contained only featureless sherds but of a fabric like the Grooved ware sherds in pit 6041. The central pit 6055 within this main cluster contained pottery judged to be Fengate Ware, but this was in the form of tiny crumbs. Similar tiny crumbs came from a possible tree hollow 6075. A small pit 6061 also in this cluster produced a tiny thin-walled sherd with well-crushed grits, which, though featureless, is



reminiscent of Beaker fabrics from Llandygai Henge B. It is noteworthy that this is the only hint of Beaker pottery on this large site.

Sherds from any one vessel were almost always confined to a single pit. It is possible that vessel PGIII.H from Pit 4069 and III.F from Pit 4092 are in fact part of the same pot. In pit 1027 there were some body sherds that might belong to Pot IA from pit 1052. More dramatically it is possible that two rim sherds from 4103 (Pit Group IV) are from the same vessel as sherds deposited in 4021 in Pit Group II. As there is nearly 95m between these two pit groups this could have significant implications about their use and date, but all these comparisons are being tested by fabric analysis.

There was also no mixing of styles between pit groups. The Mortlake Ware in Pit Group I is well separated from any of the Fengate pits. The only place where Fengate sherds were found near Grooved Ware was in Pit Group VI, but even here pits with Fengate and pits with Grooved Ware were in separate clusters about 20m apart. The main cluster containing Grooved Ware did also have fragments of possible Fengate and Beaker pottery, but the small number and size of these pieces suggests that they were residual and intrusive material. It is surprising that there was so little Beaker pottery on the site as three pits in Llandygai henge B contained Beakers (Lynch 2001, 65).

Eight sherds were chosen for residue analysis (see appendix III for full report). Two each of these came from Pit Groups I, VI and VIII and one each from Pit Groups III and IV. These were chosen to be base or lower body sherds and most had traces of possible sooting or more obvious residues. Of these both sherds from Pit Group I, and the sherds from Pit Groups III and IV produced no traces of lipids. The remaining sherds from Pit Groups VI and VIII yielded traces suggesting they had contained a triacylglycerol oil or fat, possibly from plant oils. The sherd (SF 852) from pit 6072 in Pit Group VI also yielded these compounds produced by heating oil or fat, and therefore likely to be indicative of cooking. The sherd (SF 95) from pit 1553 in Pit Group VIII yielded a possible wax ester and a number of long chain alcohols. The origin of these cannot be identified with certainty but one possibility is beeswax. Stern (appendix III) considers it fairly typical for about 50% of sherds in a residue study to yield no lipids, so the results must be considered to be positive and this could prove to be a fruitful area for further analysis in future.

Petrological analysis of the fabric of selected sherds was carried out and generally suggested a local origin for the pottery. The one possible exception was the main vessel in Pit Group V (PGV.A). The inclusions in this fabric were predominately metaquartzite, which may indicate a more distant origin for this vessel (appendix XVII). There is a distinct preference in the Peterborough Ware fabrics for light coloured lithics as inclusions, particularly quartz and quartzite. This preference for quartz in Welsh Peterborough Ware has been noted by Gibson (1995), but Williams and Jenkins (appendix XVII) believe that the present assemblage provides the 'the best example' of this so far found in North Wales.

### **Flint**

This section summarises the results of the flint analysis by George Smith and microwear studies by Jolene Debert. Full reports are in appendices VI and X.

Pit Groups I to V contained flint debitage including microdebitage indicative of flint knapping. For the microdebitage to be retained the knapping must have either occurred close to the pits or the pits were filled by material collected *en masse* from a source where flint knapping had occurred. The small size of the pieces, the lack of distinct forms, the mix of colours and the scatter through several pits in a group suggests casual, probably domestic use and deposition. Pit 1049 in Pit Group I was notable for containing a large number of pieces of microdebitage. The fact that most are of the same colour suggests that they derive from a single knapping episode but only one of the five larger waste pieces is the same colour, so the full range of knapping waste is not represented.

Most of these pit groups lacked diagnostic pieces. Pit 4012 in Pit Group II contained a serrated piece of later Neolithic type, with sharp and fresh serrations, and pit 4109 in Group IV contained a scraper (SF1252, Fig. 31), again more characteristic of the later rather than earlier Neolithic.

The flint used was mostly pebble flint from the local boulder clay, but Pit Group II produced several pieces of finer, probably imported flint. Pit Group IV also had two pieces made on good quality mottled flint. A few pieces of better quality imported flint were also recorded at the Early Neolithic settlement at Trefignath, Anglesey, where pebble flint was the main source of raw material. The better quality flint was there interpreted as from the Irish Sea drift (Healey 1987).

Pit Group VI had quite a different assemblage to those discussed above. Eight pieces are on pebble flint but most are on dark, better quality, probably imported flint (Fig. 33). The varied colours of the microdebitage suggest pebble flint and it appears that the larger implements were made elsewhere or brought to the site as blanks that needed little working while primary working was confined mainly to pebble flint.



There were more tools in this pit group including convex scrapers typical of the Middle or Later Neolithic. These are more comparable to scrapers from sites in southern Britain, like Durrington Walls (Wainwright and Longworth 1971, 163-9), than with examples from closer at hand, e.g. at Capel Eithin, Anglesey (Aldhouse-Green 1999, 43-4). A fine serrated piece from pit 6041 is comparable to D-shaped backed knives of the Middle or Later Neolithic, e.g. at Fengate (Pryor 1978) or Durrington Walls (*op cit* 174). Also included were edge retouched knives and spurred pieces, which are common tool types that are not diagnostic of period but both the knives are on good quality flint that must have been imported. Two Late Mesolithic microliths were found as discussed above, but these must have been residual.

Only a single flint flake fragment in yellow-brown flint was recovered from Pit Group VII, and only three pieces came from Pit Group VIII. From the latter pit group was a flake fragment from a pebble core, a small flake fragment and an irregular fragment probably struck from a pebble by the anvil or *ecaillé* technique. These pieces give no suggestion of date or function and the small number suggest accidental or even residual inclusion.

The usewear analysis (appendix X) indicated that scrapers from the pit groups were used on a variety of materials from soft to hard. Cutting tools were also identified that had been used on materials with a variety of hardnesses.

### ***Burnt stone and bone***

Burnt stone was present in some pits of most groups, although it was not recorded in Pit Groups III and VIII. It was not present in every pit in a group and seemed to be a variable inclusion like the pottery and flint. Burnt bone was similarly generally but not consistently present. It was only present as very tiny fragments, although pit 4133 did have about 1g. Pit Groups III, VI and VIII did not contain any burnt bone, but most pits in group VII had some. All the bone was very fragmentary and could not be identified to species but it appeared to be from animals rather than humans.

### ***Graig Lwyd***

The reduction of stone axes to produce flakes has been discussed in relation to the Early Neolithic building but the same process also seems to have been associated with the pit groups. Thirty-six flakes of Graig Lwyd stone came from Pit Group I, fifteen of those from pit 1049 (Fig. 28). There were five from Pit Group III and four from Pit Group VI, but several of these were very small. In Pit Group VI only pits containing Fengate pottery produced Graig Lwyd flakes. Pit Group V produced one flake and Pit Group VIII had two (Fig. 34), although these were of particular importance and this group also contained two flakes possibly from the source on Mynydd Rhiw, Llŷn Peninsula (appendix IX). Five of the flakes from Pit Group I could have originated from the manufacture of stone axes but the majority of the assemblage represented a destructive sequence in which axes were broken down. Most significant in this respect are medallion-shaped flakes with areas of polish resulting from the removal of part of the polished surface of an axe. Two such flakes were found in Pit Group VIII and three in Pit Group I. The presence of one of these flakes in pit 1729, 18m west of the Early Neolithic building, may suggest that this pit was contemporary with Pit Group VIII rather than with the building. However, this must remain uncertain as the Graig Lwyd flakes found in the building were also largely from a destructive sequence.

Williams (forthcoming) argues that the fresh, sharp edges of the flakes and the lack of retouch may indicate that the destruction of the axes was not aimed at producing useful tools. Despite the scarcity of flint and the suitability of the Graig Lwyd stone, tools made on Graig Lwyd flakes are not found in North Wales, with the exception of Bryn yr Hen Bobl (Hemp 1935), where three scrapers were found (Lynch 1991, Fig. 29, nos.10,11,13).

The collection from of flakes Pit Group I can be compared to that from pit FB 151 on the Llandygai Industrial Estate site (Lynch 2001, 71, Fig. 35). Pit FB151 contained a broken Graig Lwyd axe and four pieces struck from polished axes as well as other Graig Lwyd flakes without polish. It was dated to 2880-2570 cal BC, which makes it approximately contemporary to the Grooved Ware related activity in Pit Group VIII rather than Pit Group I. Pit FB151 confirms that axe exfoliation was undertaken at the main henge monument site, and its location within henge B makes its interpretation as a ritual deposit likely (Lynch 2001). However, there may also have been axe finishing associated with the site as pit FB39 in henge B and FA370 in henge A contained slabs interpreted as axe polishers and the site has been described as an axe finishing site (Lynch 1991, 110).

More work is necessary to demonstrate whether the axes were flaked to produce useful tools or as a ritual destruction. In either case only a small proportion of the resulting flakes were included in the pit fills, indicating that the material had been gathered elsewhere. The presence of Graig Lwyd flakes in the Neolithic building demonstrates that this tradition of destructive flaking started in the Early

Neolithic, and the pit groups indicate that it continued throughout the Neolithic period. In the Mid Neolithic it was associated with the Mortlake Ware in Pit Group I and to a much lesser extent with the Fengate Ware in the other pit groups, but it is not clear whether these differences are chronological, cultural or relate to different activities taking place. The flakes in Pit Group VIII were fewer but most clearly related to the exfoliation of axes.

### **Quartz**

A small number of crystal quartz flakes were found in Pit Groups III (pit 4092), VI (pit 6041), VII (pit 3146) and VIII (pits 1553 and 1596). Those in Pit Group VIII were probably residual from the Early Neolithic activity and it is possible that the rest are also residual or accidental. The only piece of interest was that from pit 3146 in Pit Group VII. This was a small, rod-shaped fragment of crystal quartz (Fig. 34, 1308), with some damage at one end, probably from its production by the anvil technique. Despite the lack of other flakes or pieces of microdebitage of crystal quartz this piece was certainly manufactured. As described below this pit was dated to the Early Neolithic and this piece supports the use of crystal quartz in the earlier Neolithic but not in the mid or later Neolithic.

### **Charred plant remains**

Remains from 76 samples were studied and most contained modern uncharred contaminants. Samples from features 1011, 1094 and 1096 produced no ancient remains at all, supporting suggestions that these features were not functionally part of Pit Group I. Charcoal and small numbers of cereal grains formed the bulk of the ancient plant remains recovered. While charcoal was common in all the pit groups, for the most part it survived as unidentifiable fragments. However, in Pit Group IV most of the charcoal identified was hazel, with some oak. Both hazel and oak were identified in Pit Groups V and VI, with hazel generally dominant except in the burnt deposit (6065) over pit 6044, where oak was dominant and pine was also present. Hazel charcoal was found in Pit Group VII, both in the main cluster of pits and in outlying pit 3146. The dominance of hazel charcoal suggests fuel wood rather than burnt timber.

Burnt hazelnut shells were common in all the pit groups, sometimes in large quantities (e.g. Pit Group IV – pit 4020, Pit Group V – pit 4133, Pit Group VI – pits 6044 and 6087, Pit Group VIII – pits 1305 and 1309). In contrast charred cereal grains are very rare, with traces of cereal grains in just three deposits. Of the later Neolithic pit groups only pit 4012 in Pit Group II produced grains, one charred barley grain and one unidentifiable cereal grain. Pit Group VII (dated to the Bronze Age, see below) also produced a very small number of charred cereal grains; one barley grain came from pit 3139 and a barley and a wheat grain from pit 3143.

### **Dates**

As discussed above the Neolithic pits were divided into eight fairly well-defined groups. In these there were a total of up to 36 pits, depending on interpretation, of which 25 contained pottery and 26 had suitable samples for dating, most but not all of those with pottery had suitable samples. A large number of dates could, therefore, have been obtained on the pits but dates are expensive to obtain and need to be chosen judiciously. The samples to be dated were selected to fulfil specific research aims. The two main aims in dating of the pit groups were to establish the intrasite chronology and allow extrasite comparisons.

Pottery can be used as a dating tool, so pits containing the same pottery types might be compared. The dating of Neolithic pottery in Wales is, however, insufficiently precise for this to be used alone. It required calibration by dating the use of particular pottery styles on the current site. Samples were therefore selected for dating from examples of each pottery type.

It is argued from the close physical association of the pits within the groups, and their isolation from other activity, that the pits within each group were roughly contemporary. This is generally supported by the presence of the same pottery style within pits belonging to a single group. There were, however, certain features within the groups that may not have been contemporary. Pit Group I contained two features (1011 and 1094) that did not contain pottery. Physically these varied from the other pits and they lacked both the artefact and ecofact assemblages, making them unconvincing as part of the pit group. Pit 4027, included in Pit Group V, contained no finds but had other characteristics of these pits. Unfortunately the potential significance of this feature was only realised after excavation and no sample was taken. The different pottery styles from Pit Group VI strongly suggested that not all the pits were contemporary and that this would be worth exploring with radiocarbon dates. There was also significant doubt about the contemporaneity of the pits in Pit Group VIII, where the proximity of the Early Neolithic building make it possible that some of the pits were of earlier date. There were six pits in this group, though one seems to have been recut. These pits were arranged in an oval, slightly

separated from other features in the area. One pit produced Grooved Ware, one contained small amounts of Early Neolithic pottery, which could have been residual, and one contained crumbs of unidentifiable pottery. Pit Group VII presented a particular problem as it produced few datable artefacts, and it was not known if these were from the same general period as the rest of the pit groups. Radiocarbon dates were necessary to establish this and test the contemporaneity of the pits. Samples were therefore also chosen to clarify problems of contemporaneity within pit groups.

The value of the dates for intersite comparison was in contributing to the understanding of the period over which Peterborough and Grooved Ware pottery was used in Wales. The size of the assemblage and its location in the north-west of Wales makes it of particular importance. There are significant problems in trying to date the pottery by radiocarbon dates on charred plant material from the pit fills. As will be discussed below most authorities assume that the material in the pits was redeposited from an earlier holding deposit, such as a midden. The pit fills cannot, therefore, be assumed to be simple sealed deposits. Potentially the plant material could have been stored for centuries and the pottery deliberately made to deposit in the pit just before it was dug. The degree of mixing and contamination of the charred plant remains was tested by dating two independent samples from each pit dated. The comparison of dates from residues adhering to pottery with those less well associated can further elucidate the issue. Gibson (1994, 175) refers to a date from residue on a Fengate vessel from Horton, Middlesex, which confirmed the other six dates from the same context. On the present site a suitable residue deposit was found on a Fengate pot from pit 4133 in Pit Group V. This was dated to provide a comparison with the dates from other pits containing Fengate pottery. Although the exact sequence of deposition and original source of the material cannot be established if the dates are consistent it is reasonable to assume that the contents of the pits were deposited over a period short enough to be essentially contemporary within the coarse scale of radiocarbon dating.

Seventeen samples were submitted from the various late Neolithic pit groups (see appendix XVI for details and calibration plots). Pits distributed across the site were chosen with at least one pit containing each pottery type being represented. Additional pits without pottery were dated to test issues of contemporaneity. The results are listed in table 3 in relation to pottery type and compared to dates related to pottery from the Llandygai Industrial Estate excavations.

In most cases the two dates from each pit are statistically consistent indicating a lack of contamination or mixing and suggesting that whatever the origin of the material it was all of roughly the same date. The only exceptions are the dates from pit 6041 (Pit Group VI) and from pit 3155 (Pit Group VII). These do indicate some mixing and it is recommended that the youngest dates are tentatively used to provide a *terminus post quem* date for these pits. The implications of this will be discussed in more detail below. The date on the residue adhering to a Fengate sherd is statistically consistent with the dates from the other dated Fengate pit and indeed with the dates from the Mortlake pit. The consistency of the dates demonstrates that there is no detectable chronological difference between the different materials deposited in the pits and that the dates on the charred remains can be accepted as dates for the use of the pottery. The Peterborough pottery on the site can be considered to date to between 3360-3090 cal BC to 3330-2920 cal BC.

The similarity of the dates for Mortlake and Fengate Ware does not support a typological succession between these styles, but the large date ranges due to the plateau in the calibration curve could obscure such a succession. The dates on the Grooved Ware are clearly distinct from those on Peterborough Ware, even with the large date ranges.

Grooved Ware was dated in Pit Group VIII, where four consistent dates for activity in this pit group can be considered to date the pottery to between 2900-2670 cal BC and 2880-2580 cal BC. The other Grooved Ware on the site was found in Pit Group VI and this was less convincingly dated. The two dates from pit 6041 in Pit Group VI were completely different. The earliest date (3490-3120 cal BC (NZA-26680)) is very similar to the dates associated with Peterborough Ware. As pit 6072 nearby produced a similar date it is reasonable to assume that residual material from this activity was introduced into the fill of pit 6041. The later date of 2580-2460 cal BC (NZA-26681) can provisionally be accepted as the date of the pit and the pottery it contains but without further corroboration that this is the latest material in the pit it should be treated with some caution. However, Lynch (appendix II) believes that the pottery is most likely to be of Durrington Wall style Grooved Ware and the date falls within the range for this style.

The dates from Pit Group VI confirmed that the presence of different pottery styles within the group indicated different periods of activity. This issue of contemporaneity of the pits within one group was further test in Pit Group VIII. The four dates from two pits in this group were statistically consistent, indicating that these two pits (1309 and 1553) were contemporary. The presence of Graig Lwyd flakes and flakes of similar stone in three of the pits (1305, 1553, and 1596) may also support their contemporaneity, the fragments of Early Neolithic pottery from pit 1305 presumably being residual.

Pit Group VII appeared to be anomalous compared to the other pit groups because of the scarcity of artefacts and the radiocarbon dates showed that the pits belonged to significantly different periods to the other groups. Outlying pit 3146 produced two consistent Early Neolithic dates (3650-3520 cal BC and 3640-3370 cal BC). The pottery found in the pit was on initial examination considered to be possibly Late Neolithic or Bronze Age (Lynch appendix II), but on reconsideration in light of the dates it was believed to be not inconsistent with Early Neolithic wares. The dates do suggest that there was no mixing or contamination and that this was a purely Early Neolithic deposit. It might be assumed that pit 3121 was of a similar date, but this was not radiocarbon dated and produced no finds. Pit 3146 most probably dates from after the Early Neolithic building was abandoned, and represents small scale, isolated Neolithic activity between the use of the building and the digging of the first pit groups.

The main cluster in Pit Group VII was created much later. The two dates from pit 3155 are not statistically consistent but they are quite similar and clearly represent Bronze Age activity. The dates from pit 3139 are statistically consistent and similar to those from 3155, giving a date of between 1980-1770 cal BC and 1750-1610 cal BC for the group. The pattern of pits on the ground suggests that they were roughly contemporary and the slight differences in radiocarbon dates are not enough to argue differently. Despite the later date the similarity of the layout of the pits and their fills to the earlier groups implies the same type of activity. The fragments of flint, pottery charcoal and burnt bone are suggestive of a deposit where midden soil complete with whatever fragments of rubbish it happened to contain was collected for deposition in the pits. The burnt stone could also indicate domestic cooking activities but there was not enough to suggest that the pits themselves were used for cooking.

## DISCUSSION OF THE PIT GROUPS

### Introduction

The contents and characteristics of the pit groups will be compared and conclusions drawn where possible. Comparisons will be made with Neolithic pit clusters within Wales and beyond and the more general issues will be discussed, particularly whether these pits can be interpreted as indicators of settlement.

### The form and layout of the pit clusters

The pit groups at the eastern end of the site (Groups I – V) had many features in common and they appear as a very coherent class of features. They were all sub-circular, no larger than 1m diameter and no deeper than 0.45m. Their original depth is difficult to determine as some have clearly been heavily truncated. Where preserved to sufficient depth they were generally steep sided. Those in Pit Group III were the deepest and could originally have been up to 0.6m deep from the contemporary ground surface. The numbers of pits in each group varied but never exceeded eight.

Despite their different landscape position the pits in Group VI seemed very similar to those on the eastern side of the site, being similar in size and shape. There were three distinct clusters within this general group and none exceed eight pits. Group VII was also composed of a main cluster and two outlying pits and both this and Group VIII contained pits not greater than 1m in length and 0.4m deep.

In most cases the pit groups were not randomly laid out but some or all of the pits formed specific patterns. Most of these patterns repeated themselves in more than one pit group. Pit Group I was the only group to have pits in a straight line. Here three pits, possibly four if 1011 is counted, were quite accurately aligned. In Groups III and IV and with the main pits in Group II three pits were located close together to form a triangle. Together all the pits in group II formed an elongated oval measuring *c.* 7.5m by 3.5m externally and 5.5m by 2m internally. Whether both clusters in this group should be seen together is not clear but other pits also seem to form sub-circular patterns. Small isolated clusters of pits are typical of these features elsewhere (Manby 1999), with three pit clusters being common on Rudston Wold in association with Peterborough Ware (Harding 2006).

If all seven features in the main cluster of Group VI are accepted as pits of some sort it can be seen that they were laid out in a rough oval measuring *c.* 5.8m by 4m, with 6055 close to the centre. While none of the pits in this group can be securely identified as postholes the stones in 6044 make this a possibility. Feature 6061 might also be better interpreted as a large stakehole rather than a very small pit. The oval shape made by the six pits in this area is suggestive of a structure. However, it would be a very small one as the internal dimensions would be *c.* 4m by 2.5m, and most of the features seem rather large to be postholes for such a small structure. However, it may be wrong to think in terms of a small roofed shelter; the structure could have been more monumental in nature and unroofed. Although it must also be remembered that only four features were entirely convincing as deliberate cut features. The intentional nature of this sub-circular layout is supported by the plans of other pit groups on the



site. The six pits of group VIII were arranged in a rough oval measuring 3.8m by 3.3m externally and about 2m diameter internally. In this case there was no central feature and these features were clearly pits and not postholes.

The five pits in the main cluster in group VII lay on a rough circle around a burnt patch, with an external diameter of *c.* 4m and an internal diameter of *c.* 2.5m. Although pit 3155 did contain large cobbles, there is no evidence that any of these features were postholes and the large stone across the middle of 3139 strongly argues that this was not a posthole. This group, therefore, seems to offer clear evidence for a rough ring of pits around a fire site or hearth. The dating of one of the outlying pits (3146) to the Early Neolithic shows that these outliers were not part of the main group. They may have been related to some of the burnt patches in the area but no other Early Neolithic finds were recovered.

The majority of the evidence suggests that none of these features were postholes and that the groups represent not structures, whether roofed or not, but a deliberate layout of pits. These pits were presumably dug either together or within a fairly short space of time, when the location of previous pits could still be detected. It seems significant that all the pit groups with an oval layout have Grooved Ware pottery or are later. The exception is Pit Group II, but this has more in common with the triple pit clusters typical of the Peterborough Ware groups. It is possible that the cluster patterns do have chronological significance. The continuation of apparently similar practices into the Bronze Age is suggested by Pit Group VII.

### **The fills and their contents**

#### ***Fills***

There were some significant differences in the way in which the pits were filled. In Pit Groups I and II all the pits had single fills with no evidence of erosion of the pit sides before filling. With the possible exception of 1094 in Pit Group I there was no evidence at all for post-packing stones or any other suggestion that these may have been postholes rather than pits. Although some pits in the other groups had fairly large stones none were positioned to act as post-packing stones. In fact they tended to be on the bottom of the cut or in the middle of the fill just where a post might be expected to have stood.

Pit 4062, in Pit Group III, was difficult to interpret but the evidence suggested two pit-digging and rapid filling events occurring sequentially in exactly the same place. Lenses of charcoal and sand in pit 4069 could suggest a more gradual process of filling although there was no evidence of weathering of the sides. Pit 4092 seems to have been rapidly backfilled with a single fill containing a large part of one vessel.

In contrast in Pit Group IV all the pits had evidence of weathering of their sides, suggesting they had been dug and then left open for some time before filling. A deposit of burnt material was placed in the top of 4109 after it had been largely infilled. Possibly, like 4062, the pit was redug to receive the new deposit. Burnt material had been placed in the bottom of 4103 and then the rest of the pit was infilled with other material. With the exception of some weathering 4100 had a single undifferentiated fill. Pit 4133 had burnt material deposited in it, a large stone was placed on this deposit and then the pit was infilled. Pit 4127 seems to fit the same pattern of burnt material being rapidly dumped in a small pit, although in this case no artefactual material was included with the burnt stones.

In Pit Group VI two of the Peterborough Ware pits (6034 and 6087) were simple pits with homogenous fills. Pit 6072 was more complex. It had been neatly dug to be nearly circular and was possibly redug in the same place but to a smaller size, roughly lined with stones and had quantities of pottery deposited in it. In Pit Group VII most of the fills were homogenous with no evidence of erosion of the pit sides before deposition. Pit 3143 did have three fills with a charcoal-rich deposit in the base, but this is similar to the deposition patterns in Pit Group IV. The Early Neolithic pit (3146) in this group was indistinguishable from the others in its shape and fill. Although it was dug into soft sub-soil there was no erosion of the sides and its fill was homogenous.

The pits in Group VIII showed some complexity in their fills. Pit 1553 seemed to have been filled rapidly in a single event, with pottery mixed throughout the fill, but pit 1309 had three identifiable fills. The most complex was 1596, which seemed to have been left open for long enough for the sides to start collapsing. It may have had a recut, which was filled by several discrete lenses, many associated with burning. This feature was filled sequentially unlike most of the other Neolithic pits on the site, but the deposition of these different fills could still have been over a short period of time.

The placing of stones in the fills seems to have been of some importance. Pit 4133 in Pit Group V had a stone over the main concentration of pottery, pit 4109 (PGIII) had a heavily burnt hearth stone in its upper fill, and pit 3139 had a large stone sloping across its width. Pits 4062 (PGIII) and 6072 (PGVI) each had a large stone in the middle blocking what might otherwise be interpreted as postpipes. These large stones seem to have been carefully placed within the pits as part of a sequence of



deposition. Several pits in the Llandygai henges featured material sealed beneath stones (e.g. pit FA 370, FB 39 and FB 147 (Lynch 2001)).

In summary the differences in fills are perhaps not so great. Soil, including burnt material and artefacts, was dumped in a small pit generally soon after the pit was dug but occasionally the pit was left open before the deposition. The dumping event seems to have been a rapid single event but there were occasionally subsequent dumping events into the redug pit.

### ***Finds***

All the pit groups had similarities in the range and type of finds they contained, this includes Pit Group VII with pits dating both much earlier and later than the other groups. They almost always contained some burnt material although none showed signs of *in situ* burning. Nearly all contained prehistoric finds of some sort and many had later Neolithic pottery. Even within a single group some pits had many sherds and some very few. However, in general where there were many sherds they came from a single vessel, so there were rarely more than three vessels represented per pit. Where large pieces of single vessels were present there was some evidence that these had been carefully placed and the pieces of pot might have been specially selected. The smaller pieces were more likely to have been included incidentally. The residue analysis suggests that several of the vessels were used for cooking or containing foods. Unfortunately it is not possible to be certain whether one of the Grooved Ware pots in Pit Group VIII had contained beeswax but this is a possibility. It does seem that the pots were not made specifically to be buried unused, but it cannot be determined whether the food they contained was used in a purely domestic or ceremonial context.

The flint assemblages include waste, broken, burnt and previously used pieces, so it is difficult to see them as specially selected items. The scarcity of retouched pieces and quantity of microdebitage suggests the inclusion of domestic debris. However, the lack of complete knapping sequences, most noticeable in pit 6041 where the microdebitage and the larger pieces were of different flint types, suggests that only very partial samples of the domestic debris found their way into the pits. The fine flint pieces in this pit may have been specially selected for inclusion. The absence of arrowheads from the pit groups seems to be significant since oblique or transverse arrowheads are a typical occurrence on classic Grooved Ware sites, such as Woodhenge or Fengate.

Burnt stones are most commonly discussed in relation to burnt mounds, but features on the present site demonstrate that heat-cracked stones could be produced by other methods. The pit ovens (discussed below) are a notable example but burnt stones were also common in the later Neolithic pits. Burnt or heat-cracked stones are specifically mentioned in the descriptions of four out of the seven pits in Group I (and in pit 1011 which may be related to this group), three out of eight pits in Group II, all three pits in group IV, one out of two pits in Group V, three out of seven pits in the main cluster of Group VI, and four of the seven pits in Group VII, including the Early Neolithic pit (3146). No burnt stones are recorded in Groups III and VIII. The quantity of burnt stones per pit is not sufficient to argue that the activity causing the stones to crack took place in the pits. With the exception of Group VII, there were no potential hearths close to the pits on which stones could be heated. The evidence suggests that, wherever the material deposited in the pits originated, some activity producing burnt stones was being carried out. The significance of the lack of burnt stones from Pit Groups III and VIII is difficult to determine.

The assemblages of charred plant remains did not contribute greatly to the understanding of the pits as it consisted largely of unidentifiable charcoal. All the pits contained charcoal, except pit 1586 in Pit Group VIII. This pit group in general had less charcoal than most, although it contained numerous charred hazelnut shell fragments. Charred hazelnut shells were generally very common, although less so in Pit Group VII, which also had relatively little charcoal. It is probable that the hazelnut shells originated from the practice of throwing nutshells on domestic fires to dispose of the waste. The hazel charcoal, which predominated amongst the identifiable pieces, was probably fuel wood. The rarity of cereal grains in the Peterbrough and Grooved ware pits suggests that the two examples (one unidentifiable and one of barley) from pit 4012 in Pit Group II might have been intrusive, and that cereals were not directly connected to the pit filling activity. Some grain also came from two pits in Pit Group VII, one grain of barley from pit 3139 and one barley and one wheat grain from pit 3143. These possibly indicate a closer link between the pits and grain processing in this later period. Burnt bone was present in very small quantities but quite widely distributed. None was recovered from Pit Groups III, VI, and VIII, but the other groups had burnt bone in at least one pit and in Pit Group VII it was present in four pits and one of the burnt patches, but not in the Early Neolithic pit (3146).

Overall there were significant differences between the pit groups in the pottery and other materials they contained. The pottery styles were strictly separated between groups; in the rare occasions where there was admixture the extraneous sherds were small and almost certainly residual or intrusive.

Mortlake pottery was only found in Pit Group I, Fengate was from Groups II to V and the outlying pits in Group VI, and Grooved Ware was recovered from the main cluster in Group VI and from Group VIII. Although most of the pits had evidence for flint knapping significant numbers of Graig Lwyd flakes came only from Pit Groups I and VIII. Most of the flint used was local pebble flint but Pit Group VI contained fine imported flint. The fine brown flint from pit 6041 came from chalk deposits and must have been exchanged over a very considerable distance. This pit contained Grooved Ware and the flint suggests different social contacts perhaps linked to the use of Grooved Ware. It is probable that these differences in the assemblages have a chronological significance.

### ***Conclusion***

The presence in the Parc Bryn Cegin pit groups of charcoal, other charred plant, burnt animal bone fragments and burnt stone suggests an origin for this material in domestic activities. Pottery fragments and flint knapping debitage supports this interpretation. The inclusion of very small items suggests the bulk collection of already mixed material from a deposit resembling a midden. However, the extent to which the pits also contained special objects should be considered. The pottery could certainly be considered as such, although it could equally be part of a midden deposit. Where small fragments of several vessels were present this does suggest material that had been discarded and mixed through the holding deposit before being finally deposited in the pit. In the case of some pits containing large parts of a single vessel, e.g. pit 1052 in Pit Group I and 4133 in Pit Group V, it seems more likely that these big sherds were specially selected, or even deliberately created by breaking a pot. However, they could still have been the latest material deposited on the midden and so not yet further fragmented. The flint in pit 6041, Pit Group VI, was fine imported material with a high proportion of tools. The flint debitage recovered by wet sieving was generally not of the same material so it can be assumed that specific fine pieces were selected for inclusion. However in other pits there were few flint tools and the presence of debitage suggested the bulk collection of a waste deposit. The occasional Graig Lwyd flakes in most pit groups may be considered in the same way, with the exception of Pit Group I, which contained 36 flakes. These seem to be the product of breaking down polished axes and the quantity in these pits suggests that this material was specially chosen for inclusion. It is possible that axes were broken down purely for the purpose of burying their flakes.

The impression is that the bulk of the material deliberately deposited in the pits was from some sort of midden deposit. There was no evidence that this had accumulated close to the pits, except in the case of Pit Group VII, where there were fire sites that could have produced the burnt material. The provenance of this material must, therefore, remain unknown. Added to this some specific items seem to have been selected for inclusion, but it is not clear whether they were picked out of the midden deposit or acquired from elsewhere.

Although the quantity of finds from Pit Group VII was less than elsewhere the character of the fills and finds from both the Early Neolithic pit and the Bronze Age pits in this group suggests similar midden-like material was deposited in pits over a very long period. The placing of large pieces of both Peterborough and Grooved Ware pottery in several pits showed that this specific practice was common to both the Middle and Late Neolithic.

### **The function and significance of Neolithic pit clusters**

The English Heritage Thesaurus defines 'pit cluster' as "A spatially discrete group of pits usually containing artefactual material, especially pottery, with little or no accompanying evidence for structural features. Use only for Neolithic and Bronze Age monuments." This definition separates this site type from pits found on settlement sites or with other features and applies perfectly to the pit groups under discussion. Whether these pit groups can be seen as isolated or representing truncated remains of settlements is difficult to determine. Previously such pits have been assumed to be indicators of settlement and compared to Iron Age storage pits (Smith 1964). However, Thomas (1991, 59) pointed out that the Neolithic pits are very different to the Iron Age examples, and are unsuited to storage being 'almost universally shallow, bowl-shaped forms' (Thomas 1991, 62). Thomas (1999, 68-9) describes the characteristic features of Neolithic pits: they are backfilled soon after digging, contain burnt material, and the pots they contain are mostly broken, rarely whole vessels. Unusual and high value items can be included, there is often a high tool to waste ratio in the lithic assemblages and they can include fragments of human bone. Case (1973) was one of the first to suggest a ritual function for such pits and most recent writers follow his original ideas.

It is now widely thought that these pits represent "structured deposition" (Gibson 2003, 141) or "purposeful filling" (Edmonds 1999, 18). 'Structured deposition' is generally characterised as formalised, repetitive behaviour resulting in a high degree of deliberation in the deposition pattern, which is indicative of ritual activity (Chapman 2000, 61). However, Chapman (2000, 61) points out

that domestic activity can also include ritual ideas such as purity and taboo and can also result in structured deposits. In many cases it is not possible to identify purely ritual activity from purely domestic because the distinction was not made when the activity was carried out.

Although some items may have been specially selected for inclusion in most cases the deposits in these pits resemble the mixed deposit of a midden. It is argued that modern ideas of 'rubbish' are not applicable (e.g. Chapman 2000, 61), and the burying of these deposits in pits related not to disposal but to ritual activity. At Goodland, County Antrim, Case (1973) argued that these deposits were related to fertility rituals and Garrow *et al* (2005) considered that while the pits may be broadly indicative of settlement in an area they have a primarily ritual character.

Although these pits have been excavated and studied all over the country there is one particular site that will probably become the classic site of this monument type and deserves close comparison to the Parc Bryn Cegin evidence. This site was excavated recently at Kilverstone near Thetford, Norfolk (Garrow *et al* 2005). At Kilverstone 236 earlier Neolithic pits were found and this may just be part of much larger site (*ibid.*, 140). Although the scale was much larger than the maximum of 36 pits in eight groups at Parc Bryn Cegin the detailed descriptions were remarkably similar. The pits were circular or oval, on average 0.7m diameter and 0.23m deep, with steep sides and clean shapes despite being dug in to sand (*ibid.*, 141). Most had only one fill, none had more than three fills, suggesting rapid filling of the pits soon after they were dug. Most pits were clustered into groups but some were single. Some pits were intercutting but the pits in many groups formed definite shapes with little intercutting.

The excavators did not feel that the contents could be interpreted as structured deposition as there was no impression of the finds having been being placed. There was not one whole pot or complete flint working sequence. Some finds had been altered by burning and weathering. Tiny chips of flint and charcoal adhering to pots showed material has been swept up wholesale and the general impression was of dumps of cultural material in soil matrix i.e. domestic rubbish/midden deposits (Garrow *et al* 2005, 144). The quantity of finds varied between groups and pits within a group. All these points apply equally to Parc Bryn Cegin and it can only be concluded that the same activity was being carried out on both sites but in a rather more dispersed way at Parc Bryn Cegin.

For Kilverstone it was argued that the material accumulated elsewhere before being deposited in the pits and that pits containing few artefacts were filled when the source deposit was poor in artefacts, suggesting that it was the deposit itself not the artefacts as such that was important. The source deposit was seen essentially as a domestic midden related to settlement activity but this was assumed to be some distance from the pit groups. The groups themselves seemed too small to have been dug around a dwelling, although it possible that they could have been inside one. The conclusion reached was that these pits were related to the ritual burial of midden material, the ritual presumably being directly chronologically related to settlement events, although how the pits and the middens were physically related is unknown. The authors preferred to see the large number of pit clusters as representing repeated visits by a group, who created a pit cluster at each visit. This indirect settlement evidence is tantalising as it still fails to identify the location of the settlements. Harding (2006), however, argues that the digging and filling of pits was part of everyday activity on an occupation site and not physically or temporally removed from settlement.

While the occupation activity associated with these pit clusters involved cooking, pottery use and tool making that does not necessarily prove that it was everyday settlement. Pits with similar forms and contents occur in close association with various monument types, the nearest example being the pits with Peterborough Ware and possible Grooved Ware in the Llandygai henges (Lynch and Musson 2001). In the Upper Thames region Barclay (1999, 20) discusses the restriction of pits with Grooved Ware to 'specific locations within in an organised landscape', with a focus on monuments including those of earlier periods. Harding (2006) discusses the possibility of an association late in the Neolithic between pit clusters and feasting, with concentrations of these pits indicating sites of aggregation rather than everyday settlement, reflecting the use of pits at causewayed camps (Pryor 2004). The pits can also contain cremated human remains as with pit FA370 in Llandygai henge A and the pits in area A at Llanilar (Briggs 2000).

At Parc Bryn Cegin many of the pit clusters were distributed along the ridge overlooking the henges on the plateau below. While they could represent settlement at a prescribed distance from the ceremonial complex they could more directly refer to the complex. Pollen in a Neolithic buried soil horizon under the bank at Llandygai henge A showed that the site was built in open country, probably on pastureland (Dimpleby 2001). 'Major deforestation' was dated to 4255±50 BP (3020-2670 cal BC) in a pollen core from Nant Ffrancon (Hibbert and Switsur 1976), so it is reasonable to imagine the area around the henge complex to have been cleared at this date. The activity related to the pit groups could, therefore, have taken place while literally overlooking the henges. Pit Group VI was lower lying but it

was closer to henge B and it is likely that the banks of this henge would have been visible from the pit group.

Henge A is dated by the cremation circle and other pits on its central alignment, which suggest a date of roughly 3300-2900 cal BC. There was very little evidence, except for an Early Bronze Age cremation for the extended use of this henge. The henge A dates correspond closely with the dates on Peterborough Ware pits at Parc Bryn Cegin. Lynch (2001, 76) admits that the date of construction of henge B is not known. Pit FB39 within the henge contained large pieces of a Mortlake Ware vessel and pits FB151 and FB147 produced dates contemporary with the Parc Bryn Cegin Grooved Ware pits. The latter pit contained parts of a flat-bottomed vessel resembling Grooved Ware. However, cremation pits on the axial line of the monument (pits FB2 and FB138) were later. If the date on cremated bone from FB138 is used as a guide, supported by the more problematic dates on mature oak from FB2 and other pits in the middle of the henge a date of 2300-1900 cal BC might be suggested for the construction of the henge. The earlier pits might, therefore, be isolated pits or small pit groups very similar to those on Parc Bryn Cegin. Even if the henge did pre-date these earlier pits the deposition within them is very similar to the Parc Bryn Cegin pits, with large pieces of pottery being deposited with charred material, burnt stones and a few flints. The high-quality flint flakes from pit FB147 are reminiscent of those in pit 6041 in Pit Group VI, which also had Grooved Ware. This same tradition of depositing partial pots in pits continued into the Early Bronze Age, when three Beakers were buried in pits. One of these pots was associated with charred oak planks, which were also found in other pits in the middle of henge B and in the cremation circle in henge A.

Polished axes seem to have been a feature of the pits in the henges, with an axe polisher in the cremation pit FA370 and an unused Langdale axe in pit FA536, but most relevant is pit FB151. This contained a broken Graig Lwyd axe and flakes of the same rock, some with polished surfaces. These flakes suggest the same axe reduction process as seen in Pit Group I and in a smaller way in Pit Group VIII, the latter being of a similar date to pit FB151. The Parc Bryn Cegin pit groups, therefore, not only overlooked the henges but similar practices were being carried out in the pits groups and in and around the henges. The presence of cremation seems to be restricted to the henges and deposits were not associated with oak planks at Parc Bryn Cegin but other activities were closely comparable.

The presence of Pit Group VIII with its Grooved Ware next to the site of the Early Neolithic building raises the possibility of this being a Grooved Ware deposit deliberately referring to an earlier monument. The stripping and cleaning of the area around the Early Neolithic building proved that Pit Group VIII was isolated from other Late Neolithic activity, and that this group of pits seemed to have been deliberately placed close to the site of the earlier building. With potentially 1000 years between the use of the building and the digging of the pits it is difficult to imagine what may have marked this spot as special. However, we can only speculate about the nature of contemporary field boundaries. It is probable that the building was in a small clearing in woodland and such clearing could be maintained for a long period of time (Edmonds 1999, 24-26). Even if the clearing became over grown it is possible that the character of the regenerated woodland remained noticeably different. Other Neolithic rectangular timber structures have been associated with pits containing Grooved Ware, such as at Yarnton (Hey forthcoming) and Littleour (Barclay and Maxwell 1998), and at Chigborough (Adkins and Adkins 1991) where both Peterborough Ware and Grooved Ware were found in pits near the structure.

It has been suggested (George Smith pers. com.) that the shallow pits (1584 and 1586) were in fact a single elongated hole that held a stone. Such a standing stone would have been directly opposite the proposed door of the building, and may have stood for millennia after the building was demolished, so explaining the positioning of the later pits. The excavated evidence prevents a reinterpretation of these two pits as a single feature but does not exclude their sequential function as supports for a small stone, which was perhaps knocked over and had to be re-erected. This might explain the scarcity of artefacts from these features, particularly 1586, which did not even contain charcoal.

In summary it appears that the Parc Bryn Cegin pit groups were associated with occupation activity but the physical relationship between the occupation site and the pits remains unknown. The nature of the occupation and the significance of digging the pits are also uncertain. The occupation might have been of an everyday domestic nature and the pits related to domestic rituals, but the proximity of the henges imply a more specialist function. It is possible to envisage private ceremonies involving small scale feasting occurring on the ridge overlooking the public ceremonies in the henges.

## **Comparisons with other Welsh sites**

### ***Pottery***

The Parc Bryn Cegin pit groups are important because of their large pottery assemblage. Gibson (1995, 36-37) lists 30 sites from Wales which have produced Peterborough Ware. His map (p25) shows that



the majority of these sites are down the eastern side of the country with very few in the west, although there are four on Anglesey. To the Anglesey corpus can be added Capel Eithin (Gaerwen) (White and Smith 1999), Cefn Du (Gaerwen), Penymynydd (Caergeliog) and Ty Mawr (Holyhead) (Davidson *et al* forthcoming). There is also the decorated bowl from Glyn, Llanbedrgoch (Redknap 2003). The shape of the bowl is unusual but Lynch considers that the decoration places it within the Peterborough tradition (Lynch pers. comm.). On the mainland Peterborough Ware was recovered from the henges at Llandygai (Lynch and Musson 2001). Grooved Ware is rare from Wales and Longworth and Cleal (1999) were only able to list eight sites with Grooved Ware and one with possible Grooved Ware in the whole of Wales. In addition there is some Grooved Ware from Upper Ninepence, Walton and possible Grooved Ware from Llandygai henge B and Cefn Du. This distribution means that any new finds of Peterborough Ware in the west are of importance and Grooved Ware is even more significant.

On many of the sites mentioned both pot types are represented by only a few small sherds. An assemblage of the size of that at Parc Bryn Cegin is likely to become a focus for future research and a major resource for comparative material. Its use can already be demonstrated in that Lynch (pers. com.) believes that the assemblage from Parc Bryn Cegin allows the reassessment of the sherds from Hendre (Flintshire) (Brassil and Gibson 1999, 94) and some of the sherds from the Walton Basin (Gibson 1999a) as Peterborough Ware rather than Grooved Ware.

The Parc Bryn Cegin dates fit very well with other dates on Peterborough and Grooved Ware in Wales (see table 4 and figure 35) and may be taken to clarify the trend of Peterborough Ware rarely occurring after 2900 cal BC and Grooved Ware rarely before that date. The similarity of the dates on the residues from pots at Parc Bryn Cegin and Brynderwen to each other and to dates from charred plant material confirms the date for Peterborough ware and suggests that charred remains from pit fills are giving reliable dates for the pottery. The dates for the Grooved Ware pottery from Pit Group VIII closely compare to other dates on this pottery, especially from Upper Ninepence. The later date from pit 6041 in Pit Group VI is not out of the range of other sites, but falls at the later end of this range.

### ***Pit clusters***

Other Neolithic pit clusters in Wales provide some comparisons for the Parc Bryn Cegin examples. The seven pits forming a circle *c.* 3m in diameter found at Sarn-y-bryn-caled, Powys (Blockley 1999) resemble the layout of Pit Groups VI, VII and VIII. At Glandy Cross, Carmarthenshire were two similar, though slightly larger pit circles, one with a central hearth (Williams 1992, Kirk and Williams 2000). Both pit circles were Early Bronze Age in date and although one had cremations and an urn they provide quite good parallels for Pit Group VII on Parc Bryn Cegin.

The deposition of large sherds of a single vessel in a pit is best paralleled at Glyn, Llanbedrgoch, Anglesey, where large parts of a broken bowl, apparently of the Peterborough tradition, were deposited in a pit (Redknap 1996; 2000; 2003, 160-161). Pits on this site as well as most of the others contained flint, charred plant remains and burnt bone as well as pottery. Like Parc Bryn Cegin charred hazelnuts were common in pits on many of these sites, but small numbers of cereal grains have also been found. Pit groups at Llanilar, Ceredigion (Briggs 2000), Capel Eithin, Anglesey (White and Smith 1999), Hendre, Flintshire (Brassil and Gibson 1999), Upper Ninepence, Powys (Gibson 1999a) and Llanbedrgoch all produced quantities of charred hazelnut shells but limited evidence for cereals. There were a few grains of wheat at Llanilar, charred grains, mainly barley at Capel Eithin, and a single possible cereal grain from Hendre. From the Peterborough Ware pits at Upper Ninepence there was emmer and other wheat and weed species of grassland and cultivation, but few cereal grains from the Grooved Ware pits.

Fine flint, probably imported from England, was found in the pits at Hendre. This can be compared to the fine flint in pit 6041, Pit Group VI at Parc Bryn Cegin, and to the flint from pit FB147 just outside Llandygai henge B (Lynch 2001). At Llanilar (Briggs 2000, 19) some deposits were sealed by placing a stone on them in the same way as several pits at Parc Bryn Cegin and in pits in the Llandygai henges. The presence of a fragment of a stone axe as a surface find at Fronddyrys, Radnorshire (Pye 1975, 1976) might be of significance in relation to the axe reduction seen in some of the pits at Llandygai.

Few of the pits were isolated in the same way as the Parc Bryn Cegin pit groups. The pits at Hendre were the most isolated, but they focused on a natural mound closely resembling a barrow and were associated with a later cremation, perhaps the mound was mistaken for a barrow in antiquity and this should be seen as a monumental site. The pits at Llanilar contained burnt human bone. Briggs (2000, 23) concluded that these were probably Early Bronze Age cremation pits with residual Neolithic pottery. However, there seems to be little to support this. The quantity of human bone was small and it is possible that these were midden-like deposits that contained human bone from funerary activities at their source. The presence of sherds of one vessel in several pits, like at Kilverstone, could also support



this interpretation. However, the hearths associated with the pits at Llanilar make this site similar to Pit Group VII, which was Bronze Age. The Neolithic cremations from Llandygai henge A (Lynch 2001) demonstrate there is no reason to doubt that the Llanilar examples could have been Neolithic.

The pit circles at Glandy Cross, Carmarthenshire were more obviously associated with monuments as one was in the end of a linear embanked enclosure and the other next to a pair of standing stones (Williams 1992, Kirk and Williams 2000). The pits at Brynderwin, Abermule, Powys (Gibson and Musson 1990) were inside a rectangular enclosure but the relationship between them and the enclosure was not established. Two pits containing Peterborough Ware have been recently found under the henge at Dyffryn Lane, Berriew, Powys (Gibson and Britnell 2006, Gibson pers. com.). The pits at Sarn-y-Bryn-Caled, Powys (Gibson 1994) were also close to monuments and those at Capel Eithin and Trelystan were under cairns. Although the Late Neolithic activity at Trelystan, Powys (Britnell 1982) included two house-like structures there was also a Late Neolithic grave pit, so it may be simplistic to call this a purely domestic site. However, several sites did have settlement evidence. Llanilar, Trelystan and Capel Eithin can also be interpreted as at least partially domestic settlement. The site at Cefn Bryn, Glamorgan (Ward 1987) is described as a settlement, although also sealed under a cairn and those at Cefn Du (S5), Anglesey (Cutler forthcoming) and Fronddyrys are also probably settlements, although there are few details on the latter. Cwm Meudwy, Llandysul, Ceredigion (Murphy and Evans 2006) may be an example of numerous ritual pits with little firm settlement evidence. Most of the pits seemed to date from the Early Neolithic but there were a few sherds of later Neolithic pottery.

Upper Ninepence, Walton provides the best example of a settlement site with pits. Although Gibson (1999a, 77) concludes that the material deposited in the pits was a domestic assemblage this does seem to have been selected from a holding deposit elsewhere. Fine, possibly imported flint was used and large pieces of Grooved Ware vessels were deposited. The Peterborough Ware pits may not have been associated with settlement but the Grooved Ware ones were related to circular stake-walled structures and hearths. This site does suggest a very direct relationship between Neolithic pits containing pottery and other deposits with settlement, but the other sites imply a relationship with funerary ritual and monuments. The situation of the pit groups at Parc Bryn Cegin mean that either, or more probably both, interpretations might apply.

## BURNT MOUNDS

(by Roland Flook and Jane Kenney)

### Introduction

Scattered across the site were 16 significant spreads or mounds of burnt stone of varying dimensions and depth (Figs 2, 5 and 6). Most of these had at least one associated pit or trough and these too varied in size and shape. The majority of the mounds were situated either on the wet, clayey, lower parts of the site or along a natural boundary in the geology where the ground water was close to the surface. Few artefacts were recovered. The sites described below are identified by the context number for the main mound deposit.

### The eastern group

(Fig. 5)

The largest and best preserved burnt mounds were concentrated in the eastern part of the site, just below the ridge. Five (1097, 2176, 2031, 2287, 2167) were located close together along the base of a slight scarp, which indicated a natural boundary in the geology. The sixth (4199) occurred as a single isolated site over 200m to the south-west, but apparently still on the same geological boundary. In trenches 1 and 2 immediately to the west of the scarp was a shallow channel filled with grey gleyed silt (1187/2172) containing some stones and up to 0.35m thick, which overlapped the mound deposits. The silt demonstrated that the channel had held standing water in the past and it was very wet during excavation. The position of the mounds at the base of the slope also helped to preserve them as a greater depth of colluvium had built up here than was found elsewhere on site, protecting the archaeology from plough damage.

### Description

#### *Mound 2167*

(Figs 36 and 37)

Mound 2167 was the most northerly of the dense group of burnt mounds (NGR 59573 70566, 57m OD). It was not fully excavated as part of its extent fell outside the area of excavation. The mound (2167) comprised an irregular stone spread, 9m by 8m by 0.15m thick, consisting of dark grey silty loam containing 70% fire cracked stones, and frequent charcoal fragments. This deposit overlay the top fill of pit 2175, which was located towards the south-western edge of the stone spread. The pit 2175 was sub-circular in plan measuring 1.2m in diameter and 0.23m deep. The primary fill was a thin lens (0.01m thick) of reddish brown clay loam containing frequent grit that covered the base of the pit. This was sealed by the main fill containing 70% burnt and fire cracked stones and frequent charcoal flecks. Beneath the mound and cut by the pit was a mid-brown stony clay loam, which appeared to be a relict soil.

#### *Mound 2176*

(Figs 36, 38, 39, plates 11 and 12)

A large circular spread of fire shattered stone (2176) was found in the south-eastern corner of trench 2 (NGR 59558 70548, 57.5m OD). The mound sealed three pits, each with an adjacent hearth. The mound (2176) was 13m in diameter and up to 0.4m thick. It consisted of very dark brown sandy loam containing a dense concentration of fire-reddened and heat-shattered stones generally under 0.1m in size and making up 75% of the volume of the context. Two small patches of burnt stone (2293 and 2294) lay beyond the limits of the main mound.

Under the middle of the mound were three pits (2186, 2202, 2197). Pit 2186 was sub-circular and measured 1.3m by 1.12m by 0.52m deep. The bottom of the pit sides were undercut all the way around, by up to 0.15m in places, giving it a slightly bell-shaped profile. The base was flat and the pit was filled by a series of deposits of burnt stone and charcoal. Around the northern and western sides of the pit was a series of four stakeholes (2216, 2218, 2214, and 2220) forming a tight arc set close to the surviving cut edge. The stakeholes were sub-circular in plan and measured 0.07-0.09m in diameter and ranged from 0.08 to 0.11m deep. The fills were generally silty clay loam with occasional small stones and charcoal flecks. Immediately to the south-east of pit 2186 was hearth 2178, an elongated oval area of reddened, burnt sub-soil measuring 1.35m by 0.8m.

Adjacent to 2186 and 1.6m from it was 2202; a pear-shaped pit measuring 1.8m by 1.3m by 0.45m deep. It had a variable profile; to the north and west the cut had moderately sloping sides, while to the south and east it was undercut by as much as 0.12m. The primary fill was a thin lens of clay loam containing occasional small burnt stones and charcoal flecks, then a series of deposits had built up containing frequent burnt and fire-cracked stone. A sub-circular patch of reddened sub-soil (2245) 0.6m in diameter lay 0.45m to the south-east of 2202 and indicated the site of a fire.

The south-western edge of pit 2202 was clipped by a large, oval pit 2197. This measured 2.92m by 2.72m by 0.85m deep and had shallow edges sloping gently down to a deeper sub-rectangular cut in its base. This deeper cut measured 1.8m by 1.2m and 0.28m deep. Its sides were much steeper, near vertical in places, and it was flat bottomed. It was set back from the eastern end of the upper shallow cut and here a roughly triangular shaped platform or step had been excavated into the base of the shallow cut. This measured 0.4m by 0.9m and sloped down gently east-west towards the rectangular feature. In the rectangular cut, the basal fill was a mid grey silty clay containing frequent charcoal flecks and fragments, and only occasional burnt stones. The deposit showed signs of waterlogging. This was sealed by silty loam containing frequent heat shattered stone, with occasional charcoal, which extended over the platform/step. A thin layer of black silty clay sealed the burnt stone deposit over the step, and on top of which were laid three large flagstones. They were laid fairly flat forming a small paved area sloping down gently from east to west. The stones were closely set and measured up to 0.4m by 0.3m. The remainder of 2197 was then filled by a further series of deposits of heat shattered stones.

Immediately adjacent to the eastern end of 2197 was an elongated oval area of reddened burnt sub-soil (2212) oriented south-east to north-west, continuing the alignment of 2197. This hearth or fire site measured 1.67m by 1.25m by 0.05m deep. Above this was an ashy deposit comprising a black silty clay loam containing only occasional burnt stones.

Pit 2197 was surrounded by 26 possible stakeholes. It is possible to form them into several alternative patterns but perhaps the most convincing is the sequence 2229, 2268, 2266, 2252, 2246, 2239, and 2243. This describes an arc extending from the northern side of the feature around towards the south-west. All of the stakeholes were sub-circular in plan measuring 0.06m – 0.09m in diameter and 0.06 to 0.14m deep and appeared to have been vertically driven. Their fill was generally clay loam with very occasional small stones, grit, and in 2266 and 2268 very occasional charcoal. There was a small patch of burnt sub-soil (2211) under the north-eastern edge of burnt mound 2176.

#### *Mound 2031*

(Figs 36, 38, 39)

A linear spread of burnt stones (2031) lay 7m west of mound 2176 (NGR 59543 70556, 57m OD). The deposit was oriented north-south and continued south beyond the limit of excavation. It measured 16.5m long (up to the limit of excavation), 2.07m wide and was 0.2m thick. Deposit 2031 comprised a dark brown silty clay with frequent charcoal flecks, and small and medium cobbles, many fire-cracked and shattered. It filled a shallow natural hollow.

Two pits were identified, 2109 and 2149. Pit 2109 was a sub-square in plan and located immediately west of the mound. It measured 1.85m by 1.85m by 0.27m deep, and contained dark brown clayey silt with much fire-cracked stone and charcoal. Situated 4.5m to the south of 2109 and just sealed by the western edge of the mound was pit 2149. This was sub-rectangular and measured 1.5m by 1.3m by 0.45m deep. It had steep sides and a concave base, which became more irregular to the south. The main fill (2145) was a black sandy silt containing frequent heat fractured stone and charcoal. The boundaries of this fill were vertical, or near vertical, and stood away from the edges of the cut. The spaces between layer 2145 and the edges of the cut were filled by deposits 2147 and 2143/2144. These were orange brown silty sand deposits containing occasional burnt stone. Deposit 2144 showed signs of organic staining.

#### *Mound 2287*

(Figs 36, 38, 39)

Mound 2287 was discovered against the southern balk of trench 2 but was not fully exposed and much of the feature was beyond the limit of excavation (NGR 59547 70544, 57.5m OD). As excavated, the mound measured 6.46m long by 3.3m wide and comprised a dark grey to black silty loam containing frequent burnt and heat shattered stones making up 70-80% of the volume of the context. At its north-western end the mound sealed pit 2288. The pit was oval and measured 1.7m by 1.3m by 0.58m deep with moderately sloping sides and a flat bottom. It was filled by black silty loam containing frequent burnt stones comprising 80% of the volume of the context.

#### *Mound 1097*

(Fig. 40, plates 8 and 9)

Mound 1097 was a shallow crescent-shaped spread of heat-shattered stones located 25m south-west of 2287 (NGR 59543 70556, 58m OD). It was sited at the base of the same steeper scarp on which the mounds in trench 2 were located and on the eastern side of the same silt-filled channel.

Below the mound were patches of grey silt with iron-panning (1760 and 1765) that may have been the remains of a relict soil. Between these was a layer of yellow clay (1768), resembling redeposited boulder clay. The mound deposit (1097) formed a linear spread oriented north-east to south-west and measuring 11m by 5m by 0.2m thick. It consisted of concentrated angular fire-cracked stones mostly ranging in size from 0.03-0.07m with occasional to 0.1m, and frequent well dispersed flecks and fragments of charcoal. There was some evidence of stratification in the deposition of the mound material on its north-eastern side. Here the burnt stone and charcoal was interrupted by a 0.08m thick lens of light brown mixed silt and clay with little or no signs of burning and two small lenses of pink burnt clay.

Located centrally on the north-western edge and downslope of the mound was an elongated oval pit, oriented south-east to north-west (i.e. parallel to the slope of the hill). It measured 2.5m by 1.5m by 0.82m deep, and had been partially obscured by mound material. In profile, the pit sides were quite steep and the bottom was flat but sloped down significantly from south-east to north-west, so that the deepest part of the cut was at the extreme north-western end of the pit. The primary fill was a grey clay silt containing a large amount of charcoal and a small amount of burnt stone, which formed a thin deposit (0.08m thick) in the bottom of the pit. This was sealed by a greyish brown silt containing frequent angular fire-cracked stone, and then a series of grey silts, which contained almost no heat shattered stone or charcoal. The pit and the mound were sealed by layers of colluvium. On the east side of the pit was an area of reddened, burnt boulder clay (1720) forming a rather discontinuous band c. 2.3m wide. This was rather diffuse but indicated the site of a fire.

#### *Mound 4199*

(Fig. 41, plate 10)

Mound 4199 was located 210m south-west of mound 1097 at the base of a north-west facing slope (NGR 59358 70404, 61.5m OD). Although less well defined here the slope was a continuation of the scarp on which the other burnt mounds were located. Mound 4199 formed an irregular crescent-shaped spread of heat-cracked stone and charcoal in a black sandy silt, 4.8m by 2.7m by 0.13m thick. The crescent opened towards the east, upslope, where there was a circular pit (4208).

Pit 4208 measured 1.77m in diameter and 0.52m deep. It had steep nearly vertical sides and a flat bottom. The earliest fill was an orange sandy clay containing some charcoal flecks, which formed a wedge of material lying against the western edge of the cut. Above this was a sequence of sandy clays or clayey sands that contained evidence of burning in the form of heat shattered stone and charcoal in varying proportions. The upper-most fills were clayey sands and exhibited much less evidence of burning. The pit was finally sealed by an extensive layer of silty gravely sand, which also overlapped the mound deposits.

A retouched flint blade made on good quality flint was found in one of several small patches of burnt material (4210) probably eroded from the mound. The mound rested on a pale clayey deposit (4207), which in turn overlay the fills of a possible fluvio-glacial channel (4206).

#### *Other burnt stone features*

(Fig. 36)

Midway between the mounds 2176 and 2167 was another burnt stone spread (2292). This measured 6.75m by 3.15m, was 0.1m thick and comprised burnt stones in pale grey clay with relatively little charcoal. About 40m north-west of mound 2167 and adjacent to the north-eastern limit of excavation were located three thin spreads of burnt stone with little or no charcoal (2192). The largest was 6.43m by 2.72m by 0.05m and the stones seemed to be sitting directly on the natural. Much burnt stone was also identified in the nearby modern field drains and sumps in this area, which may have destroyed a pit related to this possible burnt mound.

Located midway between 2192 and 2167 was a sub-circular pit (2180) (Fig. 42), measuring 0.85m by 0.76m by 0.12m deep. It had gently sloping sides and a flat bottom. It was filled by greyish brown gritty silty loam containing occasional stones and a concentrated lens of charcoal.

#### ***Interpretation***

These features were generally typical of burnt mounds. The number of pits per mound varied from one to three, although the pit found under mound 2167 did not fit the usual characteristics for these features and the trough for this mound was probably outside the excavated area. Mound 2287 was also not fully excavated and could have had more than the single pit found or could have been the southern extension of the linear mound (2031). The thin and patchy burnt stones spreads (2192) to the north-east of the main group of mounds probably represented another mound more severely truncated by ploughing and confused by land drains. This almost certainly had an associated pit, but it was largely cut away by a

sump for the land drains. The sump was full of burnt stone and the quantity could only have come from digging through a pre-existing burnt mound trough. It was unclear whether the small pit 2180 was related to the burnt mound activity. It did not contain burnt stones, despite having a thick lens of charcoal and was some distance from any of the mounds.

The burnt mounds in this area were mostly fairly large but variable in shape. Although mound 4199 was small it was a classic horseshoe-shape and surrounded its pit without covering it. Mound 1097, although less well formed, did create a flattened arc around its pit. None of the mounds in trench 2 had this typical shape and, in most cases, their mounds entirely sealed their pits, probably because they had been flattened and spread out by ploughing. In mound 2176 the troughs were sealed under up to 0.4m of mound material, and yet, presumably when in use the mound surrounded the troughs. There was no evidence of layers within the main mound deposits suggesting that these deposits were well mixed, although some lenses did survive at the base of mound 2176. The distinct shape of mound 1097 suggested a relatively undisturbed nature, and this mound did contain some traces of sequential deposition.

Part of the differences in the mounds was probably due to their length of use. Mound 4199 was so small that it cannot have been used many times. On the other hand the three pits within mound 2176 suggest prolonged use. The large mound may have built up close to the edge of the pits and the unstable deposits could easily have collapsed over the pits once the site was abandoned.

The pits associated with the mounds in this area varied from 1.5m by 1.3m to 2.92m by 2.72m and 0.27m to 0.85m deep. They were both sub-circular and sub-rectangular; in the case of mound 2176 both types were present under the same mound. All the pits, except one, were filled by burnt stones. In most cases these seemed to have been randomly dumped with little convincing stratigraphy. The differences in appearance in the fills of 2197 may largely be due to levels of water-logging and post-depositional deposition of clay and gleying. These loose, jumbled deposits suggest rapid infilling of the pits with material from the mounds. Pit 2197 seemed to cut through pit 2202 after the latter had been completely infilled suggesting possible deliberate filling, possibly to level the area before the new trough was dug. The top fill of pit 2186 extended beyond the edge of the cut, sealing the adjacent hearth (2178). This may also indicate deliberate levelling of these features before the spread of the main mound deposits (2176). Generally there were few deposits that may have been related to the use of the pits or to their weathering after abandonment, suggesting that the pits were infilled soon after going out of use. Some use deposits may have survived; e.g. the grey, less stony clay in the base of 2197 and the silty primary fill in 1154. One pit (4208) associated with mound 4199, had relatively little burnt stone in its fill. The mound, being small and downslope, was unlikely to collapse into this pit and the fill of largely eroded deposits washing in from upslope suggests that there was no attempt to deliberately fill the pit.

The three pits under mound 2176 allow some investigation of the use and chronology of a mound. The layout of the pits, all roughly aligned and with their hearths in comparable locations, suggests a rough contemporaneity. Pits 2202 and 2186 were more similar to each other than to 2197 and were spaced at a distance that would allow their contemporaneous use. They were also similar in that they were sub-circular, with no additional features. The undercutting of their sides may have been caused by water erosion. Around the edges of 2186 the stony fills seemed to have been mixed with material collapsed from the sides and in the base of 2202 was a yellow-brown deposit that appeared to be due to erosion of the pit sides. If this interpretation is correct it may indicate that these pits had no lining to protect the sides from erosion. They were of similar sizes and varied in depth by only 0.07m.

These two pits may have been contemporary, but the larger rectangular pit 2197 cut through the fill of 2202 and seems to have replaced them. The neat rectangular shape of the base of this pit suggests that the sides were protected by a lining, although no firm evidence for one was found. There was some evidence for a lining in pit 2149 beneath mound 2031. The near vertical interfaces between the fills against the edge of the pit suggested that the middle of the pit had filled in while there was some revetment on the edge. This revetting eventually rotted away and the space it left was filled by different material, mainly eroded from the pit sides. The organic staining in some of these fills suggests that this revetment was a timber lining.

Pit 2197 had other additional features including a step to allow easier access and more stakeholes, probably to provide screens against the wind. The step was presumably necessary because the pit was much deeper than the earlier two, at 0.85m. The three flagstones (2224) on the step initially appeared to be deliberate paving, but their position in the depositional sequence suggested that they would have been laid when the rectangular trough was already mostly filled in. It seems unlikely that continued access would be necessary at this stage and it is possible that the arrangement of stones was merely coincidental and that they did not form paving on the step.



The depth of pit 2197 meant that it regularly filled with ground water after excavation, whereas the other two pits were well above the present ground water level. The silt-filled channel in trenches 1 and 2 seemed to represent a stagnant wet area rather than a running stream. All the burnt mounds on the site seem to have relied on ground water or rainwater to fill their pits, rather than being fed from a stream. However, many did not seem to be well positioned or deep enough to work effectively. The pit next to mound 4199 rarely filled with water after excavation and seemed to be in a well-drained area. This may account for its probable short period of use. Mound 2176 is less easily explained. Pits 2202 and 2186 were not deep enough to reach the present water table and were dug through the silty B-horizon, which drained well, so they were only likely to hold water in very wet weather. Pit 2197 solved these problems by being dug deeper into the boulder clay, but the earlier pits seem to have been extensively used and presumably functioned adequately. It is possible that they were not used as typical burnt mound troughs as represented by pit 2197. One pit that had good evidence for a different function was the small pit 2175 under mound 2167. The thin layer of reddish brown in the base of the pit appeared to be the result of intense heating, suggesting that this pit did not hold water, and that it was either a hearth or cooking pit, possibly it had contained dry hot stones.

All the pits under mound 2176 had some stakeholes around their edges, although pit 2197 had most. Those around 2186 were so close to the edge of the pit it is hard to see how they could have supported any weight, but the edges may have eroded back after the stakeholes went out of use. The four stakes around 2186 and the two or three around 2202 could have been supported items over the pits rather than being part of a structure. The stakeholes around pit 2197 seem more likely to represent one or more structures, as well, perhaps as other supports. Most were on the western side of the pit and could have supported some sort of light timber structure or screen to protect against the prevailing westerly winds. This might be envisaged more as a wind break than a roofed hut and would have reduced the cooling effect of the wind on the water in the trough and speeded its heating. The stakeholes at the eastern end and those within the cut of the pit elsewhere may have had a different function, possibly supporting items suspended in the trough.

All three pits beneath mound 2176 were closely associated with patches of burnt clay that seemed to have represented hearths. Hearth 2212 followed the alignment of trough 2197. The orange/red colouring defining the hearth indicated fairly intense heat and the layer of charcoal directly above possibly represented the final fire on the site. The eastern edge of 2197 seemed on excavation to cut the edge of the hearth, but this was probably due to erosion of the edge during use. Pit 2186 had a similar, well-defined, elongated hearth (2178). That associated with pit 2202 was smaller and possibly more eroded. All the hearths were on the eastern side of their associated pits and therefore downwind of the pits in the prevailing westerly winds. This may have been to prevent ash from blowing into the pits or to keep the smoke away from those tending the pits. Such well-defined hearths or fire sites were not found under the other mounds, but mound 1097 did have an area of burnt boulder clay beneath it. Although more diffuse than the hearths under mound 2176 this burning was in a similar position on the edge of the pit. Like pit 2197 the edge of pit 1154 seemed to have cut the area of burning but this was probably the result of erosion during use of the pit.

There were possible buried soil horizons under mounds 2167 and 1097. The loose nature of the mound deposits meant that the preservation of pollen or other palaeoenvironmental evidence was unlikely in these thin relict soils. Under mound 1097 there was also a clay deposit that appeared to be redeposited boulder clay, which may have been upcast from digging of the pit 1154.

## **The middle group**

### ***Description***

(Fig. 6)

A small number of burnt stone spreads were found towards the middle of the site in trench 5 and the northern part of trench 3, away from the two main groups. Two of these lay partially beyond the limits of the excavation and were not fully investigated.

### ***Mound 5027***

In the extreme south-western corner of trench 5 was a thin dispersed spread of small heat shattered stones (5027). Originally identified as a possible burnt mound, excavation suggested that if this was debris from a burnt mound, the main deposit was probably just beyond the southern limit of excavation. It lies close to the northern enclosure of the roundhouse settlement (described below) and could have been related to the settlement activity rather than being a classic burnt mound.

### ***Mound 5023***

(Fig. 43)

A very small spread of burnt stones (5023) was located in a rather dry location in the southern corner of trench 5 (NGR 59315 70631, 43.5m OD), where the terrain slopes down fairly gently to the north-west. The mound 5023 was irregular in shape and a large part of it had been truncated by a nineteenth-century field boundary ditch, recut to take a ceramic field drain. The mound was 4.8m long and 1.6m wide and 0.07m thick. It was orientated south-east to north-west and consisted of a medium grey silty clay containing frequent charcoal flecks and 80% medium angular cobbles, some fire-shattered. Located nearly centrally beneath the mound spread was pit 5024. This was circular in shape 0.64m in diameter and 0.27m deep, with steep, smooth sides and a flat bottom. It was filled by dark brown silty clay containing 40% fire cracked stones, and occasional flecks of charcoal.

About 12m north-west of the mound was another circular pit (5012) with gently sloping sides and a flat base. This measured 1.4m by 1.2m and was 0.25m deep, and was filled by brown-grey clayey silt with c.50% stones, most of which were heat fractured and reddened.

#### *Mound 3830*

(Fig. 44)

Feature 3830 was located 40m south of mound 5023, where the ground sloped down moderately from the south-east (NGR 59312 70586, 47m OD). The site comprised a linear spread of burnt stone (3830), sealing two small pits (9000 and 9003). The mound was itself overlain by a deposit of large unburnt cobbles (3829).

The mound was a very irregular linear stone spread (3830), oriented north-east to south-west and measuring 7.4m long, at least 4m wide and 0.08m thick. Probably more than half of (3830) was outside the area of excavation. Mound 3830 was almost entirely composed of heat-shattered stones with very little charcoal. Overlying the northern edge of 3830 was a linear deposit of stones (3829) measuring 7.7m long by 4.1m wide by 0.09m thick. This consisted of mid brown soil containing rounded cobbles measuring between 0.05 and 0.2m, with some up to 0.4m in length. No evidence for burning or charcoal was identified.

The mound partially overlaid two pits, 9000 and 9003. Pit 9000 was roughly circular in plan measuring 0.75m in diameter and 0.16m deep. It had fairly steep sides and a flat bottom. Almost touching the western edge of 9000 was a smaller oval pit 9003, measuring 0.75m by 0.54m by 0.15m deep. Both were filled by grey/brown clayey loam containing up to 50% rounded and sub angular stones, some of which appeared heat-fractured, and very occasional charcoal flecks.

#### *Interpretation*

The burnt stone of (5027) suggested the presence of a burnt mound nearby but the stone spread recorded was no more than erosion from such a mound, which could have been some distance under the baulk. Mound 5023 was intriguing because although it was much the same as the other mounds in form and composition it was very small. Its pit (5024) at 0.64m in diameter was even smaller than the smallest pit in the western group of mounds. Although some distance from the mound pit 5012 was presumably related to the burnt mound activity because of its burnt stone fill. Perhaps there had been another small mound in this area that had been eroded away.

Despite only partial excavation deposit 3830 appears to have been the remains of a burnt mound possibly associated with the two pits 9000 and 9003. However, the limited evidence of burning in 9000 and its complete absence in 9003 raises questions as to their contemporaneity with the activity that produced the mound. The stone deposit (3829) was probably entirely unrelated to the burnt mound activity and seems to have been the remains of a field clearance cairn possibly deliberately sited on the pre-existing stony mound.

#### **The western group**

(Fig. 6)

In the low-lying, clayey, western part of the site (trenches 6 and 7) the remains of six burnt mounds were identified. In the extreme north-west corner two mounds were located close together (6094 and 6016), while the others (6019, 6056, 7035, and 7039) comprised single isolated features. All of these mounds were badly degraded and dispersed, some barely surviving as thin scatters of heat-shattered stone. All had pits associated with them. The necessities of the ploughsoil stripping regime during the excavation meant that these feature had been left exposed for some time before they could be excavated and recorded. The limits of the mounds had been surveyed soon after exposure, but parts of the mounds had suffered from erosion before full recording was carried out. Once recorded the mounds were removed either by hand or machine to check for further features below them.

### ***Description***

#### *Mound 7035*

(Fig. 45)

This feature was located on a gentle north-west facing slope (NGR 58937 70449, 34m OD). The mound comprised a shallow, rather discontinuous spread of fire-reddened and shattered stone lying directly on the boulder clay. The spread of stone (7035) was an irregular elongated shape oriented north-east to south-west and measuring a total of 13.5m long, 5.5m wide and no more than 0.1m thick. Two pits were located on the western, downslope side of the stone spread. Pit 7042 was sub-circular in shape measuring 0.75m in diameter by 0.15m deep. It had a shallow bowl-shaped profile and was filled by greyish brown clay containing 50% fire-reddened and shattered stones and charcoal flecks. Some of the stones seemed to be heavily embedded in the base of the cut. Pit 7045 was partially sealed by mound deposits and was an irregular oval measuring 1.4m by 1.0m by 0.23m deep. It had steep, near vertical sides, and a rounded base. The basal fill was a light brownish grey clay containing significant quantities of fire-cracked stone and charcoal. Heat-cracked stones comprised 70% of the main fill.

#### *Mound 7039*

(Fig. 46)

This site was located at the base of the slope on the north-eastern side of a slight valley in the boulder clay (NGR 58954 70516, c. 30m OD). Deposit 7039 was an irregular sub-circular stone spread measuring 5.44m long by 4.0m and comprising a clayey silt containing heat-cracked stone fragments. Immediately to the west was 7041, a similar but much smaller linear spread of stones measuring 2.35m by 1.03m. Further small patches of burnt stones suggested that the mound had formerly covered a larger area. Located just to the north of the main spread (7039) was pit 7043. This was sub-oval in shape with steep sides and a relatively flat base and measured 1.7m by 1.2m by 0.2m deep. The pit contained two fills; the lower was a black sandy deposit with charcoal and occasional small heated stones. This formed a thin (0.02m thick) layer across the base of the pit but which built up to 0.07m thick where the base met the sides. Above this was a brownish grey clayey silt containing heat-shattered angular stone fragments.

#### *Mound 6019*

(Fig. 47)

Burnt mound 6019 was located in the bottom of a shallow valley in the boulder clay, with the ground rising to the north-east and north-west, in addition to the general slope up to the south-east (NGR 59008 70638, 29m OD). This mound was a large 'L' shaped spread of concentrated fire-reddened and heat-shattered stone in brown clay. The east-west arm measured 10m long and the north-south arm was c. 12m long, both roughly 7m wide and 0.15m thick. There was an area of concentrated charcoal towards the centre of the east-west arm of the 'L', and here the stones were also particularly concentrated. There was a slight hint of layering in the charcoal in a section through this area. Towards the west and south the stones of mound 6019 became increasingly dispersed and patchy. A post-medieval ditch (6024) cut through this area from south-east to north-west.

Below the north-south arm of the burnt mound was a shallow pit 6025, which was sub-circular in shape and measured 1.2m in diameter and 0.15m deep. It had gradually sloping sides, a flat base, and was filled by light brownish grey clay containing frequent flecks of charcoal and heat shattered stone. The charcoal was dispersed throughout the deposit but it was more concentrated around the periphery of the feature particularly on the eastern edge. Pit 6025 seemed to cut a lower layer of burnt stones (6036).

Enclosed within the arc of the burnt mound was another pit 6023, which was vaguely bell-shaped with a noticeably scalloped edge. It measured 1.5m by 1.3m by 0.25m deep and was located upslope and 2m to the east of the main stone deposit (6019). The pit was filled by grey silty clay containing frequent charcoal and burnt stones.

About 11m to the west of mound 6019, and located towards the base of a slight rise, was a very shallow cut (6029). The feature was oval in plan, measured 1.1m by 0.6m by 0.08m deep and had a shallow concave profile. It was filled by sandy clay containing fragments of charcoal and burnt stone. Although there was no spread of burnt stone close to pit 6029 it may have been associated with (6019), which could have originally extended towards the pit but was cut away by the later ditch.

#### *Mounds (6016) and (6094)*

(Fig. 48)

These were located at the base of the slope on the western side of a slight rise (NGR 58986 70683, 28m OD). Deposit 6094 was an irregular spread of fire-reddened and heat-shattered stone measuring 3.08m

by 2.28m by 0.05m thick. Immediately to the north of mound 6094 was a rectangular pit (6058), quite regular in shape, and oriented north-east to south-west. It measured 1.72 m by 1.0m by 0.3m deep and had steep sides curving into a flat base. It was filled by dark grey clay containing abundant burnt stone and much charcoal including large fragments.

Deposit 6016 was a more extensive spread measuring 9m by 2.4m by 0.12m thick and consisted of yellow sandy clay, containing concentrated heat shattered stones mixed with lenses of dense charcoal. A pit 6018 was located 2-3m to the south-east of mound 6016. The pit was oval and measured 1.6 m by 1.1m by 0.3m deep. It had fairly steep sides and a flat bottom. It contained two fills; the lower fill was a wedge of yellow/orange silty clay in the south-eastern corner of the pit and this was sealed by brown sandy clay containing burnt stone and occasional charcoal.

#### *Mound 6056*

(Fig. 49)

This site appeared as an isolated feature located on the general north-west facing slope (NGR 59070 70599, 32m OD). It was a roughly linear spread of small fire reddened and heat shattered stones measuring 11.36m long, 4.06m wide and 0.05m thick. It was oriented north-east to south-west and the southern corner was cut by a post-medieval drainage ditch. Immediately adjacent to, and partly sealed by mound 6056 on its northern and downslope side was a large, shallow sub-rectangular pit 6015 measuring 3.15m long by 1.4m wide by 0.2m deep. It was oriented more or less parallel to the stone spread (6056) and had sloping sides and a somewhat irregular flat bottom. Pit 6015 was filled by light brown clay with charcoal-rich lenses and heat shattered stones. The pit was cut by a modern field drain, and the fill to the west of the drain contained larger fragments of charcoal.

#### ***Interpretation***

The spreads of burnt stone are interpreted as the eroded remains of burnt mounds. The stones within these spreads were almost all heat-cracked, although occasional unbroken rounded stones could be found. The majority of the stones were small fragments, less than 0.05m in length, although pieces up to 0.1m and occasionally larger were present. Flecks and larger fragments of charcoal were present in all the mounds despite the extent of the truncation, which had left none of these deposits more than 0.15m deep and most only 0.05m thick. The mounds tended towards the classic horseshoe shape around the pits, which were generally, but not exclusively uphill from the mounds.

The pits varied in size from 3.15m long by 1.4m wide and 0.2m deep to 0.75m in diameter and 0.15m deep, and were generally sub-circular but two had a more rectangular plan. Despite the association with burnt material none of the pits showed any sign of *in situ* burning. Generally there was one pit per mound but mound 7035 had two and mound 6019 seems to have had three. In the latter case pit 6025 seemed to cut an earlier burnt stone deposit, which may indicate that the pits were used sequentially. Some of the mounds had spread to cover or partially cover a pit, but this was most likely due to post-abandonment mound collapse or spreading caused by ploughing.

All the pits had burnt stone as a major component of their fills, even those that were some distance from the mound, suggesting that burnt stone may have been deliberately dumped into the pits. This material was generally jumbled and well mixed, but some pits had other fills. Pit 7043 had a primary deposit of charcoal in its base, possibly relating to its final use, or even representing a partially charred lining. In pit 6018 the lower fill resembled the natural B-horizon of the soil. It is possible that this represented a partial collapse of the pit side before it was fully infilled. Alternatively material dug from the pit may have been deliberately dumped back in again at the start of a deliberate infilling process.

It is interesting that a post-medieval ditch (6024) ran through or close to four of the mounds (6016, 6019, 6056 and 6094). This may have followed an earlier natural water channel or hollow, which influenced the siting of the mounds. They have a tendency to be located at the foot of local slopes and in slight valleys where the water table would be closest to the surface.

Other burnt mounds have been found nearby beyond the boundaries of the site (Fig. 75). Two burnt mounds were found to the south of the site during the work on the A55 and related service station. One mound (PRN 815) was found to the east of Rhos Uchaf next to a boggy patch. It was at least 6-7m across and 1m high but could not be fully excavated and its full shape and whether it had a trough was not determined (Kelly 1982 and PRN note). Near a woodland formerly known as Wet Covert (PRN 877), but largely cleared to make way for the service station, were found two patches of blackened earth and fire-shattered stone about 1.5m across and up to 0.3m deep (Kelly 1990). A third mound may have existed within the henge complex. A watching brief in 1975 identified a pit filled with charcoal and fire-cracked stone (White 1975). As burnt mounds were not well known in Wales at that time its true character was not recognised, but the description suggests a burnt mound. These mounds could



therefore be widely spread over this part of the Arfon plane, only recognisable in this agricultural landscape where they are revealed by excavation.

### **Feature 7055**

(Fig. 50, plate 13)

#### **Description**

An isolated feature (7055) is included in this section because it had many features of a burnt mound trough, although there were also some significant differences. This feature was found in the lower, eastern half of the site (NGR SH 59014 70464, 36m OD). It was situated towards the base of the ridge slope not far from where the ground levelled out towards the river. Feature 7055 was a shallow pit roughly oval or sub-rectangular in plan measuring 2.7m by 2.0m and 0.3m in depth. It was aligned with its long axis north-east to south-west parallel to the slope. The eastern side was steep and the western side more gradually sloping, while the base was generally flat. Around the edge of the base or in the sides were 13 stakeholes. These stakeholes were up to 0.14m in diameter and up to 0.24m in depth and were filled by brown-grey silty clay with occasional flecks of charcoal and small stones. Many of the stakeholes were angled so that the stakes in them would have met over the middle of the feature. Sealing the stakeholes in the base of 7055 was a soft black, charcoal-rich deposit, which also spread up the north-west side of the pit. Dark grey silty clay overlay this especially around the edges of the feature, but the main fill was composed of small burnt and heat-fractured stones in dark grey clay. This appeared to have been tipped in on the north-western side, leaving much of the south-eastern side to be filled in later by orange-brown, then grey silty clay containing fewer stones, although some of these were burnt.

To the south-east of the pit were very eroded patches of burnt stone, but it is not clear that these were the remains of a burnt mound. To the north-west was a line of three features. About 5.7m from 7055 was posthole 7090. This measured 0.55m by 0.38m and was 0.18m deep with a tapering hollow in its base, possibly representing the impression of a stake. Feature 7086, adjacent to 7055 was only 0.2m in diameter and 0.1m deep and was less securely identified as a posthole. Next to this 7088, which was 0.1m in diameter and 0.12m deep may have been a stakehole.

#### **Interpretation**

Although pit 7055 could have been a trough for a burnt mound it was rather shallow for its size and the traces of a burnt mound were very slight. The burnt stones indicate the use of hot stone technology, but the shallow pit may suggest their dry use, rather than for heating water. There were no traces of *in situ* burning on the pit sides but the charcoal-rich layer in the base of the pit could have been the remains of the last fire in the pit. Alternatively the patches of burnt stone to the south-east of the pit could have indicated a fire site rather the remains of a mound. The stakeholes in the base of 7055 seem to have held stakes that could have been tied together at the top to produce a small tent-like structure. This could have supported a covering over the pit or items could have been suspended from the structure. The lack of other features in the area does suggest that the postholes to the north-west were directly related to pit 7055.

Small stake-built huts are known from other sites. Under the burnt mound at Ballyvourney I, Co. Cork (O'Kelly 1954, 126), as well as the trough and hearth were two huts. The earliest hut is described as 'a small oval depression 25cm deep' with seven small postholes around its edges, mostly inside the cut, which was 2.4m along the long axis. This was interpreted as a small hut with a framework of light branches tied together at the top. It had no hearth and was considered perhaps to have been a meat store rather than a domestic structure. As the whole area was covered by a burnt mound the hollow was filled with burnt stones. If the mound associated with feature 7055 had been entirely lost this feature could be comparable to the Ballyvourney hut. However, if this was the remains of a traditional burnt mound there was no trough. It is possible that the shallow pit was used as a trough then converted into a tented structure and finally back-fill with material from the burnt mound. However, it seems more likely that its use never required a trough and that the burnt stones were used in the covered pit, perhaps for drying. This does not explain why the stones were broken in the same way as those dowsed in water, nor does it clarify the sequence of use involving fire in the base of the pit, insertion of the stakes, also in the base of the pit and the deposition of the stones.

#### **Artefacts and ecofacts from the burnt mounds**

Burnt mounds are generally known to produce very few artefacts and those on this site were no exception. Flint was most frequently found, although limited to one or two pieces per mound. Embedded in the natural clay beneath mound 2176 was a fragment of an edge-retouched knife with neat scalar flaking (Fig. 51, SF881). This is a simple form of plano-convex knife indicating a date in

the second millennium BC. An irregular fragment of flint also came from one of the pits 2109 associated with this mound, with another irregular fragment of pebble flint found near the pit during the cleaning of the mound. Another knife made by casual retouch of a flake of dark, good quality flint with fine retouch along one sharp side edge (Fig. 51, SF585) was found in a root hollow next to mound 4199. A flake fragment of local pebble flint came from the mound itself. The colluvium sealing trough 1154 under mound 1097 produced a broken flint flake and pit 6015, associated with mound 6056, contained an irregular burnt fragment of flint.

The extensive sieving programme produced a few small items that would otherwise have been missed. Mound 1097 contained a tiny fragment of prehistoric pot, probably Late Neolithic or Bronze Age. This could have been residual, but pit 2149 produced similar small fragments, and it is possible that the pottery was related to the burnt mound activity. A large decorated piece of Grooved Ware pottery was found not far from mound 1097 during stripping, but its exact findspot was not recorded and its significance cannot now be established. Tiny crumbs of a red abrasive pottery tentatively identified as Food Vessel were found near mound 4199.

Mound 3830 produced an eroded samian basesherd dating to AD 70-110 and the heap of unburnt stones overlying it (3829) contained a sherd of a mortarium dating to *c* AD 220-350 (SF671, Fig. 66). The date of the overlying stones (3829) is unknown, so the pottery may have been related to that, but the disparate dates suggest these sherds may have been scattered in manure over the fields and become trapped amongst the stones as the soil eroded downhill.

Small fragments of magnetic and non-magnetic slag were found in mound 1097 and the fills of pits 2186, 2202 and 2197. Such material was quite frequently found in samples from all over the site. The pieces of slag were very small, easily small enough to pass through a wormhole, and are most likely to have been intrusive. The fill of 2197 also produced a rock crystal chip.

With the exception of the flint from mound 6056, no finds were recovered from the burnt mounds further west and the evidence from this site supports the expectation that finds would be scarce on these types of features.

Ancient biological remains recovered from the 59 samples studied were restricted to quite large quantities of mostly unidentifiable wood charcoal, with a few charred grains and hazelnut fragments. Most samples also contained modern contaminants. A small number of charred cereal grains were recorded from mound 1097 and from trough 2197 under mound 2176. These included barley and emmer wheat, but it is highly unlikely that crop processing (or domestic activity relating to food preparation) was taking place on any scale in the vicinity of these features. Other food plant remains were restricted to occasional fragments of charred hazelnut. Amongst the identifiable charcoal hazel was the most frequently recorded species, although there was also some oak. The fills of trough 4208 associated with mound 4199 contained slivers of charcoal typical of structural oak timbers, raising the possibility of a timber structure associated with this burnt mound.

Feature 7055 also produced large amounts of wood charcoal, most of the identifiable pieces being of hazel. There were also lumps of fused ash suggesting a fire had been set in the pit and a single unidentifiable cereal grain.

### **Stone**

It has been assumed in south Wales (James 1986) and Ireland (O'Kelly 1954) that sandstone was the main rock used in burnt mounds, but igneous rocks were used as well and were probably more efficient as they shatter less readily than sandstone (Buckley *et al* 1987). Sandstone was used at Bryn Cefni, Anglesey but dolerite was preferred elsewhere on Anglesey (Jenkins 2002). It was assumed that limestone could not be used because it would form calcium hydroxide on heating in water (O'Kelly 1954), but it was used at Stackpole Warren (Williams 1990) and the mound at Ballycahane Upper, Co Limerick was composed mainly of burnt limestone (Gowen 1988, 132). It seems that whatever local stones was available was used but the harder, more heat resistant rocks were selected in preference. Most originated from the drift not from local bedrock (Buckley *et al* 1987). At Parc Bryn Cegin stone from the local Snowdonian glacial deposits were used but there was a slight preference for doleritic and mafic rock types, presumably for their resistance to fracturing (Jenkins, this report, appendix XI).

### **The radiocarbon dates**

Thirty samples were submitted from eleven of the sixteen burnt mounds, mostly on charcoal of short-lived wood that was probably used as fuel. Two samples were dated from each trough of mounds scattered over the site in order to compare the general date range of the different mounds. It was hoped to establish whether all were roughly contemporary or whether there was a migration of activity across the site over time. To test the duration of a single mound nine samples were submitted from the largest mound (2176). The size of the mound suggested that it could have been in use over a long period, but

the consistent layout of the troughs and fire sites hinted that it may have had a restricted duration. The dated samples from four features under the mound, including a hearth deposit were chosen to try and detect all phases of activity on the mound. Three samples were also submitted from feature 7055 to test whether its similarities to the burnt mounds indicated a similar date.

The dates represent a very valuable group giving an indication of the chronological range of this activity over this fairly large area (for details and a plot of the dates see appendix XVI, Fig. 12). However, the mixed nature of burnt mound material make the dates somewhat difficult to interpret. The trough fills were not sealed contexts but are more likely to have been backfilled by mound material when they went out of use. The material from the troughs could, therefore, have originated at any time during the mounds' use. This is reflected by six of the troughs producing dates that were not statistically consistent. In the case of trough 1154 under mound 1097 and trough 2179 under mound 2176 a third date was obtained. In both cases two of the three dates were statistically significant and it can be assumed that the anomalous date was the result of contamination. The late date from trough 2179 is very similar to the date of the adjacent mound 2031 and may have originated from this activity. The sample dated was a charred cereal grain, one of the very few recovered from the burnt mounds, suggesting that it may have been entirely unconnected to the burnt mound activity. The early date from trough 1154 is much earlier than the other two dates from this trough and significantly earlier than the other mounds in the area. The material dated was a charred hazelnut shell. Unlike the probable fuel wood samples hazelnuts did not seem to be inherently associated with the burnt mound activity, although they could have been incidentally included as fuel. The single trough in this mound also indicates a single phase of use and it seems reasonable to discard the early date as residual.

Where there are only two inconsistent dates from a trough it is harder to determine whether these represent re-use or contamination. In the case of mounds 6094 and 7035 where the dates are close they probably represent the duration of a single phase of activity. The very different dates from mounds 6019 and 7039 could represent either contamination from other sources or two widely separated phases of use. The two early dates from these mounds fit very well with the peak of burnt mound activity on the site. However, the later dates are not dissimilar to the consistent pairs of dates from mounds 2167 and 2287. Their re-use cannot, therefore, be ruled out. Mound 6019 had two pits near or under the mound and another was not far away, so it is a suitable candidate for multiple phases. Mound 7039 had only one trough so contamination may be more likely in this case.

The dates reveal interesting patterns. The earliest mound appears to have been 6094. Although the two dates are not statistically consistent they are close enough to be from a single extended phase of use. The date of 3490-3120 cal BC to 3340-3020 cal BC is very early for burnt mounds in this area, as discussed below, and overlaps significantly with the deposition of Peterborough ware in pits on the site (between 3360-3090 cal BC to 3330-2920 cal BC, see above). It may also overlap with the construction of henge A in roughly 3300-2900 cal BC (Lynch 2001).

There followed a period of about 2490-2290 cal BC to 2290-2020 cal BC when mounds 2176, 4199 and 6016 were active. Mounds 6019 and 7039 also seem to have had some activity at this period and mounds 2031 and 7035 may have started in use at about the same time but continued slightly later. All this activity was not restricted to one area but spread over most of the site. A later phase of activity dating from 1630-1450 cal BC to possibly 1120-900 cal BC is represented by mounds 1097, 2167, 2287, and possibly late phases on 6019 and 7039.

These phases are well demonstrated in the group of mounds at the eastern end of the site. This is the greatest concentration of mounds on the site and includes many of the largest mounds. Mound 2176 appeared to be the earliest of the group. Although there was stratigraphic evidence that trough 2179 cut through trough 2202 the dates failed to pick up any chronological differences. If the latest date is discarded as on intrusive material modelling the other dates gives a start date for the activity of 2570-2370 cal BC and an end date of 2390-2010 cal BC (appendix XVI, Fig. 13). This suggests a duration of use of 1-310 years at 95% probability and probably 80-260 years at 68% probability. In human terms this represents long term use and makes it probable that the troughs were sequential, but it does suggest quite continuous use and rules out re-use at widely separated periods. The general area, however, was repeatedly re-used. Probably slightly after mound 2176 the trough associated with mound 2031 was in use (2280-1970 cal BC to 2030-1770 cal BC). Next was mound 1097, dating from 1630-1450 cal BC to 1530-1420 cal BC, then two mounds (2167 and 2287) at roughly the same time (1420-1210 cal BC to 1310-1040 cal BC). The hydrological conditions of this particular location on the site must have made it suitable for burnt mounds and so its re-use is not unexpected. It should also be remembered that although these particular mounds were invisible on the modern ground surface due to post-medieval ploughing such features are still easily recognisable as upstanding mounds in unploughed areas. Even when covered in vegetation any erosion would reveal the distinctive burnt stone deposits, which would

be immediately recognisable to people still using hot stone technology. The people using this location would most likely, therefore, have recognised that it had been used previously.

Two of the three dates from feature 7055 were statistically consistent, while the third was not. This third date was on a charred cereal grain so eroded as to be unidentifiable and it was found in the loose burnt stone fill of the feature. It seems probable that this grain was intrusive to this deposit. The other two samples from the charcoal layer in the base of the feature and from the fill of one of the stakeholes give a date of 1500-1310 cal BC to 1440-1260 cal BC. This places the feature within the earlier part of the second main phase of burnt mound activity on the site. As the use of this feature involved burnt stone and it is contemporary with burnt mound activity on the site it is reasonable to assume that it was in some way related to this activity, probably a variation on the usual hot stone technology.

## **DISCUSSION OF THE BURNT MOUNDS**

### ***Introduction***

Burnt mounds are a very common site-type in Ireland and many parts of Britain, but for many years they were undervalued as an archaeological resource. In the 1970s they were seen as essentially a new site-type in Wales (White 1977) despite previous discussion in Ireland. In the last 20 years there has been a greater awareness of their potential, but their function is still much debated. In Ireland, where over 20,000 are known, they are called '*fulachta fiadh*' (O'Kelly 1989), but in Britain the term 'burnt mound' is used to define a site-type with evidence for the use of a specialised hot stone technology. These sites are usually identified by a mound of heat-shattered stone; the residue from the primary activity associated with a pit or trough dug into the ground. Many of these troughs were lined with stone, timber planking, or clay and were intended to hold water. Often a hearth or site of burning is located nearby, and there are sometimes associated light timber structures (O'Kelly 1989).

The siting of these features is also quite specific: they are generally located on the margins of wet, water-logged areas or near to a stream or other water source. Though there is usually dry ground immediately adjacent to burnt mounds, it is rare to be able to identify a contemporary settlement site nearby.

### ***Function***

It is generally accepted that stones were heated in a hearth and then transferred to a water-filled trough to heat the water, being discarded to form the mound once they had shattered into pieces too small to be used. The purpose of the heated water is contentious. The most common interpretation is that burnt mounds were cooking sites (O'Kelly 1954), however the lack of bones and other occupation debris has encouraged alternative hypotheses. It has been suggested that they were sites for bathing, or saunas/sweat lodges (Barfield and Hodder 1987) or industrial processes particularly felting, dyeing, fulling or laundering (Jeffery 1991), but leather working, basket making, timber bending and many others have also been proposed (Barfield 1991).

Any explanation must account for specific features of these sites. The trough, carefully dug with some effort, often carefully lined and centrally placed, was a principal part of the site's function, not incidental. None of the many ethnographic examples of bathing and saunas listed by Barfield and Hodder (1987) required such a trough, especially when there was often a stream nearby. The large quantities of burnt stones must also be explained. Most of the industrial uses of hot stones either do not require a trough or would produce relatively few shattered stones. Dying or fulling are possibilities that fit the evidence quite well (Jeffery 1991) but they do not require boiling water and it is doubtful that they would have produced the recorded quantities of shattered stone. The size of the mounds suggests that the water in the trough was raised to boiling point and kept boiling for some considerable period of time. Numerous experiments of a more or less formal nature into the use of burnt mounds (O'Kelly 1954; James 1986; Ó Drisceoil 1988; Allen 1994) have demonstrated that this was an effective way of cooking meat. The process also produced exactly the sort and quantity of burnt stone debris found on the archaeological mounds.

The interpretation of burnt mounds as cooking places comes originally from Ireland where they have traditionally been called *fulachta fiadh* or *fulachta fian* (cooking places of the wild/of the deer and cooking places of the roving hunters/warriors or Fianna respectively) (O'Kelly 1954). Ó Drisceoil (1990) warns that such terms, which are recorded in Irish literature since at least the ninth century AD, have variable meanings. However, some of the tales, although written down in the seventeenth or eighteenth centuries, contain detail that corresponds very closely with excavated examples (especially Keating's *Forus Feasa ar Éirinn* and *The Romance of Mis and Dubh Ruis* (quoted at length in Ó Drisceoil 1990)). The tales appear to record features similar to burnt mounds in use. Either a later medieval practice was being applied anachronistically to the old tales or it records genuine memory of more ancient practices. Although there are records of sweat baths in post-medieval Ireland (Barfield



1991), there seems to be little evidence of the use of burnt mound-type sites. As mentioned a wooden trough filled with burnt stones and dating to the thirteenth century AD was found in Waterford and debris associated with it strongly suggested its use for cooking (Walsh 1990). The anachronistic analogy is, therefore, a possibility, though sites of this date seem to be very rare. Brindley and Lanting (1990, 56) found that in Ireland classic burnt mounds dated to the Bronze Age 'with no exceptions' and denied that there could be a link with the early medieval period when most of the tales are thought to have been first told. Despite the timespan involved the practical detail in the tales does raise the possibility that some information has been passed down from the use of these sites. Although the tales cannot be used to argue that these sites were isolated or related to hunting (Ó Drisceoil 1990) it is hard to discard the evidence, tested by experiment, that they were used for cooking and perhaps secondarily for washing.

The main argument against cooking is the almost total lack of bones from the sites. But bone has been found especially from sites on limestone, where its preservation is more likely, e.g. Fahee South on the Burren, Co. Clare (Ó Drisceoil 1988) and Ballycahane Lower, Co. Limerick (Gowen 1988, 134). In both cases there was evidence of butchery. A single cattle tooth was found at Bryn Cefni, Llangefni, (Smith and Kenney 2002) where bone preservation was less likely, and fragments of burnt bone survived at Graeanog, Clynog (Kelly 1993, 84). Various sites from the East Midlands produced bone from palaeochannels adjacent to burnt mounds (Beamish and Ripper 2000), although much earlier dates from human bone at the Watermead Country Park site demonstrated that proximity did not mean that they were contemporary (Ripper 2003). Burnt stone spreads at Stackpole Warren, Dyfed, produced quantities of bone, shell and other debris suggestive of cooking (Benson *et al* 1990). It is probable that soil acidity on these usually waterlogged sites has prevented bone preservation; at Fahee South Ó Drisceoil (1988) found only robust bones, teeth and antlers and only in certain protected areas. However, this cannot explain the lack of bones on all sites; the soil acidity at Cob Lane, Bournville was tested and found to be neutral (Barfield 1991, 60). Barber (1990b) suggests that if the mound sites were separate from settlements meat may have been prepared and consumed away from the burnt mound and no bones or other debris would necessarily be discarded on the site. This could also explain the rarity of artefacts on these sites. Finds where they occur are usually a few flint flakes or very occasional pot sherds. In Scotland and Ireland hammerstones and stone discs interpreted as pot lids by Hedges (1975, 68) seem to be the most common finds (Hedges 1975, Cherry 1990, O'Kelly 1954). Small pieces of bronze slag from mounds on Anglesey caused White (1977) to suggest metal working on the sites but such evidence is very rare. The site at Tangwick, Shetland (Moore and Wilson 1999) provides an interesting contradiction as it produced significant quantities of pottery. The spalling damage on these suggested they had been used in the burnt mound trough, most likely for cooking.

Some sites in the Northern and Western Isles have complex stone structures, the most famous being at Liddle, Orkney (Hedges 1975). Hedges (1975) argued that these sites were domestic but Moore and Wilson (1999) consider this to be unlikely. The site they excavated at Tangwick, Shetland (Moore and Wilson 1999) had stone-built cells as an integral part of the mound and trough complex, but beyond noting that these could not have been domestic structures and that cooking was likely the authors could not demonstrate the function of the site. Two phases of stone buildings, the latest being a complex cellular structure, were associated with a burnt mound at Ceann nan Clachan, North Uist (Armit and Braby 2002). Neither phase had a trough and the authors believed that saunas or possibly smoking or drying food were the most likely explanations.

The general lack of finds on burnt mound sites suggests these were not adjacent to occupation sites, although their distribution in many places in lowland areas on good land (Hedges 1975, Ehrenberg 1991) implies they were not far from settlements. Where prehistoric landscapes are well preserved, such as in Shetland, burnt mounds can be seen to be located at some distance from houses on the margin of good land but within a settled, organised landscape. This interpretation assumes that all the features are contemporary, which cannot yet be demonstrated (Moore and Wilson 1999). At Blairhall Burn, Dumfriesshire (Strachan *et al* 1998) two burnt mounds were located either side of a settlement site, but neither were closer than 50m from a structure and although the radiocarbon dates for the mounds and the settlements overlapped it could not be proved that they were contemporary. At Reading Business Park, Berkshire a very large burnt mound was found immediately adjacent to a contemporary roundhouse settlement (Pryor 2004, 312). One of the clearest examples of the relationship of burnt mounds to their contemporary landscape was found at Bradley Fen, Whittlesey, Cambridgeshire (Pryor 2004, 289-293). Here the dry land settlement area was divided from the fen by a ditch. The burnt mounds were on the fen side of the ditch but closely related to the layout of the settlement on the dry land. Associated with the burnt mounds on the fen edge were weapon hoards intimating that the ditch did not just separate dry from wet but everyday settlement from an area of ritual significance.

Cooking with hot stones no doubt occurred through out much of prehistory and into historical times in places (Hedges 1975, 71). Although burnt mounds as such might have been restricted largely to the Bronze Age Barber (1990a) notes that similar burnt stone deposits are found on Iron Age broch sites and many other sites from the end of the Neolithic onwards. Burnt stone spreads are also found in middle Bronze Age settlements in Sussex and Wessex (Barfield 1991). Burnt stone spreads at Stackpole Warren, Dyfed (Benson *et al* 1990) seemed to be an integral part of a sequence of occupation deposits and were associated with bone and other cooking debris. While most of these burnt stone deposits are not burnt mounds in the sense of isolated mounds near streams with associated troughs they use similar hot stone technology. However, some of the brochs have stone-lined troughs, and one of the mounds Stackpole Warren (Benson *et al* 1990) was associated with a pit that may have been a water trough. Establishing the relationship of burnt mounds to settlements is to some degree hampered by the circular argument that burnt mounds were isolated from settlement, therefore burnt stone found on settlement sites cannot be remains of classic burnt mounds.

Most burnt stone deposits on settlement sites are associated with domestic refuse and seem likely to be related to cooking. Small-scale cookery is more efficiently done using a hide to hold the water or in dry hot stone ovens. The time and labour expended in creating and using large troughs would only be justified when large quantities of meat were to be cooked. Burnt stone deposits without troughs may represent everyday activity, while mounds with troughs could indicate larger aggregations of people and feasting. The latter seems to be most graphically illustrated by a classic burnt mound at Bestwall, Dorset (Ladle and Woodward 2003). This was associated with demolition and abandonment of a roundhouse and the artefacts suggest the use of the mound for feasting, perhaps to mark the end of the house.

Burnt mounds may, therefore, not be closely associated with specific settlements but be located in wet areas close to sites of temporary aggregation. The potential difference between burnt mounds with and without troughs has been noted in Ireland, where several authors have called for only those mounds with troughs to be referred to as *fulachta fiadh* (Brindley and Lanting 1990, Connolly 2001). Some of the troughless burnt stone mounds seem to have different associations and dates to the typical *fulachta fiadh*, in particular there seems to be an association with embanked enclosures of the Late Neolithic or early Bronze Age. Burnt spreads close to an embanked enclosure at Gortalea, Co Kerry dated to the Early Neolithic and this site and other similar ones contained fragments of cremated bone. In some cases the leached condition of the subsoil immediately below the spreads suggested the stones were placed on the ground when they were hot, perhaps used for roasting rather than boiling (Connolly 2001).

### Dates

Despite early suggestions of a long date range (O’Kelly 1954) by the early 1990s the evidence strongly suggested that burnt mounds through out Britain and Ireland were a Bronze Age phenomenon (Brindley *et al* 1990, Hodder 1990, Russell-White 1990). Scotland did have some Early Iron Age examples and a few with medieval dates (Russell-White 1990), but the vast majority were apparently Bronze Age. More recent work is suggesting a rather wider date range. One burnt mound with a typical rectangular pit at Yarnton, Oxfordshire was associated with postholes producing Late Neolithic/Early Bronze Age pot (Hey 1997, 109). At The Stumble, Essex a low burnt flint mound was associated with Grooved Ware and Beaker pottery (Brown 1997, 94).

Table of early dates on burnt mounds

Site	Date cal BC	Country	Reference
Gortalea, Co Kerry	4230-3790	Ireland	Connolly 2001, 12
Greenlaw, Dumfriess-Galloway	3640-3370	Scotland	AHDS
Cloghaclocka, Co Limerick	3370-3100	Ireland	Brindley <i>et al</i> 1990, 27
Bourn Brook, Harborne, Ridgacre, West Midlands	2900-2150	England	Hodder 1990, 108, AHDS
Ballinaspig More, Co Cork	2800-2500	Ireland	NRA 2005
Lady Glassey Wood, Kilmartin	2700-2460, (TL) 2804+/-360	Scotland	Anthony <i>et al</i> 2001
Callaly Moor, Northumberland	2620-2140	England	AHDS
Reenarea Rise, Imlagh Basin, Valentia / Valencia, Co Kerry	2550-1950	Ireland	Mitchell 1990, 24-5
Watermead Country Park, Birstall, Leicestershire	2500-2000	England	Ripper 2003

Birkhall, Dumfriess-Galloway	2470-2020	Scotland	AHDS
Granny townland, site 27, Kilkenny	2461-2148	Ireland	O'Sullivan and Stanley 2005, 148
Site 1, Ballyclogh, Fermoy, Cork	2460-2200	Ireland	Brindley <i>et al</i> 1990, 26

Late Neolithic dates have been produced from a few burnt mounds throughout the British Isles, suggesting a probable start to this type of activity in the Late Neolithic. However, there are two earlier Neolithic dates, one from Scotland and one from Ireland. The Irish example's lack of a trough means that this cannot be considered a classic burnt mound (Connolly 2001, 12). Brindley *et al* (1990, 27) list the Mid Neolithic Cloghaclocka date but express doubts about the sample dated and do not accept it as reliable. These early dates need to be confirmed before much discussion can be based on them.

Table of Late Iron Age and medieval dates from burnt mounds

Site	Calibrated date	Country	Reference
Kerrowdhoo, Bride, Isle of Man	170BC-130AD 350BC-70AD	Isle of Man	Hedges <i>et al</i> 1995, 204
Fonnybane, Co Down	880-1150 AD	Ireland	Brindley <i>et al</i> 1990, 28
Auld Taggart 4, East Rhins, Dumfries and Galloway	AD 990-1210 to 1050-1290	Scotland	Russell-White 1990, 74
Auld Taggart 2, East Rhins, Dumfries and Galloway	AD 1020 to 1260	Scotland	Russell-White 1990, 74
Site 2, Catstown, County Kilkenny	1150-1390AD	Ireland	Ryan 1990, 46

The main range of burnt mound dates runs into the Early Iron Age with mounds from the Northern Isles particularly falling in this period (Russell-White 1990, 91). Much later dates are rare and usually single. The two dates from Kerrowdhoo, Isle of Man demonstrate a Late Iron Age use of burnt mounds on the island (Hedges *et al* 1995, 204). Site 2 at Catstown, Hugginstown, Co Kilkenny (Ryan 1990, 46) produced a single medieval date from a hearth in a burnt mound and Fonnybane, Co Down produced an earlier medieval date. The latter was not excavated so it is not known whether it had a trough (Brindley *et al* 1990, 28). Auld Taggart 4 is convincing as a late mound because its three dates are all quite close (Russell-White 1990, 91). It appeared the same as the earlier mounds and contained no artefacts, demonstrating that late mounds would be hard to identify without radiocarbon dates. Brindley *et al* (1990) disregarded early medieval dates from Drombeg, Co Cork, as inadequately processed and redating of this site produced a Bronze Age date. More convincingly an excavation at Peter Street, Waterford (Walsh 1990) revealed a wooden trough in a pit with burnt stones, much like a burnt mound but dating to the early thirteenth century AD. With the number of mounds excavated and dates obtained many more medieval dates would be expected if this site type was widely used in the period. If the use of these features was moved into towns perhaps those that are found are not recorded in the literature as burnt mounds, but considered as a separate category of sites.

#### *Parc Bryn Cegin and Welsh burnt mounds*

In North Wales most burnt mounds are known from the uplands, where they are preserved as earthworks. There were few mounds known on Anglesey until very recently when development archaeology demonstrated that they are also common on the lowlands (e.g. Davidson (1998a) and Maynard (forthcoming)). The large area stripped at Parc Bryn Cegin allowed not only 16 mounds to be found but also the areas around many of them to be explored.

The Welsh mounds are much like those elsewhere. Shallow pits or amorphous hollows are found under burnt mounds (Williams *et al* 1987, James 1986) as well as large troughs. Troughs at Glyn, Llanbedgoch (Redknapp 2004) and Nant Porth, Bangor (Davidson 1998b) had planks lining their bases and although no wood survived the outline of timbers forming a lining was detected at Bryn Cefni, Llangefni (Smith and Kenney 2002). Postholes and stakeholes representing some kind of structure that seems to have burnt down were found on Anglesey under site 6 on the Shell Oil Pipeline (White 1977), and mound A at Carne, Pembrokeshire (James 1986), had stakeholes for a windbreak around the hearth. There were stakeholes around the edge of one pit under the mound at Graeanog (Kelly 1993). At site C2/3 Cefn Cwmwd, Anglesey (Maynard forthcoming) a rectangular structure defined by a gully was located 25m north-west of a mound, but there was no dating evidence for the structure. Very occasionally burnt mounds seem to be associated with settlements e.g. at Stackpole (Benson *et al* 1990)

and Meyllteyrn Uchaf (Kelly 1991). However, these burnt stone spreads are not necessarily the same as classic burnt mounds and in more typical cases there is no evidence of a settlement close by.

The Parc Bryn Cegin mounds fit the general pattern. Several had substantial troughs, in one case with hints of a timber lining (pit 2149, mound 2031) but some had small scoop-like pits. Under mound 2176 the three troughs were of different depths, apparently not always sufficient to reach the groundwater. The smallest pits on the site seem far too small to be used as boiling troughs and they may have been for dry cooking or possibly pits to hold stones for saunas, although no structures were associated with these mounds. The smallest mound on the site (5023) with a pit measuring only 0.64m in diameter was on fairly well drained shelf in the hill slope and it was unlikely that the pit would have held water effectively. The different depths of pits could represent use of the sites at different times of the year when the ground was wetter or drier, but there may also be functional implications. The burnt stone feature 7055 with its tent-like superstructure may represent yet another variation, perhaps involving drying as well as, or instead of, cooking. Particularly intriguing is the presence of slivers of oak characteristic of structural timber in most of the fills of the trough at mound 4199. This might indicate the presence of a structure nearby the remains of which have not otherwise survived. Alternatively old timbers might have been used as fuel.

It is notable that none of the Parc Bryn Cegin mounds had running water near by and their troughs must have been filled either by rain or ground water. This is important in considering their functions as the presence of a stream is often assumed to be vital to the function of burnt mounds. Their location certainly rules out their use for fulling, as this requires clean running water to wash the cloth afterwards (Jeffery 1991). The mounds at the eastern end of the site were in locations suitable for settlement but no evidence of contemporary settlement was found within the excavated areas. Perhaps the convention that burnt mounds were some distance from settlements was adhered to even when this was not required by ground conditions, or perhaps the settlement site was on the flat unexcavated area in the north-eastern corner of the site. The lack of any significant metal working debris from the mounds, despite an intensive search, demonstrates that this was not a function of the Parc Bryn Cegin mounds. The small number of charred hazelnut shells and charred cereal grains recovered indicate a possible low level of plant food processing or consumption but these cannot have been very important activities on or near the mounds. Although the late date for a cereal grain from feature 7055 does warn that others may also be intrusive and not representative at all of the burnt mound activity.

In Wales 49 dates are available for 30 mounds and are presented in table 5 and figure 52 (the early date from Graeanog has been excluded from figure 52). These dates have not been critically assessed for reliability, although all are from deposits related to burnt mounds or their pits. Most are on bulk samples of unidentified charcoal and must include some old wood effect. The comparison of the dates from the oak planks and ash plank from Nant Porth, Bangor, suggests an old wood effect on the oak planks of possibly 200 years. Many of the sites have single dates the reliability of which cannot be tested. Despite the potential problems with the dates it is possible to say that there is no previous evidence of burnt mound activity before about 2600 cal BC and the majority do not extend much after 600 cal BC. The mound at Dan-y-Coed shows not only by its date but also by the stratigraphy that it was in use in the later Iron Age, but the other later dates could easily be contaminated material. Much more evidence is needed before it can be suggested that burnt mounds were in use in the early medieval period in Wales.

No other site has produced dates on so many mounds in one area as Parc Bryn Cegin, making it uniquely able to demonstrate the chronological range and frequency of these sites in landscape terms. Apart from the very early date from beneath the Graeanog mound none of the other Welsh sites approaches the date of 3490-3120 cal BC to 3340-3020 cal BC on the earliest mound at Parc Bryn Cegin. However, the mounds at Greenlaw, Dumfriess-Galloway and Cloghaclocka, Co Limerick produced similar dates and Gortalea, Co Kerry produced a date that was considerably earlier. Burnt mounds from the Mid Neolithic are rare but there is no reason to consider them to be impossible.

The first peak of burnt mound activity on the site from 2490-2290 cal BC to 2290-2020 cal BC fits well with the earliest dates from other Welsh mounds. Direct comparisons are difficult because of the larger errors on many of these dates, even the very recent ones from Bryn Bachau. The general Welsh dates show a continuous range from the earliest dates through to about 1020-660 cal BC. Although there are some peaks in activity the Parc Bryn Cegin dates also provide a continuous range, which in reality probably conceals very discontinuous use. The two latest dates from Parc Bryn Cegin are open to some doubt as they are not supported but activity here could continue as late as 1120-900 cal BC. There is no evidence here of the later dates suggested from a small number of mounds elsewhere.

Parc Bryn Cegin suggests that Mid Neolithic burnt mounds are possible in Wales, but does not extend the date range at the later end. It does appear probable that burnt mounds were first used in Wales in the Neolithic and that they may have continued in use into the start of the Iron Age. The main



period of use seems to have started at the end of the Neolithic and continued throughout the Bronze Age. The fact that this full chronological range can be seen on a single site shows that the same general areas were repeatedly used even when individual mounds may have had a relatively short history.

The availability of only single dates for the majority of mounds prevents any assessment of the full period of use of these mounds or the identification of contamination. Of those sites with multiple dates Nant Porth cannot be used to study duration of use because all four dates were from one phase of trough lining. The two Bryn Bachau dates suggest a single phase of use but the unusually large error on one date makes it almost useless. Graeanog is comparable to mound 2176 at Parc Bryn Cegin in that nine samples were dated. These revealed two distinct, short periods of use separated by up to 1000 years. The four dates from Bryn Cefni indicate a single, fairly short duration. These support the results from Parc Bryn Cegin that even large mounds probably only had relatively short phases of use, although their location could be re-used at widely separated periods. The only other well-dated mound, Carne mound B, could have been the result of two or more short phases over a long period of time, but the dates are more broadly spread and the separate phases cannot be easily recognised. The single dates from the other mounds could be masking multiple phases over similarly long periods, and any attempt to understand the normal duration of use of a burnt mound will require much more extensive radiocarbon dating of these features.

## EARTH OVENS

### Introduction

(Figs 2, 5 and 6)

Seven small pits scattered across the site were identified as belonging to a distinct class of feature. The pits were circular or sub-circular, no more than 1.5m in diameter and 0.4m deep. Some of them had clay linings and all were filled with heat-cracked stone. Only one produced an artefact, a flint blade, but they are assumed to be prehistoric.

### Description

#### *Pit 1072*

(Fig. 53, plate 13)

The best preserved of these features was 1072 found in trench 1 just below the ridge (NGR SH 59538 70468, 61m OD). It was a near circular pit, 0.69m in diameter and 0.32m deep, with regular steep sides and a flat base. It was lined with a 0.12m thick layer of friable red-brown pinkish silty clay. This clay was thickest over the base of the cut and extended up the sides. In places at the top on the south side the clay projected out over the fill in a way suggesting the start of a sealing deposit. The main fill was composed of c. 75% heat-cracked stone in a matrix of loose, very dark brown loam with a high proportion of comminuted charcoal. The clay was not a strong red colour suggesting fairly gentle heating, as might be expected from hot stones being placed in the pit rather than *in situ* burning. Two small fragments of prehistoric pot were recovered from the fill.

Pit 1072 was surrounded by many burnt patches, the closest of which were 1074 and 1076. The latter had a very uneven, 'rooty' base and was probably a burnt out root hole. Feature 1074 looked hardly more convincing but as it was only 1.7m from 1072 it is possible that it was the site of the fire on which the stones were heated.

#### *Pits 1230, 1259 and neighbouring features*

(Figs 54 and 55)

Feature 1259 was roughly 36m west of 1072 and at about the same altitude (NGR SH 59500 70464, 60m OD). It was a bowl-shaped oval hollow, rather irregular in outline and measuring 1.5m by 1.4m and 0.38m deep. It was lined with pale silty clay, filled with burnt stones and charcoal and apparently sealed by another deposit of pale clay. There was no obvious evidence of heat alteration of the clay, but its pale colour may have been caused by the leaching of heat-altered compounds. There were two patches of burnt natural to the east of this feature (1209, 1217) and another possible oven 1230 was c. 21m to the west (NGR SH 59479 70462, 60m OD).

Feature 1230 was an ovoid feature with quite steep sides and a relatively flat base, measuring 1m by 0.8m and 0.28m in depth. It was filled by heat-cracked stones and charcoal. The fill of this pit merged into and was indistinguishable from a general spread of charcoal (1203) measuring 4.5m by 2m with a depth of up to 0.07m. This included some heat-altered stones but none of the shattered stones typical of

a burnt mound. The charcoal spread was closely related to the pit but none of the other features in this class have similar charcoal spreads and it is possible that this indicates a different use.

Just north of feature 1230, c. 7m away, was a collection of seven postholes and two pits. The postholes (1269, 1271, 1469, 1471, 1473, 1475, 1477, and 1479), with the exception of 1471, which was less convincing, were well-defined steep sided cuts tapering to narrow bases. The postholes were in fact large stakeholes as the posts had been driven into the clay rather than being placed in dug holes. They varied in diameter from 0.1m to 0.18m and in depth from 0.2m to 0.4m. Although some seemed to form straight lines of three holes it is not possible to see a clear structural plan in their layout. Two of the postholes were sealed by a thin deposit of charcoal and burnt stones (1263). To the east was a pit (1412) 1.12m in diameter and 0.2m deep. Its primary fill was a dark grey silty clay, with lenses of charcoal, but most of the fill resembled colluvium with few traces of burning. In the base of 1412 was a narrow stakehole (1414), 0.08m in diameter and 0.22m deep. To the south of this pit was another larger pit (1390) measuring 2.2m in diameter and at least 0.7m deep, although groundwater prevented its full excavation. The primary fill was a water deposited mid-grey clay with frequent charcoal pieces. Most of the fill consisted of grey silty sand with frequent large rounded stones.

About 8m north of pit 1259 was a complicated and irregular feature (composed of 1171, 1173 and 1177), most probably the result of animal burrowing. Cutting through this was the post-medieval ditch 1107, on the north side of which were two features (1179 and 1181), which might be interpreted as part of the animal burrowing except for their more regular shapes and firmer, greyer fills. Feature 1179 was oval in plan and shallow, though with fairly steep sides. It measured 1.0m by 0.55m and was 0.1m deep. Feature 1181 was circular, with gently sloping sides and measured 0.55m in diameter and 0.1m deep. About 6m further west was another similar roughly circular feature (1195) with steep sides and a grey fill. It measured 0.65m in diameter and 0.18m deep and was cut by the end of ditch 1182, which ran parallel to ditch 1107. These features would have been disregarded as of no archaeological importance were it not for a single Graig Lwyd flake recovered from feature 1181. This is a relatively large, thin flake with possible casual retouch or utilisation damage.

### ***Pit 1510***

(Fig. 56)

Pit 1510 was also located in trench 1 but further west (NGR SH 59476 70525, 58.5m OD). It was a shallow circular pit 0.6m in diameter and only 0.15m deep. It was lined with pinkish brown clay, although this only survived in a fragmentary state and was no more than 0.04m thick. The main fill comprised c. 33% heat fractured stones with flecks and fragments of charcoal. There was a lens of denser charcoal in the top of the fill. The lower interface of the fill was reddened by heat.

Pit 1510 formed part of an approximately straight line of four features, the others being 1324, 1523 and 1567. Feature 1523 was a rather irregular oval pit measuring 0.7m by 0.6m and 0.23m deep. It resembled 1510 in that it had a clay deposit in the base and fairly stony fills with some of the stones embedded into the clay. It differed, however, in the absence of evidence of burning. There were some charcoal flecks in the fill but few of the stones were burnt and the clay was not reddened. No finds were recovered. Adjacent to this pit was a small hollow, 0.45m across and 0.08m deep.

Feature 1567, 0.33m in diameter and 0.09m deep, may have been a posthole as it contained some larger stones, but too little of it survived to be sure. Cut 1324 was a sub-circular shallow sided feature measuring 0.81m by 0.6m and 0.28m deep. It was filled by an orange brown clayey silt with some larger stones and occasional flecks of charcoal. But, again, its significance is unknown. Whether any of these other features were related to 1510 or each other is not known and the apparent alignment may be coincidental.

### ***Pit 3133***

(Fig. 57)

In trench 3 between roundhouses A and B, about 16m outside the enclosure around roundhouse A, was another similar feature 3133 (NGR SH 59140 70378, 47.5m OD). This was a shallow, circular cut measuring 0.75m in diameter and 0.1m in depth. Its sides were gradually sloping, but the lack of steep well-defined sides may be due to its truncation. The base of the cut was heat reddened, but there was no specific lining. The pit was filled with layers rich in charcoal and largely composed of burnt stone. This was covered by a deposit of yellow-orange clayey sand with burnt stones. This was spread over and around the pit, and could represent a sealing deposit.

About 4m north-west of 3133 was a shallow rectangular cut 3078, measuring 1.25m by 0.64m and 0.1m deep. It had rounded corners, variably sloping sides and a fairly flat base. It was filled by a brown silty clay but contained no charcoal or artefacts. This feature seems too regular to be a natural hollow, but there is no evidence that it was associated with 3133.

### ***Pit 3314***

(Fig. 58)

Much further north-east in trench 3 (NGR SH 59248 70556, 45m OD) was feature 3314. Part of this had been cut away by a land drain but it measured about 1.36m in length, 1.04m in breadth and 0.25m deep. It was oval in plan and had steep sides and a flat base. There was no clay lining but the feature was cut into the natural clay so this may not have been necessary. The fill was composed almost entirely of heat-cracked stones with charcoal but no finds.

This feature was isolated from any other activity. It was about 68m north-east of the enclosure around roundhouses C, D and H and 69m from the possible burnt mound (3830). The only features in the area apart from land drains were widely scattered patches of burnt natural.

### ***Pit 6033***

(Fig. 59)

Pit 6033 was located in trench 6 (NGR SH 59017 70657, 30m OD) on the south-west end of the same knoll in the boulder clay that Pit Group VI occupied. It was about 42m from the main cluster of pits but 23m from the nearest of the outlying pits. It was about 15m from the burnt mound 6019 and could be interpreted as occupying the dry ground closest to and overlooking the burnt mound in the natural hollow. The burnt mound 6016 also lay c. 33m to the north-west.

Pit 6033 had a neat sub-circular cut, 0.89m by 0.76m and 0.19m deep, with gently sloping sides and a concave base. The pit was lined by a thin (0.04m thick) layer of plastic white clay over a layer of small stones, and filled by burnt, fire-cracked stones and charcoal. The lining, however, was not heat reddened, although the wetter conditions here may have caused the reduction or leaching of the red compounds.

On the other side of the burnt mound, on slightly higher ground, was another feature that initially appeared similar to 6033, as it was a small circular patch of burnt stones 6029. On excavation this proved to be little more than a hollow in the natural that had preserved a patch of burnt stones, and lacked the definition and complexity of infilling of 6033. The position of 6033 could indicate a relationship with the burnt mounds or with Pit Group VI, equally it could be an isolated feature of an entirely different period.

### ***Artefacts and ecofacts***

No artefacts were recovered from these features with the exception of pit 3133, which produced a flint blade (Fig. 51, SF 472). This was made on fine brown flint, with utilisation microchipping and gloss on one side edge and around the tip. It was recovered from the proposed sealing deposit over the pit.

The 18 samples of charred plant remains studied produced a large quantity of wood charcoal, and most of the samples also contained lumps of fused ash. The fill of pit 1072 contained two charred cereal grains (barley and wheat) and a small number of charred hazelnut fragments; occasional fragments of the latter were also present in pits 1259 and 3133. The identifiable charcoal was predominantly hazel, with lesser quantities oak. The presence of ash supports the argument that fires were set directly in the pits and most of the charcoal must have been fuel, but otherwise the plant remains give little indication of the function of these features. Processing grain and hazelnuts would seem not to have been carried out in or near the pits.

### ***Dates***

Fourteen samples were submitted, two each from the seven main pits. Three samples were also submitted from the group of features north of pit 1230. The duplicate measurements from each pit were statistically consistent except for those from pits 1259 and 3314 (see appendix XVI Fig. 16 for a lot of the results). These demonstrate some mixing and contamination of the deposits and it may be best to treat the latest dates as *terminus post quem* dates for these features. The earliest date from pit 1259 is much earlier than any other activity recorded on the site, except the very ephemeral Mesolithic presence, while its later date does compare very closely to other dates on these pits. The earliest date from pit 1259 should, therefore, probably be discarded. If pit 1259 is tentatively accepted as being of Early Neolithic date it means that three of the seven pits were of this early date (also pits 3133 and 6033). This early group cover the date range 3940-3650 cal BC to 3640-3370 cal BC (or later). These appear to have been roughly contemporary with the Early Neolithic building, though pit 1259 may have been somewhat later (appendix XVI, Fig. 17). The dates from pits 1072, 1230 and 1510 fall within the Bronze Age, between 1630-1450 cal BC and 1010-820 cal BC. If the date of 1690-1500 cal BC from pit 3314 is taken as the *terminus post quem* for this feature it could also fall within this time span. These dates reflect quite closely the range of the later peak of burnt mound activity on the site

(from 1630-1450 cal BC to possibly 1120-900 cal BC) (see appendix XVI, Fig. 18). The flint blade from pit 3133 fits with its Early Neolithic date, although it is not diagnostic. In the absence of artefacts from the other features it is only these dates that allow these pits to be associated with other activity on the site. That these essentially quite similar features are attributed to two very different periods may indicate a strong continuity in function such as might be expected of features with a largely practical function.

Of the three samples from the group of features north of pit 1230 two were from the primary fill of pit 1390 and one from the charcoal spread sealing some of the postholes. All these dates were statistically consistent and consistent with the two dates from pit 1230. These features, therefore, seem to form a roughly contemporary complex dating to between 1490-1310 cal BC and 1420-1210 cal BC.

## Interpretation

### *Earth ovens*

Not all these features had the same characteristics and some are difficult to distinguish from other features filled with burnt stone. They did have enough features in common, however, to justify classification as a particular feature type. Their small size, sub-circular shape and well-defined, often steep-sided cut, did generally separate them from burnt mound troughs and indeterminate patches and hollows containing burnt stone. It is suggested that pit 1072 provided the model for this feature type, which the other features approached more or less closely. The significant features were a small, sub-circular, fairly steep-sided pit lined with clay, which had been altered by heat. The fill had a large proportion of heat-cracked stone and often charcoal. Finds were rare; pit 3133 produced a fine flint blade, but otherwise there were no artefacts. Many of these features were quite isolated from other contemporary features.

The interpretation of these features is based largely on pit 1072, which was the best preserved of this class. In this case the clay lining was clearly reddened by heat. It covered the base and sides of the pit and there were suggestions that similar clay had been used to seal the pit. Pits 1259 and 3133 also had evidence for sealing layers covering the burnt stones. The fill of burnt stones must also be significant. Such a feature could be used as an oven. Similar technology is still used for cooking in Polynesia and Australia (Hurl 1990, Wright 2000). The pits would have been lined with clay, then filled with hot stones on which the food would be placed and the oven would be sealed with more clay. Most recent parallels are large, catering for communal feasts, but similar technology would function for smaller quantities of food. Hurl (1990) states that smaller versions with an area of only 1m<sup>2</sup> were in daily use in Papua New Guinea. There are also ethnographic records from Canada of similar ovens, which were described as being 2-4m in diameter and used exclusively for cooking starchy roots (Campling 1991).

In continental Europe archaeological earth ovens are a relatively common find. They are best known from Switzerland but are also found in France, Germany and elsewhere. The typical earth ovens are large rectangular pits filled with burnt stones, but in France circular earth ovens are sometimes found, measuring on average 1.7m in diameter. The classic earth ovens date from the Mid Bronze Age to the Mid Iron Age but some in France have been dated as early as the Neolithic (Ramseyer 1991). Most of these examples do not have a specific clay lining, although in the Swiss examples the earth into which the pit is cut is often fired around the edges of the pit (Kenney pers. comm.). All do have burnt stones and functioned by being covered in earth to seal the heat in; traces of this is also sometimes preserved in the Swiss examples. The identification of the Parc Bryn Cegin pits as earth ovens therefore depends on them being deliberate, neatly dug pits filled with burnt stone and on the evidence for a sealing layer of earth or clay. The lack of evidence for *in situ* burning in some of the pits may indicate that the stones were heated on a fire outside the pit and there was no fire lit in the pit itself. Although small compared to most archaeological examples they were not too small to function as daily ovens as described ethnographically.

While burnt mounds are widely discussed the term 'earth oven' is not generally used in British archaeology, although earth ovens dating from the Neolithic were identified at Clacton, Essex (Hedges 1980, 27). The dates on the Parc Bryn Cegin examples indicate that they belong to two periods; the Early Neolithic and the Bronze Age. The two earth ovens (3133 and 6033) closest in date to the Early Neolithic building were the furthest away from it (330m and 430m away respectively), and so presumably not directly related to its use. If these were small ovens for everyday cooking this would be unlikely to take place far from contemporary settlement and these might be the only surviving evidence for ephemeral settlements with very slight structures, the traces of which would not survive. The scarcity of artefacts also argues that if these were settlement sites they were very short-lived and few activities took place there. The Graig Lwyd flake recovered from feature 1181 near oven 1259 could indicate that the few features in this area were part of one of these short-term settlements. The presence



of Graig Lywd flakes in the Early Neolithic building proves that this material was being used at this early date. The location of 6033 on a well-drained knoll in the otherwise wet western end of the site suggests the selection of a suitable settlement location. Oven 3133 was not far from the roundhouse settlement, the presence of which proves that this part of the site was considered suitable for settlement in prehistory.

These small, rather insignificant features may, therefore, be the only traces of a type of Early Neolithic settlement pattern very different to that possibly represented by the large timber building. At about the same time that the building was in use or slightly after people may have been making over night camps or stays of a few days within the area. It is possible that pit 3146 in Pit Group VII may have also formed part of this pattern. Whether the two stray early sherds in Pit Group I also came from similar activity is hard to say.

If all the earth ovens had the same function then the Bronze Age examples could also represent short-term settlement. None of the Bronze Age examples are very close to burnt mounds but 1510 and 1230 are only 55 and 77m from contemporary mounds. It is impossible to determine whether they represent activity were directly related to the burnt mounds, such as temporary occupation sites for people tending the troughs or whether they were related to different activities. Pit 1230 is of particular interest in this context. Its associated charcoal spread made it resemble a burnt mound although heat-cracked stones were only numerous in the pit and not in the charcoal spread. The latter might represent repeated rakings from fires in the pit. In addition about 7m to the north-east was another spread of charcoal sealing a group of postholes and associated with two large pits. A kink in the field boundary on the eighteenth-century map and the field name 'Cae Drws' suggested a possible habitation in this area (Smith 2005). Although no ground plan could be determined the postholes did imply the presence of some sort of structure, and pit 1390 could have acted as a well. The absence of finds from these features implied that these features might not in fact be post-medieval and the radiocarbon dates confirmed that instead of being part of the proposed eighteenth century habitation these features were Bronze Age. The dates from the fill of pit 1390 and the charcoal spread over the postholes were consistent with the dates from pit 1230 and it seems probable that these features were all functionally related.

Although pit 1390 had a stony fill the stones were not burnt and this complex does not seem to have been a classic burnt mound site. This large pit, however, penetrated the present water table and could have been dug to as a well. It is possible that the charcoal spread 1263 represented the site of a fire and that the stakes were for suspending items to be dried or smoked. The pit 1230 with its large charcoal spread seems not to have been a short-use pit oven as argued for the other similar features, but was possibly a repeatedly use open fire pit. It is not clear whether this complex of features was another example of the variety of activities that might be included under the general term 'burnt mound' or whether it was the site of a settlement. The absence of finds might point to its use for a specific function rather than for general settlement activities.

## **MISCELLANEOUS FEATURES OF PREHISTORIC OR PROBABLY PREHISTORIC DATE**

### **A barb and tanged arrowhead and a putative cairn**

(Fig. 5)

During ploughsoil stripping in trench 4 an area of stones (4112) was encountered. The monitoring archaeologist stopped the mechanical digger to investigate the stones and found a perfect flint arrowhead in the top of the stone deposit. The arrowhead is a bifacial barbed and tanged arrowhead (Fig. 51, SF581) is made from light brown flint. It is of a type uncommon in Wales, being of the Conygar Hill type as defined by Green (1984), a type most commonly found in burials in association with Food Vessels. It is complete and undamaged and so is unlikely to have been moved since its deposition, suggesting that it was not a stray loss, as is often the case with arrowheads, but a deliberate deposit.

The stone deposit (4112) in which it was found was composed of loosely agglomerated rounded medium and large cobbles and covered an approximately oval area of about 5.8m by 4.1m. This deposit was located towards the western end of trench 4 at about 61.5m OD (NGR SH 59288 70361). Investigation showed that the stones were embedded into the boulder clay and were little different to other deposits of cobbles on site that appeared to be the result of colluvial or plough sorting. A small oval patch of charcoal (4176) within the area of stones appeared to be a burnt tree roothole and as no other evidence of anthropological activity could be detected the deposit was interpreted as natural. Time pressures prevented the deposit from being fully stripped away so it remained possible, although

unlikely, that evidence remained obscured under the deposit. The loose scatter of stones meant that any pit or other significant feature would have been visible between the stones.

The specific type of arrowhead found does raise the possibility that despite the impression gained on site the stone deposit did represent the remains of a cairn. It is impossible to be sure exactly how it related to the post-medieval field boundaries but one of the early nineteenth-century boundaries did run close to the position of the stones and might have helped preserve the deposit. Perhaps most suggestive of a cairn was a deposit of large rounded boulders (4148) in the top of a nearby natural hollow (4182). These stones were up to 0.9m in length and seemed to have been deliberately backfilled into the hollow. The connection between the two features was not made on site and deposit 4148 produced no finds to suggest its date. However it is possible that these stones came from a cairn over deposit 4112 and that they were dumped in the hollow to level the field during one of the post-medieval phases of reorganisation of the field boundaries. Hollow 4182 lay about 11m uphill from deposit 4112 but it was probably less effort to move the stones to this hollow rather than to the nearest field boundary. This evidence might be combined to tentatively suggest that the arrowhead belonged with a cremation burial under a cairn, but the majority of the feature had been destroyed during agricultural improvements.

### **Ditch 2157**

(Fig. 5)

In trench 2 north of the burnt mounds was a slightly curving ditch, aligned roughly east to west and about 15m long, 0.67m wide and 0.2m deep. It was quite regular and well-defined with gently sloping sides and a flat base. The western terminal was pointed and after a gap of about 0.2m the ditch seemed to continue again for a further 2m. The fill was a soft grey clayey silt. Just to the north was a small patch of charcoal-rich deposits in a hollow 2156. There was a larger, but more amorphous burnt patch (2223) to the north-east.

This area had many drains of various sorts and superficially this ditch seemed to fit in with the drainage system, but the ditch was too shallow to be a recent drain and the fill was much greyer in colour than the post-medieval drains in the area. The burnt patches are possibly unrelated to the ditch and could be connected to the damaged traces of burnt mound 2192 just to the north-east. The main argument for these features being of any interest is a small collection of five flint flakes that were recovered from this area, one from the extension to the ditch. These items (SF 683, 684, 685, 686 and 687) were all unretouched flakes and flake fragments from pebble flint and undiagnostic of any particular period, but their concentration in this one area does hint at prehistoric activity.

## EARLY IRON AGE ROUNDHOUSE

Roland Flook and Jane Kenney

### Roundhouse E

(Fig. 60, plates 15 and 16)

#### *Description*

In the western end of trench 4, partway down the slope towards the Afon Cegin (NGR SH 59272 70379, 59-60m OD), was a narrow circular groove cut into an area of exposed the bedrock (Fig. 5). This was associated with numerous small pits and postholes both within and around the circle. Immediately to the north-east was another semi-circular groove, and to the west was a deposit of charcoal containing metal-working slag, associated with more postholes. All the features were cut into the shale bedrock, which had been exposed since the last glaciation, as there were patches of glacier polish on its surface. Much of the western half of the circular groove was sealed beneath a deposit of stones (4196). This was an extensive linear deposit oriented south-west to north-east, and measured 13.68m by 5.95m by 0.2m thick. Stones, some of them fire-cracked, comprised 50% of the context in a matrix of brown silty loam. Deposit 4196 sealed several of the major features in this area. Another patch of stones, essentially the continuation of the same deposit, sealed features further to the south-west and was recorded as 4261.

The narrow gully (4267) cut into the bedrock described a near perfect circle with an internal diameter of 8.63m. The gully measured up to 0.3m wide and 0.27m deep, being deepest on the north-west side, and was filled by brown silty loam containing occasional burnt stones. Along the north-western arc were two deeper hollows (4367 and 4368), which were up to 0.18m deep and filled with stone.

On the western side there was a gap in the circle with a posthole marking the ends of the gully at each side. These postholes were oval in plan with vertical sides and flat bases. To the south of the gap posthole 4318 measured 0.6m by 0.25m by 0.29m deep, and on the north side posthole 4192 measured 0.61m by 0.46m by 0.48m deep. Both contained stones but those in 4192 were too densely packed to have been post packing-stones and were presumably deposited after the post had been removed or rotted away. The gap between the two terminal postholes 4318 and 4192 was 1.65m. To the west of this gap was a deposit of compacted, very dark brown silty loam (4250) containing frequent charcoal, occasional small burnt stones, and industrial residue including iron slag and fragments of furnace lining. It measured 2.9m by 1.6m by 0.16m thick.

Inside the circle were various hollows, pits and postholes. A group of four postholes (4226, 4228, 4246 and 4252) was located towards the western side of the centre of the circle. They formed a rough rectangular alignment measuring *c.* 2.4m by 1.7m and were oriented north-north-east to south-south west. All four cuts were sub-circular in plan with steep or vertical sides and flat bases and were filled by grey brown silty loam, very dark in colour in some cases, with shale fragments. The postholes measured up to 0.52m by 0.48m, and up to 0.41m deep. In posthole 4226 four stones were located on their ends around the edges of the cut with a fifth stone in the centre. The other postholes all contained some larger stones as well as occasional burnt stones and varying amounts of charcoal. Disturbance or erosion on the north side of posthole 4252 had caused a hollow and partially confused the plan of the feature. The two most northerly postholes 4226 and 4228 were sealed by deposit 4197, a layer of loose dark brown silty loam containing charcoal flecks and frequent stones, many burnt and fire-cracked. It was similar to layer 4196 above but darker and with a higher proportion of fire-affected stone and charcoal.

The interior of the circle was repeatedly and intensively trowelled and any loose deposits were removed so that only intact bedrock remained in this area. This process revealed several shallow hollows, some more convincing than others as anthropogenic features. Four features were close to the inside of the circular gully. These (4381, 4269, 4361 and 4391) were between 0.2m and 0.08m deep and no larger than 0.29m across, with the exception of 4361 which measured 0.54m by 0.42m. Features 4381 and 4391 had steep sides and were fairly well-defined, but the other two had gently sloping sides and uneven bases. They were filled by dark brown silty clay, except 4391, the fill of which consisted largely of charcoal and a single possible packing stone.

Scattered over the middle of the circle were several features more or less convincing as postholes (4327, 4389, 4393, 4395, and 4399). Most were roughly sub-circular with steep sides and they were generally filled by brown silty loam with a large proportion of shale fragments. The largest (4389) measured 0.45m by 0.36m and they varied between 0.06m and 0.26m in depth. Other features, often the less regular ones, contained fire-cracked stones. Cut 4291 was composed of two hollows, neither more than 0.16m deep, and both parts contained fire-cracked stones, and frequent charcoal flecks. Other hollows, some quite poorly defined, contained numerous burnt stones. These features (4277,

4281 and 4355) measured up to 0.69m by 0.54m but were no more than 0.2m deep. The most irregular features, less than 0.15m deep (4180, 4248, 4241, and 4397) might be considered to be natural hollows. Generally they were filled by a grey-brown silty loam containing shale fragments, similar to the surrounding natural deposits, but some also contained burnt stone and charcoal.

The southern arc of the circular gully 4267 was truncated by a later feature (4283), a roughly rectangular hollow with rounded corners oriented south-east to north-west. It measured 1.56m by 1.25m by 0.24m deep and had steeply sloping edges on the uphill side, but was less well-defined elsewhere. Its base was generally flat, though rather irregular and had been coloured brown, pink, grey and black by direct heating. Within the cut was a group of nine large rounded stones (4263) with fairly flat upper surfaces and packed closely together. The stones ranged in size from 0.2-0.35m and were sealed by 4179, a 0.14m thick charcoal-rich layer. A natural fissure (4286) ran into 4283 from the south-east.

Approximately 2.0m to the north-east of the circular gully 4267 was a further semi-circle cut into the rock (4315). This comprised two arcs: the western one was 4.7m long by 0.23m wide, the eastern one, which was more irregular, was 3.0m long by 0.18m wide. The grooves had steeply sloping sides, vertical in places, with irregular bases and a maximum depth of 0.15m, although in places the eastern arc was only 0.03-0.08m deep. They were filled by greyish brown silty loam with frequent stones and shale fragments. There was a gap of c.1.0m between the two arcs and the eastern arc did not quite follow the circle defined by the western one so that the gap was staggered. The complete feature measured 5.6m in internal diameter.

Located almost centrally in the gap between the two arcs was a single rock cut feature (4330). This was roughly circular in plan, with steeply sloping sides, vertical in places. It measured 0.41m in diameter and 0.15m deep and was filled by greyish brown silty loam with shale fragments and occasional medium stones. Located towards the eastern end of the western arc and immediately adjacent to its southern edge was a small sub-oval shaped feature (4365) only 0.06m deep.

The bedrock into which the features on this part of the site were cut was shale with strong bedding planes. At its surface it became very friable and easily broke up leaving hollows and fissures often running nearly perpendicularly across the orientation of the bedding planes. It was impossible to distinguish between natural fissures and anthropogenic features without full excavation and even then it was often difficult. Features with irregular shapes that failed to form discernible patterns were assumed to be natural fissures, although occasional burnt stones and charcoal fragments had been incorporated into their fills. These features were recorded as 4284, 4304, 4309, 4346, 4350, 4369, and 4373. Two of these apparent fissures (4275 and 4279) formed a neat triangle on the south-eastern arc of the circular groove 4267. These gullies were well-defined with steep sides and were up to 0.13m wide and 0.08m deep. They were filled by brown silty loam containing frequent small stones, some burnt. Gully 4275 seemed to continue north-west into the circle as feature 4306.

Various features, some apparently postholes, were distributed to the east of the two ring-grooves (4267 and 4315). The most regular of these (4244, 4273, 4293, 4299, 4302, 4337, 4359, 4378 and 4386) were circular or sub-circular, well-defined with steep sides and a flat base. They varied in size from 0.42m in diameter to 0.2m and in depth from 0.16m to 0.06m. Generally their fills were brown silty loam, and some contained occasional larger stones and charcoal flecks. Features 4288 and 4290 were similar but had more gradually sloping sides. They were up to 0.34m in diameter and 0.14m deep. Other features (4332, 4370 and 4297) were more irregular, although up to 0.19m in depth, and were probably natural hollows. A sub-rectangular cut (4271) to the west of the semi-circular groove 4315 was probably a natural fissure, its regularity and depth (0.36m) due to fracturing of the rock.

Another group of features were arranged in a rough line to the west and south-west of the circular groove 4267. The line ran roughly north-east to south-west, with one feature (4363) situated off the line. Four of the features (4323, 4353, 4339 and 4363) were sub-circular and well-defined with steep, near vertical sides. These varied in size from 0.55m in diameter to 0.28m and from 0.49m deep to 0.15m. The fills were grey or brown silty clays, all contained some burnt stones and 4323 and 4339 contained larger stones that may have functioned as post packing. There were also sub-circular features with more gradual sides and bowl-like profiles (4333, 4347 and 4351). These were up to 0.4m in diameter and up to 0.23m deep. They also contained burnt stone in their clayey silt fills. In this area there was also a hollow where a layer of stones (4310), some burnt, was covered by a layer of charcoal (4307) and this may have been a hearth.

Several very angular features (4312, 4314, 4319, 4342 and 4344) exactly followed the line of the bedding planes and it is assumed that these were natural fissures, although some did contain fire-cracked stone.



Further south-west an irregular curvilinear rock-cut feature (4383) was investigated. It was at least 7.8m long by generally 0.3-0.4m wide (0.7m at the widest point) and 0.17m deep maximum. It was filled by dark brown loamy silt with shale fragments and frequent charcoal flecks.

Stripping of this area showed these to be an isolated group of features, but a broad baulk, over 35m wide, between this and the building plateau to the west could have obscured further features. To the west of this baulk in trench 3 was a shallow ovoid cut (9445) measuring 2.4m by 1.3m and 0.25m in depth (Fig. 5). This was filled by red-brown loamy silt with large stones, gravel and fairly frequent charcoal. It also contained fragments of possible forge waste.

### ***Finds***

There were very few finds from this area and most were either intrusive or residual (see table 6 for find distribution and the appendices for more detailed descriptions). Two tiny joining fragments of a Roman oxidised potsherd found in possible posthole 4271 are almost certainly intrusive. If there had been activity here in the Roman period more artefacts would have been present. Similarly the tiny post-medieval pot sherd from the ring-groove of roundhouse E could easily be introduced to the gully fill from the ploughsoil. A fragment of coal from posthole 4228 was probably also intrusive. If coal had been used as a fuel on the site much more would be expected than this one tiny fragment. A similar argument must apply to the minute fragment of lead found in deposit 4197. A small Mesolithic-style core from a natural fissure 4312 to the south-west of the house could suggest Mesolithic activity somewhere in the area, and a burnt flint flake was recovered from posthole 4248. A thin shaping flake of Graig Lwyd stone from posthole 4226 is also assumed to be residual.

This leaves only metalworking debris, which was studied by Peter Crew (see appendix XIII.5) and his conclusions are summarised below. Small quantities of slag, often no more than one or two spheres, were found across the site wherever the soil samples were tested for magnetic materials. Samples of less than 1g in weight can therefore be disregarded as originating from material generally present in the ploughsoil. However, there was genuine evidence of metalworking in this area. Most of this evidence came from one deposit (4250), the dump of charcoal to the west of the circular gully. The wet sieved samples from this produced a total of 410g of slag, both magnetic and non-magnetic. The magnetic slag included small amorphous prills and spheres and the non-magnetic slag included vesicular glassy low density slag. Although not particularly diagnostic it was considered that the slag probably represented smithing. This was confirmed when the largest piece from deposit 4250 was examined microscopically, and was shown to be wüstite (iron oxide) rich and typical of smithing.

In addition there was a piece of heavily vitrified clay with a dark glassy cooling surface. This would have formed in the high temperature zone of a smithing hearth, near the blowing hole. This suggests metal-working in the immediate area and the presence of 5g of magnetic slag from the base of the hearth 4283 helps to identify this as the probable smithing hearth. As discussed above the scatter of tiny pieces of slag over the rest of this area cannot contribute to the understanding of this activity.

The rather irregular feature (9445) to the west in trench 3 contained two flat flake fragments of mineralised iron, coated with corrosion products, which are probably forge waste. It also had tiny fragments of burnt bone. Although this feature was about 50m south-west of the main deposit of smithing debris these finds may have been related.

### ***Charred plant remains***

The charred plant remains from the 36 samples studied consisted of large amounts of mostly unidentifiable wood charcoal, charred grains and a few hazelnut shell fragments. A small number of cereal grains came from three of the four large central postholes and from other features inside the roundhouse, as well as from the ring-groove itself. Crop plants such as barley, emmer wheat, naked wheat, oat, and spelt wheat were identified, but there was very little chaff. More substantial grain assemblages were recovered from contexts relating to the metal-working activity. Considerable quantities of oats, barley and wheat and a little rye were recovered along with crop weed seeds, which were able to provide information regarding crop husbandry at the time. There was a small quantity of charred hazelnut shells and hazel was the most frequently recorded charcoal species, followed by oak. The fill of posthole 4228, one of the four central postholes produced charcoal 'slivers' probably derived from structural oak timbers. There was also a little ash charcoal from the metal-working hearth deposits. Some of the material came from the charcoal deposit (4307) over hearth 4310, under the stones 4261 and close to the postholes south-west of the roundhouse. The similarity of this assemblage to those from the contexts associated with the metal-working (hearth 4283 and deposit 4250) suggests that 4310 was contemporary with these and was probably a subsidiary hearth. Its location may indicate the adjacent postholes also belonged to the metal-working activity, but that cannot be proved.

### ***Radiocarbon dates***

Eight samples were submitted from the area of roundhouse E, but four of these proved to date to very much later than the roundhouse itself. This gives a very few samples from which to establish the date of the structure. The problem is compounded by the poor relationship of any of the dated samples to the main roundhouse. The only features reliably related to this structure were the entrance postholes and the ring-groove. No samples were collected from the postholes and the shallow ring-groove was too disturbed to be a reliable context for dating as demonstrated by a small fragment of post-medieval pottery recovered from it. The date for the main structure, therefore, relies on two samples from a posthole that appeared to form part of the proposed post ring related to the roundhouse. The two dates were statistically consistent so suggesting minimum mixing of the posthole fill but the doubt about the feature's relationship to the structure is problematic. The other two dates were from one of the deep central postholes and from a charcoal layer sealing the posthole. As discussed below it is considered that these four central postholes were related to a different structure to the main roundhouse. The date from the central posthole was slightly earlier than that from the possible post-ring, although the charcoal spread was contemporary with the post-ring. The plateau at this point in the calibration curve makes detailed comparisons of the dates difficult, but it is possible that the four-post feature pre-dated the main roundhouse. It is also possible that all this activity took place at roughly the same time or over a short timespan. The early activity in this area, therefore, seems generally to date the fifth to sixth centuries cal BC (appendix XVI, figs 20 and 21) but the archaeology suggests the existence of more than one phase of activity in this period. The problems with the calibration curve and scarcity of stratigraphy mean that even if numerous samples were dated the probability is that these phases could not be clarified through radiocarbon dating.

Two samples from the charcoal deposit 4250 and two from the fill of hearth 4283 were submitted for dating. All four dates were statistically consistent, indicating contemporary activity but this activity dated not to the Iron Age but to the early medieval period between cal AD 480-650 and cal AD 600-760 (appendix XVI, figs 20 and 22). Modelling the dates gives a duration of use of 10-80 years, although probably less than 40 years. Considering the limitations of radiocarbon dating in identifying short time spans this is likely to suggest a short, single phase of activity.

### ***Interpretation***

#### ***The ring-groove roundhouse***

The circular groove 4267 was so perfectly formed that it must have been deliberately dug. With the two postholes marking an entrance in the western arc this defined a circular building. The groove was not wide enough or deep enough to have held structural timbers and the way it ran into the entrance postholes demonstrated that it was not a drip gully. It is most likely to have supported a wall, making this a fairly typical example of a ring-groove roundhouse.

Unless the roof was supported on rafters resting directly on the ground structural postholes would be expected inside the house. The four large cut features seem to be good candidates. Their steep profiles and in some cases the presence of packing stones suggest they were postholes for quite substantial posts but their off centre position seems unlikely for major roof supports. As the posts were roughly aligned on the entrance to the roundhouse they could have been part of a complex porch structure, but it is not clear why such a porch would require large posts inside the house. The difficulty in fitting these postholes into the main roundhouse raises the possibility that these belonged to a different phase of activity. They may indeed have been a porch but for another roundhouse. The numerous postholes in this area provide some scope for imagining another roundhouse built slightly further uphill of the main one, although none can be made to define a circle. This proposed roundhouse would have had its porch on the same side as that in roundhouse E and both entrances would have been very similarly aligned, perhaps suggesting that one structure was built to directly replace the other. The four posts could have formed a four-poster structure, usually interpreted as a granary, but as this could not have been contemporary with the ring-groove house it would have been isolated, whereas these features were usually adjacent to roundhouses.

If the four large postholes were not part of the ring-grooved house this would probably have needed some other support, most likely a ring of posts. As the posts would be resting directly on bedrock and taking a vertical thrust from a ring beam supporting the roof, it is possible that they did not require deep postholes. Many of the features that were most convincing as postholes lay on a circle about 6m in diameter nearly concentric with the wall line. The bedrock was most disturbed along the western half of this circle, which may explain the absence of postholes here. The lack of a complete circle and the irregular nature of some of the features make the interpretation of this as a post ring tentative, but reasonable. The arc of four smaller features close to the ring-groove was sufficiently regular to suggest

that these were also postholes, although perhaps for internal features rather performing structural functions.

The semi-circular gully (4315) to the north of the main roundhouse was more irregular and less well-defined but in the context of the other structure it seems likely that it supported a similar wall, although this may have been an enclosure rather than a roofed structure. Feature 4330 appeared to be a posthole and might have given some structural support, although this would have prevented this gap from being used as an entrance.

Great care had to be taken when excavating these narrow grooves not to manufacture features or merely follow natural fissures. Initial cleaning suggested a third ring-groove to the north but it could not be consistently followed and proved not to be anthropogenic. Similarly there were problems with the linear features running through the main roundhouse. Most were concluded to be natural but two (4275 and 4279) formed such a neat triangle on the side of the roundhouse that it was tempting to see them as deliberate. However, they had no obvious function and 4275 seemed to continue into the roundhouse as gully 4306, which was indistinguishable from the natural fissures. It is probable that these features were all natural.

The same wariness must be applied to all the possible postholes around this area. Some excavated as postholes proved to be so irregular that they were almost certainly natural. Others were very shallow and may have been just worn hollows in the surface of the bedrock. On the east side approximate lines can be made with some of the more convincing features, such as 4302, 4299, 4293 and 4359, also 4244, 4386 and 4378, but no overall patterns are formed. Some of the features to the west were large and well-defined and had stones appropriate for post packing so they are convincing as postholes. Although they lay in a rough line it is not possible to form these into a structure, but there may have been a series of paired posts. Postholes 4323 and 4339 were similar in shape and contents, 4363 and 4347 were also similar, and 4353 and 4351 form another, though less well matched pair. All three pairs were 1.5m-1.7m apart.

It seems that this settlement was unenclosed. A search was made for an enclosure ditch and feature 4383 was investigated as the best potential candidate, but proved to be slight, irregular and could only be followed for about 9m. It was not convincing as an enclosure ditch and was probably another natural channel or fissure.

#### *The early medieval activity*

The stones placed as a base to the hearth suggest that feature 4283 was more than just a domestic cooking hearth. As it cut the line of the roundhouse wall it was clearly a later phase of activity but the radiocarbon dates demonstrated that it was very much later, in the early medieval period. Pieces of furnace lining and iron slag found in deposit 4250 suggest metal-working in the vicinity and this hearth was the only likely location. The presence of slag in the hearth deposits and the contemporary dates reinforce this association, and it is likely that this was a small-scale smithing hearth. The possible forge waste from feature 9445, over 45m to the west, may suggest that this activity was originally more extensive. Although the feature itself resembled a root hollow and the charcoal, burnt bone and fragments of forge waste may have been incidentally introduced by erosion down the hill. The charcoal deposit (4197) over the northern part of the four-post feature was dated to the Iron Age and was not related to this later activity.

It is possible that some of the postholes in the area were associated with this activity. The group of possibly paired postholes south-west of roundhouse E might make most sense in relation to this later activity, although their date is not known. The presence of a small hearth in this area apparently related to the smithing activity may support this argument. It would be unusual for smithing to take place on an exposed hillside with no protection, so some shelter might be expected. The postholes seem to have been too far from the hearth to be very useful as a wind-break, although they are on the side of the prevailing westerly winds. The spread of stone (4196) covering much of this area was similar to other deposits across the site that appeared to be related to ploughing and colluviation. The band running perpendicular to the slope could suggest that these stones had moved down hill and gathered at some slight change in the angle of the slope. However, the proximity of the stones to the archaeological features may not be coincidental. This spread did form a roughly rectangular deposit. No organisation or patterning of the stones was noticed and the spread was stripped off by machine without detailed recording. If the stones had been the remains of a structure some evidence of this might have been expected to be visible. The rounded stones were also poor building stones and at least some larger, more angular stones might have been expected to form the foundations and quoins. The chance of the stone spread being the remains of a rectangular stone structure or the stone footings for a structure is unlikely but not impossible. It may, however, have been a bank providing some shelter to the working

area. In this case it might be significant that the waste deposit 4250 was dumped downhill of the stones, presumably beyond the limits of the working area.

## Discussion

### *Mid Iron Age settlement*

by Jane Kenney and George Smith

The settlement activity represented by roundhouse E and the proposed earlier structure seems to date to the Mid Iron Age, about the fifth to sixth centuries cal BC. The two or more phases probably occurred within a fairly short space of time, although at this point in the calibration curve it would be difficult distinguishing activity even 100 years apart. Although not clear the radiocarbon dates suggest that a structure incorporating the four large postholes was probably earlier than the ring-grooved house.

It is not necessary to look far for parallels to the ring-groove roundhouse. About 800m north, in the middle of henge A the 1960s excavations revealed a very similar roundhouse (house A2), although at about 15m in diameter it was much larger (Musson 2001). It was defined by a similarly narrow wall slot and had a well-defined post-ring to support the roof. Comparable settlements with origins in the first millennium BC were also found at Moel y Gerddi and Erw Wen, both near Harlech, Meirionnydd (Kelly 1988). Houses on both sites were defined by ring-grooves with packing stones to support planks. The main house in Llandygai henge A had impressions in the base of its ring-groove suggesting the wall was composed of substantial planks set on end (Musson 2001, 97). The lack of packing stones in the roundhouse E ring-groove could be the result of erosion by modern ploughing, but cutting the groove into bedrock with dimensions ensuring that the planks would have fitted snugly may have removed the need for packing stones. Despite the presence of plough erosion at Parc Bryn Cegin the ring-groove of roundhouse E was actually deeper than at the Harlech houses, possibly providing extra support without packing.

Other timber-walled roundhouses of roughly the same period have been found at Crawcwellt, near Trawsfynydd, Meirionnydd (Crew 1998). The Crawcwellt houses were occupied between c. 300 BC until probably a little before the Roman invasion. They were all very similar in design, varying between 8-10m in diameter with stake walls succeeded by stone walls and distinguished by the presence of arcs of external drains on the uphill side, a feature that was absent at Parc Bryn Cegin. The walls of these were built of simple lines of stakes, presumably supporting hurdling. The bedrock at Parc Bryn Cegin did not allow stakes to be driven, but stakes rather than planks might have been supported in the wall slot. Without specific evidence for planks it is possible that the wall of roundhouse E was made of stakes and wattle.

Internal post-ring roundhouses are a widely known type of construction in this period, for example in Wales at Walesland Rath, Pembrokeshire (Wainwright 1971) and Lawhaden, Dan y Coed and Woodside, Pembrokeshire (Williams and Mytum 1998) and in England at Danebury, Hampshire (Cunliffe 1984) and West Brandon, Co. Durham (Jobey 1962). Both houses in henge A at Llandygai had well-defined post-rings, perhaps supporting the presence of such a structure in roundhouse E. However, ring grooves, possibly for wattle lining were also found on the inside of clay-walled round houses of the Middle Bronze Age at Mellteyrn Uchaf on the Llŷn peninsula (Ward and Smith 2001). The same method of lining a clay-wall was still in use possibly as late as the 2<sup>nd</sup> century AD at Pant on the Llŷn peninsula (*ibid*). It is, therefore, also possible that roundhouse E had a clay wall lined with wattle. If the internal post-ring is considered unconvincing this would explain how the roof was supported. Assuming that roundhouse E and the smaller structure (4315) were contemporary a clay wall up to 1.5m thick might be possible.

The Crawcwellt stake-walled houses were all built on slight manufactured terraces, Moel y Gerddi was built on the fairly level top of a low rise whereas Erw Wen was built on a terrace on a gentle hillslope. Roundhouse E on the other hand seems to have been built on a marked slope without a terrace; the ground sloped down by about 1m across the diameter of the roundhouse, giving a slope of roughly 1 in 9. If it did have a terrace it must have been built up rather than cut into the slope, but the consistent depth of the ring-groove suggests otherwise. The wall might have been of different heights around the circumference to compensate for the slope and creating a level wall plate. It may also be that the floor itself was terraced up above the slope.

The entrance of roundhouse E was on the western side, facing the prevailing winds but was downslope and therefore avoided flooding on the slope. If the four central postholes did represent the porch of another roundhouse, this too would have had its entrance on the same side. The same downslope but windy orientation was the case with the house at Erw Wen. The postholes to the south-west of the entrance at roundhouse E could have been part of a wind-break although they may have belonged to the later phase of use of the house site in the 5<sup>th</sup>-7<sup>th</sup> century AD, long after the house had disappeared from view.



The slight ring-groove (4315) the north-east of roundhouse E might be suggested to be an ancillary structure. The main house in henge A (house A2) also had an adjacent smaller structure (house A1), although this was much larger and more substantial than at roundhouse E. In the latter case the position of the ancillary structure in relation to the main house and the similarity of the ring-grooves suggest that they were contemporary, but this cannot be proved. The possible interpretation of the four central postholes as the porch of another house suggests that there were more phases and complexity to the roundhouse E area than initially evident. The settlement in henge A was also surrounded by postholes, although in greater number than around roundhouse E. Most were interpreted as post pairs or four-post structures, but the way in which two of the latter overlapped the wall of house A2 demonstrated more than one phase of this settlement, with houses A2 and A1 possibly not contemporary. If the four posts in roundhouse E were a four-poster structure they might have been contemporary with ring-groove 4315 and possibly earlier than the main roundhouse. A four-poster would be highly unlikely to exist alone with no associated occupation. However, it does seem more likely, if unprovable, that the main house and ring-groove 4315 were contemporary and that the four posts belonged to another, probably earlier phase of house, along with some of the postholes to the east.

Llandygai house A2 had storm gullies protecting the wall base. These seem to have been lacking at roundhouse E despite its location on the slope. The only feature in roughly the right position was feature 4286, but this showed no tendency to be concentric to the roundhouse and appeared no different to the natural fissures. To the south-east of the roundhouse the boulder clay covered the bedrock and this proved very difficult to spot features in. It is possible that there were drains or storm gullies further upslope but that they were not recognised or had been truncated away by the stripping. There was also no enclosure round roundhouse E, and, although it is possible that modern intensive ploughing had removed superficial features, this absence was probably genuine and significant. The settlement within Llandygai henge A made use of a substantial banked enclosure and contained the largest roundhouse so far recorded in north-west Wales. This suggests it was either a dwelling of unusual status or performed some communal function, perhaps both. It is probable that this was surrounded by scattered houses and farmsteads including roundhouse E. The ring-groove houses at Parc Bryn Cegin are the only examples of this scattered settlement pattern yet discovered, but more might still survive to be found in future.

#### *Early medieval smithing site*

Until the dates were received from the metal-working deposits in this area there was no trace of early medieval activity at Parc Bryn Cegin. This was unexpected as the early medieval cemetery under Llandygai Industrial Estate lies only about 350m from the boundary of the current site. The dates, therefore, allowed a significant gap in the chronology of the site to be filled. The activity represented is, however, very small scale and isolated, so its significance is difficult to determine. With a start date of cal AD 480-650 and an end date of cal AD 600-760 this activity may have started before the cemetery was established but it possibly overlapped with its use. The extent of this overlap is impossible to establish because of the lack of dates from the cemetery. Why a small smithing site should have been established on a windy slope at Parc Bryn Cegin is unclear. The site of any settlement in this period is unknown but might be expected to be closer to the River Ogwen, perhaps not far from the present village of Llandygai. There is certainly no trace of contemporary settlement close to the smithing site, although it is not known what lies beyond the trench edge 50m to the south. The smithing site was nearly 300m north of Cefn y Coed, where a farmhouse is shown on the 1768 Penrhyn Estate Map. Whether occupation goes back in this area to the early medieval period would require considerably more evidence to demonstrate, but a smithy might be expected to be on the outskirts of a settlement rather than isolated in the middle of the fields. It is possible that the smithy might have been positioned close to a copse to provide wood for charcoal, but it seems unlikely that woodland was a limiting factor in that period.

It is difficult to imagine in what way the former roundhouse house could have influenced the position of the smithy. As there was probably no clay wall no upstanding remains are likely to have been visible. It must be concluded that the physical relationship between the roundhouse and the smithy was purely coincidental.

The charcoal-rich deposits associated with this phase of activity produced a significant assemblage of charred cereal remains, although most of these were so poorly preserved that they could not be identified to species. Their condition was probably due to them having been used as fuel on a fire, meaning that they charred at a high temperature in an oxygen rich atmosphere.

The assemblages of barley, oat and naked wheat are consistent with the Welsh early medieval period. Barley was common and oats were becoming an important crop plant (Greig 1991). A similar grain assemblage, containing oat, rye and bread wheat, was recovered from another early medieval site at Rhuddlan, North Wales (Williams D, 1985). The charred seeds of weeds of cultivated ground were also

present, and had presumably been harvested with the crop. The scarcity of cereal chaff suggests that the later stages of crop-processing or carefully cleaned stores of cereals are represented.

## LATE IRON AGE/ROMANO-BRITISH ROUNDHOUSE SETTLEMENT

### Introduction

In the middle of the site at a point where the slope becomes less steep, but above the wetter low-lying areas there was a complex of features interpreted as a Late Iron Age and Romano-British roundhouse settlement (Fig. 61). This consisted of a southern enclosure with at least one roundhouse (roundhouse A) (NGR SH 59119 70414, c. 45m OD), joined by narrow ditches to a larger northern curvilinear enclosure around three roundhouses (roundhouses C, D and H) (NGR SH 59160 70527, c. 41m OD). In the middle of this complex were more ditches and a dense concentration of postholes and a penannular ditch (structures F and G). There may have been a further outlying roundhouse to the south-east (roundhouse B). Although the slope was more gradual here than further east it was still quite prominent at this point and appears to have influenced the design of the settlement, which was distributed along the contours. However the slope did not result in the houses being built on terraced platforms.

The structures within the enclosures are interpreted as clay-walled roundhouses. This interpretation is based on comparisons with other sites in Gwynedd and the validity of it will be discussed below. Such clay walls rarely survive, although spreads of clay are sometimes found as at Pant (Ward and Smith 2001) and Bryn Eryr (Longley 1998), where the clay was up to 0.2m thick. The wall also survived well at Cefn Du, Gaerwen (Cutler forthcoming), but this contained quantities of stone as well as clay. Generally the wall is deduced from the position of other features. In some cases (e.g. Mellteyrn Uchaf on the Lleyn Peninsula (Ward and Smith 2001) and Bryn Eryr (Longley 1998)) slots for revetting define the inner face of the walls, but often the wall can only be suggested by the absence of internal features. The outer face of the wall is frequently marked by a curvilinear gully. This can be referred to as an eaves drip gully, but the position of these features generally suggests that they were close to the base of the wall rather than under the ends of the roof eaves. Such gullies are referred to here as storm gullies and it is assumed that they protected the base of the wall from surface water that might undermine it. Roundhouses are typically reconstructed as having low walls of about 1.5m high. In the case of clay-walled roundhouses the wall would have been at least equal in width; giving them sufficient strength to support the roof without the aid of posts, although in some cases posts do seem to have been used in addition (Davidson forthcoming). In most cases the few postholes present represent internal features or entrance posts. The features used to define clay-walled roundhouses on the present site were, therefore, concentric curvilinear gullies defining a circular area with few or no structural postholes.

The features of the settlement were cut into boulder clay, which in places, especially around roundhouse C, was very mixed and variable with the general yellow boulder clay underlain with pockets of grey silty clay and plastic orange-brown clay. This caused some confusion during excavation as it was difficult to distinguish the fills of features from natural deposits. Additional problems were caused by the many post-medieval ditches and drains cutting across the area, sometimes destroying important relationships.

### Structures F and G

(Fig. 62)

#### Introduction

To the west of the narrow boundary ditch between the two roundhouse enclosures was a complex of features (NGR SH 59128 70468, 42m OD) consisting of a group of postholes (structure F) and a penannular gully with associated pits and postholes (structure G). There were also other pits and postholes less closely related to the main foci of activity. The area was partially enclosed on the south-eastern side by a series of ditches. These were cut through by a post-medieval ditch, which had expanded into an erosion channel. The boulder clay in this area was particularly intractable. The fills of genuine features were often difficult to identify and variations in the boulder clay resembled features until investigated in detail. The area required repeated recleaning to ensure that everything of significance had been identified.

#### Structure F

##### Description

In an area about 9m in diameter were a collection of postholes and small pits, unrelated to each other except by their proximity. On the eastern side of the group were two large multiple postholes 9006/9017/9126 and 9152/9202. Three large conjoined postholes (9006, 9017 and 9126) formed a neat trefoil shape. Each posthole measured up to 0.8 by 0.76m and a maximum of 0.5m deep. All were filled by grey clay with some charcoal and large packing stones. The excavator thought that some of the

postholes were intercutting, but their layout suggests contemporaneity and the angle of packing stones around each post could have suggested separate cuts. Adjacent to this feature were three small holes (9376, 9378 and 9380) no more than 0.06m in diameter and 0.13m deep. These could have been stakeholes but were as likely to have been root holes.

About 1m to the north was a large stone-packed posthole 9152 (1.0 by 0.7m, 0.3m deep) with a smaller adjacent posthole 9202 (0.6 by 0.6m, 0.35m deep). Both postholes were assumed to be contemporary, as they were essentially part of the same cut but separated by a large flat stone. They were filled by a grey clayey loam with some flecks of charcoal. There were large packing stones in 9152 and the position of these suggested that there had been two posts within this feature. The combined feature, therefore, probably held three posts.

Just to the west of the multiple postholes were four well-defined postholes 9020, 9110, 9144 and 9333. The largest 9020 measured 0.56 by 0.46m and the smallest 9144 was 0.24 by 0.17m. They varied in depth between 0.17m and 0.41m. Only 9020 had convincing packing stones, but all had some stone, often burnt and were filled by grey clay with some charcoal.

There were two small features, 9210 and 9212, next to posthole 9020. These were only 0.07m deep and were probably where stones had been pulled out, but the quantities of charcoal in their fills could suggest they might have been stakeholes.

Further west was an approximate line of four postholes (9096, 9100, 9121 and 9404). The largest 9100 measured 0.59 by 0.54m, and the smallest 9404 was 0.32 by 0.25m. They varied in depth between 0.2m and 0.43m. Posthole 9100 had the impression of a post in its base, and 9404 contained a postpipe filled with charcoal-rich silt. The main fills of these features were grey clays with some charcoal and varying amounts of stone. There was also a stakehole 9413, 0.08m in diameter and 0.14m deep. Next to 9404 was a larger feature (9098) measuring 0.74m by 0.5m but only 0.1m deep. This was interpreted as an impression where a stone had been removed but its fill did contain some burnt stone and charcoal flecks.

To the north was a sub-circular feature (9145) 0.7m in diameter and 0.28m deep. It was filled by dark grey clay with some stones but nothing that resembled post packing and it was unclear whether this was a small pit or a posthole. There were three shallow features (up to 0.12m deep) next to this (9217, 9219 and 9221) but these were probably impressions where stones had been dislodged. There was also a shallow, rather irregular pit 9399 measuring 1.1m by 0.64m and 0.22m deep, with a grey silty stony fill.

In the western part of this area were a group of three well defined postholes (9090, 9092 and 9094). These were about 0.3m in diameter and up to 0.28m deep. They were filled by brown clayey loam with some charcoal and burnt stones. Just to the north of these were two other similarly sized postholes up to 0.25m deep (9296 and 9298). These were filled by grey silty clay with charcoal flecks and burnt stone.

To the south was a shallow, bowl-like pit 9138 0.6m in diameter and 0.18m deep, half of which was cut away by a land drain. The fill was a grey sandy clay with flecks of charcoal but little stone. Next to this was an irregular feature 9136 with a stony fill that was interpreted as a treeroot hollow. Nearby was a pair of well-defined postholes (9108 and 9119) about 0.4m in diameter and up to 0.42m deep. These were filled by orange-grey sandy clay with charcoal and 9108 had evidence of stone packing.

A neatly circular pit 9148 was found measuring 0.78m in diameter and 0.22m deep. Its fill was an orange grey silty loam, with burnt stones and flecks of charcoal particularly concentrated towards the base. Near this were two possible stakeholes (9208 and 9214), no more than 0.1m in diameter and up to 0.07m deep. There was also a rather irregular feature 9403 measuring 0.65m in diameter and 0.1m in depth. This had frequent charcoal in its grey-brown silty clay fill and was largely cut away by a land drain, so it could be the disturbed remains of a genuine feature. A small posthole 9142 lay towards the middle of the area. It measured 0.21m in diameter and 0.13m in depth and was filled by grey clay with stones and charcoal flecks.

Also within this area was an irregular linear feature 9412, which was filled with stones, but it was so irregular that it seemed to have been formed by a tree or shrub, which can concentrate stones around their roots. Further west was a linear feature 9054, 4.2m long, 0.55m wide and 0.12m deep. It was filled by dark brown clayey sand, and probably just a variation in the natural deposits.

Running north from pit 9145 was a line of three more pits. The most northerly two (9205, 9112) were broad, shallow, sub-circular pits with steep sides and flat bases. Pit 9112 measured 1.45 by 1.15m and 9205 was c. 1.08m in diameter; both were no more than 0.25m deep. The fills of both pits were stony, with grey clay and flecks of charcoal. Some of the stones were heat shattered. Pit 9434 was larger and rather more irregular but again roughly circular, 1.6m in diameter and 0.27m deep. Its fill was a brownish grey silty clay with charcoal fragments and large pebbles, some burnt.



### *Interpretation*

The number of postholes in this area suggests a post-built structure but its shape and function are far from clear. It is possible to reconstruct the feature as a roundhouse with a central post ring *c.* 5m in diameter of fairly substantial posts and a wall line defined generally by slighter features (Fig. 63). Three well-defined postholes would fall on the wall line at the entrance, which would be defined by the large multiple post features. The difficulty with this interpretation is that the inner post ring is not complete and the wall line is very sketchily defined.

An alternative interpretation would be to see this as a rectangular structure aligned east-south-east to west-north-west and measuring *c.* 6.5m by 3m. This would have had a substantial entrance feature at the eastern end defined by the two multiple postholes. A short wall immediately to the west would be defined by postholes 9020, 9110 and 9144, and the north wall would have five substantial postholes (9020, 9096, 9100, 9121, and 9404), with the north-west corner post presumably cut away by a land drain. The three stakeholes (9210, 9212, and 9213) could also be related to this wall. The postpipe in 9404 suggested a post 0.1m in diameter and 9100 had an impression in its base of a post *c.* 0.2m in diameter. As some of the posts are no more than 0.5m apart this would have provided a solid wall structure.

It is suggested that the south-western corner was defined by the group of three postholes (9090, 9092 and 9094). They did not cut each other and their layout suggests that they may be contemporary rather than repeated replacements. About 0.5m north of these was the pair of postholes 9296 and 9298.

The south wall is the main weakness in this reconstruction as there were few clear postholes on this line, with the exception of the corner posts. Posthole 9333 could be said to start the eastern end, and 9403, which was largely cut away by the land drain, may have originally have been a posthole, although that cannot now be proved. Two possible stakeholes (9208 and 9214) also lay near this line, but they were not very convincing. Features were difficult to recognise in the boulder clay on this part of the site, and even though the area was repeatedly recleaned, it is possible that postholes were present that were not recognised.

Whether the structure was circular or rectangular it had an impressive entrance created by the two large features both probably holding three posts. One of these (9006/9017/9126) was a neat trefoil shape and looked as though all three posts were contemporary, rather than replacements. This trefoil shape is reflected on a smaller scale by the three posts in the south-west corner of the structure. There were probably also three posts in the northern entrance feature, although these were not as neatly positioned. These entrance features are not easily intelligible as part of a roofed building but as free standing posts they would look impressive. If the rest of the structure was roofed this would give a narrow, box-like building with impressive columns at the entrance, which would not resemble a domestic building and raises the possibility of a ritual function.

This reconstruction does account for all the convincing postholes in the area with the exception of a single posthole 9142 located inside the proposed rectangular structure and three postholes to the south (9108, 9119, and 9138). These postholes were well-defined and formed a straight line on a slightly different alignment to the proposed rectangular structure. A fourth feature on this line 9136 was rather irregular in shape, very shallow, and was probably a tree hollow. There were three possible postholes to the north of the proposed building (9217, 9219, 9221), but these were very shallow, no more than 0.12m maximum, and were probably just stoneholes.

There were two small pits in the immediate area of the structure. To the north was 9145 and 9148 lay to the south. Whether any of these were related to the structure is not clear. From pit 9145 heading just east of north was a line of three more pits. These were larger, although shallow and contained some burnt stone, so they may have been related to the activity around structure G, which produced extensive spreads of burnt stone. However, if these pits were all contemporary their line did point to structure F, suggesting that they were possibly related to that structure.

### ***Structure G***

(Fig. 62)

To the north-east of structure F was a complicated area of activity focused on a penannular gully, but with features spreading to the north and south. It was associated with extensive spreads of burnt stone.

### *Description*

The penannular gully (9352) was about 7m in internal diameter, about 0.6m wide and 0.3m deep. In places its sides were quite steep and well defined and its base was flat, but it seemed to have suffered from animal disturbance, especially on the northern arc, where a burrow (9389) cut through the fill and the gully was widened and confused. The north-eastern terminus was cut by a land drain and no trace of the gully could be found on the other side of this. Its south-eastern end shallowed to a narrow

rounded terminus. The main fill of the gully was a light brown-grey plastic clay with occasional fragments of charcoal, frequent lenses of sandy clay, and occasional stones, including shale fragments. This fill had the feel of a water-laid deposit. The upper part of the gully, however, was filled with different material. About 75% of this deposit was composed of rounded stones up to 0.3m in length, some of the stones were heat fractured and there were occasional fragments of charcoal. In the top of the gully, cutting the stony deposit, was a small pit 9324 (Fig. 63), 0.47m in diameter and 0.12m deep. The fill of this was light greyish brown sandy clay with occasional stones, some burnt. About a third of the fill was composed of charcoal.

Inside the penannular gully was an irregular hollow (9254), probably of natural origin. This measured 2m by 1.9m and was up to 0.2m deep. It was filled by firm, orange-grey mottled clay (9322), the top and bottom of which was defined by quantities of charcoal. This clay deposit spread beyond the edges of the hollow and overlapped the fill of the penannular gully (Fig. 63).

Cutting at a tangent across the western part of the area within the penannular gully was a line of four postholes (9065, 9070, 9312 and 9460). These measured about 0.4m in diameter and varied in depth between 0.17m and 0.25m. They were filled by brown-grey silty clay with occasional stones and 9312 had *in situ* packing stones. Features 9070 and 9312 were well-defined, but 9065 and 9460 were difficult to define, but were so accurately located on the line and so evenly spaced that they were almost certainly also genuine postholes. The gaps between the features were all about 1.3m wide. At the northern end of the line 9460 was less than 0.1m from the edge of the penannular gully. The southern end of the line seemed to have been extended by feature 9410; also apparently a posthole measuring 0.7m by 0.6m, which was filled with grey silty clay. Posthole 9410 was recognised only after the fill of the penannular gully had been removed. There were also two stakeholes (9335 and 9357) in this area, but these were only 0.08m in diameter and 0.1m deep.

Near the middle of the area within the penannular gully were two pits (9246 and 9329), the latter cut by a posthole (9327). The posthole was well-defined and stone-packed, 0.23m in diameter and 0.3m deep. The pits were neatly circular in plan, 0.5m in diameter and up to 0.25m deep. Their fills consisted of grey silty clay with charcoal and stone, much of which was heat fractured. Also cut by posthole 9327 was an irregular feature (9331), which seemed most likely to be an animal burrow. There were other small features (9062, 9063 and 9064) that could have been the remains of postholes but they were no more than 0.08m deep and probably just hollows where stones have been removed. Two small features (9360 and 9370) up to 0.16m deep, and situated close to the edge of the penannular gully, may have been stakeholes, but could equally have been rootholes or animal burrows.

A narrow linear feature 9080 ran nearly parallel to the land drains in the northern part of the area. This was 2.5m long, 0.16m wide and 0.18m deep. Within its fill some stones were wedged at steep angles but the feature had the feel more of a periglacial feature than an anthropogenic one.

In the north-eastern quadrant of the penannular gully was a rather irregular pit 9307, measuring 1.95m by 1.4m and 0.42m deep. The fill was very stony and was cut by a deep, narrow posthole 9309, 0.4m in diameter and 0.46m deep. This was filled by grey silty sand in contrast to the stony fill of the pit. About 2m to the south was another pit 9315 measuring 1.8m in diameter and 0.3m deep. This had a more regular circular plan and steep sides, but the fill was also very stony, and some of the stone was heat-cracked. This pit appeared to be surrounded by stakeholes although these were generally not over 0.1m deep and many were unconvincing. Both pits were sealed by thin spreads of stone including about 50% heat shattered stone (Fig. 63). The northern spread (9082) seemed to be centred over pit 9307; the southern spread (9057, 9087, and 9088) was more extensive, continuing over the fill of the penannular gully and over some of the features in its interior. The stony upper fill of the gully seemed to be part of this general spread. Although disturbed by a land drain this southern spread continued south, covering an area of *c.* 6.5m by 5m. Within the spread was a group of stones (9058) that seemed to have been deliberately placed. These formed a roughly circular setting 0.7m by 0.6m. The individual stones were rounded and up to 0.3m long. They were heat reddened, as if burnt, but many of the stones in the general spread were also burnt. This stone spread many have sealed another pit (9391), but a land drain disturbed the relationship and this was not clear. This pit was roughly circular, 0.9m in diameter and 0.2m deep. Its fill was a dark grey silty clay with charcoal and stones.

Within this southern area was a group of eight post or stakeholes (9248, 9287, 9418, 9422, 9426, 9429, 9430, and 9440). These were between 0.35m and 0.10m in diameter, mostly towards the smaller end of the range and up to 0.46m deep. Most were filled by grey silty sand, although some of the fills were richer in clay. Most had few stones, though 9422 had a stony fill and there were large stones in the top of or overlying several of the postholes. To the north three small stake or postholes (9350, 9348, 9421) might have been related, as might the two postholes to the south (9140 and 9156), described below with the ditches.

To the north of the penannular gully was a small group of other features, through which ran a post-medieval stone-filled drain 3680. A shallow, slightly curving gully 9316 was aligned roughly north-east to south-west and measured 3.8m long, 0.3m wide and 0.07m deep. The fill was a greyish brown clay-silt with occasional small pebbles. On either side of this gully was a pit. To the east was 9066, which was a neat circular pit or possibly a posthole, measuring 0.68m in diameter and 0.25m deep. Although it contained frequent stones these were not positioned like post-packing. To the west of the gully was pit 9318, 0.64m in length, 0.62m wide and 0.23m deep, with steeply sloping sides and a flat base. Near 9318 was an irregularly shaped feature 9320, but this was probably a natural hollow. To the south-west were two postholes (9337 and 9339). Measuring up to 0.4m by 0.32m and 0.23m in depth, the postholes were filled by greyish brown silty clay with stones, and charcoal fragments. Posthole 9339 had heat-cracked stones used as post-packing.

### *Interpretation*

This group of features was initially assumed to be a roundhouse like those in the main settlement, but there are problems with this interpretation. The penannular gully 9352 was very similar in size to the inner drain of roundhouse C, but had no evidence of capping stones. The gully curved round the downhill side of the enclosed area and could have been a less well preserved ring gully like that in roundhouse H, but it had no exit drain. Despite careful cleaning no continuation of the gully was found, and if it had been a complete circle the two large pits would have cut the line. There was also no trace of an outer storm gully unless the ditches to the south had originally continued around the uphill side of the area and had been truncated away. As these ditches were probably post-medieval in date (see discussion below) they can probably be discounted. The penannular gully could have been an enclosing gully like that in 'roundhouse D', but in that case might be expected on the uphill side of the area it was enclosing.

The features inside the penannular gully were somewhat different to those within the other roundhouses. The two pits (9246 and 9329) with the posthole 9327 cutting them were reminiscent of the complex in the middle of roundhouse C, but the line of postholes defining a tangent across the circle were specific to this feature. The relationship of this line to the penannular gully 9352 was difficult to determine. It relied on posthole 9410, which was recognised after the fill of 9352 had been removed. It is possible that 9410 cut through the fill of 9352, but the cut was not recognised due to the similarity of the fills. However, the posthole line seems to have been laid out in relation to the penannular ditch, which must have already existed and been easily visible. Posthole 9410 was also quite precisely placed in the middle of the gully, again suggesting that the gully was clearly visible when the posthole was dug. It is probable that the posthole was dug very soon after the gully, and before the gully fill was deposited, so that the line of postholes were intrinsic to the function of the gully. This would suggest that the gully was not for drainage because a post in 9410 would have blocked it. The clay-rich fill that seemed to be a water-laid deposit contradicts this interpretation. As a foundation slot the gully seems rather broad, its sides are not sufficiently steep and packing stones might have been expected, however, a structure open to the east would have provided good protection against the westerly prevailing winds. The narrow linear feature 9080 could have been related to the line of postholes to which it runs roughly perpendicularly. However, this feature appeared to be a periglacial feature on excavation and seemed to be cut by the penannular gully 9352.

The clay deposit (9322) could have been a floor surface inside the penannular gully, surviving mainly where it levelled out a natural hollow. Where it apparently sealed the fill of the penannular gully this could have been due to erosion and does not necessarily demonstrate the original relationships between the features. The two large pits (9307 and 9315) seemed to be deliberately positioned within the opening defined by the penannular gully, and so could be argued to be contemporary with the gully. Pit 9315 was quite regular, whereas 9307 was irregular and was possibly considerably disturbed by tree roots or animal burrowing. The posthole 9309 cutting through the fill of this pit does suggest more than one phase of activity in this area, although it is not clear which other features it was related to; possibly the central posthole 9327. Pit 9315 may have been surrounded by a stakehole structure, but the holes were not very convincing and did not form a well-defined pattern. Alternatively they may have represented stakes casually inserted around the pit as supports during the pit's use.

The group of postholes to the south of the penannular gully is problematic because they did not form a recognisable structure and their relationship with the stony spread was not clear. Posthole 9430 was apparently sealed by the stone setting (9058) and several other postholes were covered by stones that seemed to form part of the stone spread. Others were visible before the stone spread was removed. The spread was a thin and patchy deposit and it was difficult to differentiate between stones included in the top of the postholes, perhaps as packing stones, from those in the general spread. It is equally possible

that the postholes pre-date the spread or were contemporary with it. The choice of interpretation depends largely on how the stone spread is interpreted. The stone setting (9058) could have been the base of a hearth. As it was set level with and surrounded by the other smaller stones it gave the impression of being part of a cobbled surface. Where this surface extended over the pits it may have levelled the area and covered the previous features. However, this would leave few features that could be contemporary with the cobbled surface. It is perhaps more likely that ploughing has spread the stones into a thin, even layer and that they originally formed mounds or heaps. The presence of burnt stone in the ditches to the south suggests either the original cobbled surface was much larger than survived or that the stone had been spread extensively by ploughing. The association of burnt stone with the pits is suggestive of burnt mounds, and although this activity may not be of the same nature or date to the more typical burnt mounds the stones and the pits could be functionally related. If the stone spreads are not seen as a deliberately laid cobbled surface it is possible to see most of the activity in this area as roughly contemporary. A penannular drain or open sided structure would appear to have been associated with pits used for some activity involving hot stones. If cobbled surfaces are accepted they can only be contemporary with the southern group of postholes and possibly a few of the other small features. The penannular gully and the pits would then be seen as an earlier phase sealed by the cobbled surface.

In conclusion, although there is plenty of room for doubt this complex of features can perhaps best be interpreted as an industrial or cooking area where hot stone technology was used in pits with related smaller pits and some kind of unroofed structure, possibly a wind break. Whether the penannular gully was a drain or the foundation of a structure has not been established.

### ***Ditches***

(Fig. 62)

#### *Description*

To the south and east of structure F, on its upslope side, were a series of ditches. A curve in the length of several of these initially suggested that they were also intended to protect features associated with structure G. These ditches were intercutting so that a stratigraphic sequence could be established. Their south-western extension was cut through by a post-medieval ditch, which had expanded into a broad erosion channel (3902). There was evidence that a natural palaeochannel (9252) underlay this area and that it had probably always channelled water to some extent.

The first ditch in the sequence (9007) was at least 14m in length, *c.* 1m wide and up to 0.35m deep. It ran south-west to north-east, then, near the eastern end of structure F changed its course towards the east. Its eastern terminus was cut away by a later ditch and the south-western end was cut by the post-medieval ditch (3902). A ditch (9041), at least 13m long, 1m wide and up to 0.4m deep, continued on much the same line to the south-west of the post-medieval ditch. The fill of ditch 9041 was a mid-grey silty clay with only occasional stones. The fill of ditch 9007 was much stonier, with many of the stones being burnt, especially towards the top of the fill.

When ditch 9007 had silted up two other ditches were dug along roughly the same line. Ditch 3922 was narrow, little more than a gully, up to 0.6m wide and 0.22m deep, which followed the northern side of 9007. It dog-legged in a similar way and the eastern end, which cut away the terminus of 9007 was a narrow, steep sided slot. At its western end 3922 diverged slightly from the line of the earlier ditch. There was a hint that it may have continued as 9415. This appeared as a short, shallow linear feature on roughly the right alignment, measuring about 2.5m in length, 0.38m wide and 0.12m deep. The excavation of this feature was continued downhill, but this interpretation was unconvincing. The fill of 9415 was a gritty brown silty loam with few stones, whereas the fill of 3922 resembled that of 9007 in that the grey clayey loam contained frequent stones, many heat shattered. Ditch 3922 cut through the end of a short linear feature (9049), 1.62m long, 0.52m wide and up to 0.11m deep. This had rather irregular sides, was filled by brown gravelly loam and seems more likely to be of natural than anthropogenic origin.

Running parallel to ditch 9007 and cutting through its western end was ditch 3920. This ditch was at least 13m long, up to 1.2m wide and 0.3m deep. The fill of 3920 was variable, being greyer and more clayey lower down the slope and more brown and loamy uphill. The stone content was also variable, with some parts having more stone, some of it heat shattered, but generally this ditch was less stony than 9007. It is possible that it was this ditch that continued as 9041 on the other side of the post-medieval ditch.

Cutting the fill of ditch 3920 was gully 9222, a narrow curving gully at least 2m long, 0.3m wide and 0.17m deep. It had a rounded north-eastern terminal, but the southern end was lost in fill of ditch 3920. A stone packed posthole (9300) measuring *c.* 0.5m in diameter and *c.* 0.3m deep cut through the fill of ditch 3920, although it was not recognised until some of the fill of the ditch had been removed. A small



pit (9432), measuring 0.6m by 0.45m and 0.15m deep, was cut by the rounded eastern terminus of ditch 3920. To the north of the ditches were two possible postholes (9140 and 9156), described in this section as they could be related to 9300. Feature 9140 was fairly well-defined, measuring 0.38m by 0.3m, but it was only 0.14m deep and its fill contained no packing stones. Feature 9156 was deeper at 0.27m and was more convincing as a posthole. It measured 0.3m by 0.25m and although it had no clear post-packing stones about 25% of the fill was composed of heat shattered stone.

Much of the area of the ditches was sealed by a brown loam with frequent burnt stone and red staining (3919). This survived best in the tops of the ditches, but was also more generally distributed.

### *Interpretation*

The proximity of these ditches to structures F and G meant that it was assumed during excavation that they were roughly contemporary, despite the absence of any dating evidence. They are described in this section because that interpretation remains possible. However, the comparison of the nineteenth-century map to the evidence on the ground raises the strong possibility that these ditches were nineteenth century in date. The chapter on the post-medieval field systems below describes the field boundaries in this area. Of particular significance in this case is a curve and sharp angle in the western boundary of a field marked as number 1755 on the 1840 estate map (see fig. 84). The only features that might correspond to this are ditches 3920, 9007 and 9041. The curve and dog-leg on ditch 9007 makes this a particularly close comparison.

If the ditches were Iron Age the way in which they run diagonally down the slope would have directed surface water away from structure F, and the dog-leg in the alignment could suggest that they were also intended to provide some protection to an area of activity south of structure G. The stony fills may have aided drainage, and the heat-shattered stones must have derived from the deposits around structure G. However, the stones could have been deposited when the fields were remodelled in the later nineteenth century, enabling the ditches to continue functioning as drainage under the new field. The burnt stone might then have been spread over the fill by the action of ploughing. It is not clear whether it was 9007 or 3920 that continued on the other side of ditch 3902 as ditch 9041. The lack of evidence for recutting in the southern ditch suggests that only one ditch did continue.

During excavation it was initially assumed that the western part of 3922, 9415 and perhaps 9049 formed a ring gully around a roundhouse defined by the postholes of structure F, but on closer investigation the gullies failed to be convincing as the storm gully for a roundhouse. Feature 9049 was cut by 3922, and was rather irregular and probably not anthropogenic. If gully 3922 had continued as 9415 it would have formed an arc around structure F but the closeness of its alignment to the other ditches suggests that they all had the same function. Gully 3922 cut ditch 9007 and if the latter was post-medieval the gully must have been also, probably representing a different phase of the boundary. Gully 9054, on the other side of structure F, proved to be too straight to be part of a ring gully and could be interpreted as a furrow or drainage feature in the nineteenth-century field.

Gully 9222 and posthole 9300 cutting ditch 3920 are also presumably late. There were no stratigraphic relationships to establish the phasing of postholes 9140 and 9156 to the north. They may have been contemporary with posthole 9300, and therefore possibly post-medieval but the lack of post packing stones in the northern postholes compared to dense post packing in 9300 may suggest that they were not contemporary.

### *Artefacts and Ecofacts*

Very little was found in this area. A microlith from a posthole south of structure G has already been discussed and is presumed to be residual. The only other find was a minute black opaque hexagonal glass bead (SF 1253) from an irregular feature (9397) on the south side of structure F. There is a slight possibility that this could be late Roman but it is so small that it could easily be intrusive and is likely to be late post medieval or modern.

The 43 samples from structure F produced relatively little ancient charred remains, most of what they did contain was unidentifiable wood charcoal. However, posthole 9121 produced a grain of possibly emmer wheat and a glume base, and pit 9066 contained a charred hazelnut shell. Some of the charcoal could be identified as hazel, and a little as oak. Almost all the plant remains from structure G were just unidentifiable wood charcoal, despite 22 samples being studied. The small amount of identifiable charcoal was hazel.

### **The southern enclosure**

(Fig. 61)

The southern enclosure was defined by two ditches that ran from south-west to north-east then curved northwards and continued north after a gap, which might have been an entrance. The area enclosed was

potentially *c.* 1140m<sup>2</sup>, but the ditches did not so much enclose this area as protect its uphill side. Within this area was one focus of activity interpreted as the remains of a roundhouse (roundhouse A) and another focus of activity detected in an evaluation trench extending to the west.

### **Roundhouse A**

(Fig. 64, plate 17)

#### *Description*

The main focus of activity in this area was defined by a series of roughly concentric curvilinear features. The outermost of these (3059) curved round the southern and western sides of the area and opened downhill at its western end. It was up to 1m wide but only about 0.21m deep, with an approximately V-shaped profile and a fill of grey-brown silty clay with few stones. At its north-eastern end it turned sharply east uphill. Just beyond its eastern end was a straight gully (3461) 6.45m long and up to 0.5m wide, but only 0.1m deep. It ran nearly north-south, diagonally down the slope. Its fill was a dark greyish brown silty loam.

Inside the curve of gully 3059 was a nearly semi-circular gully (3058) up to 0.8m wide, but generally no more than 0.5m wide, and about 0.2m deep with a V-shaped profile. Both ends of the gully faded out downhill and its grey silty clay fill suggested the gully had silted up gradually. The gully cut two charcoal patches (3434 and 3435), measuring up to 0.62m by 0.6m and 0.15m in depth.

Inside the arc formed by 3058 was a question-mark shaped gully 3230/3266, curving round to the south and west and opening downhill on the western side. At its downhill end the cut forked and seems to have opened into an area of stones. Its fill was a rather humic, friable dark brown loamy clay with large cobbles that appeared in some cases to be deliberately placed, particularly some that were laid horizontally in the top of the fill and others forming a neat line down one side in places.

There seems to have been an earlier version of this feature, largely cut away by the later one, leaving about 1.9m of its northern end (3387) and traces elsewhere (3268). The best preserved section of this earlier cut was about 0.38m wide and up to 0.25m, and had horizontal stones lying on top of the fill.

Gully 3230/3266 apparently cut an earlier curvilinear feature (3549) running just inside it and also just clipped the fill of 3058. Feature 3549 was filled with brown clayey loam and was evidently disturbed by later activity. It was confused where it was cut by the later gully but appeared as a fairly short arc round the south-west side of the area, fading out downhill. The arc was continued round to the east and north by 3547/3385, but this feature did not quite meet 3549, as an irregular hollow (3624) lay between them, probably cutting both. Although never clear it is possible that feature 3624 was a posthole or pit dug from a higher level. A small group of stones recorded above it on the pre-excavation drawing suggests this. Turning sharply to the north-west 3547/3385 became much narrower as it ran straight downhill.

The relationships between these curvilinear features were far from clear. Their fills were all very similar and critical relationships were difficult to establish either in section or plan. Feature 3266 was more clearly defined than the others, with many of its stones undisturbed, so it appeared to be the latest and where this could be checked in section this also seemed to be the case.

There were some postholes within the area, but these were widely distributed. On the western side were two postholes (3559 and 3335). Posthole 3335 was 0.3m in diameter and 0.18m deep with packing stones. It seemed to have replaced an earlier posthole (3337) in almost the same place. Posthole 3559 measured 0.44m by 0.36m and was 0.2m deep. It was packed with stones and seemed to cut the end of gully 3385. A sub-rectangular feature 3576 near the middle of the area appeared to be a posthole because the quantity of stones it contained. It measured 0.80m by 0.65m and was 0.2m deep. On the eastern side of the area were a posthole (3533), 0.2m in diameter and 0.3m deep and a short, stone packed slot (3551). Two postholes (3574 and 3563) probably cut through the inner curvilinear gullies. These postholes were only recognised after the inner drains were fully excavated but pre-excavation plans show corresponding features on the surface and the probability is that these postholes cut the fills of the inner gullies. They were about 0.4m in diameter and 0.2 and 0.4m in depth. On the south-western edge of the area were two more postholes (3363 and 3365), about 0.4m in diameter and up to 0.24m deep. The edge of gully 3059 was cut by posthole 3363.

Near the middle of the area defined by the gullies was a confused feature composed of several irregular hollows (3518, 3572, and 3714). There were some traces of *in situ* burning on the cut edges and the fills contained up to 50% charcoal flecks. A straight, narrow gully 3570 ran north-west from these central features. It seemed to cut their fills but the relationship was not clear.

A broad, shallow channel 3216 curved around the northern and western sides of the area. The north-west end of the channel was filled by a loose stony deposit (3288). Where it was excavated further east the channel was filled with loose cobbles with soft brown silt between them (3116). Post-medieval

pottery was found in the top of this layer. An indistinct gully 3289 cut through the stony layer and was filled by compact mid-grey silty clay with fairly large sub-rounded stones and slate.

### *Interpretation*

The features found in this area have been interpreted as a clay-walled roundhouse (roundhouse A), defined by several roughly concentric gullies. The two outer most of these were stone-free whereas the fills of the inner gullies were stony and where least disturbed had flat slabs on top. The former gullies are interpreted as outer storm gullies and the latter as internal stone-capped drains. The presence of two storm gullies of different diameters suggests that there were two phases of house with an overall change in size.

There was no stratigraphic relationship between the two outer storm gullies, and the sequence of inner drains was far from clear. It is also difficult to demonstrate which outer gully each drain was associated with. However, it is most likely that the largest diameter inner drain was contemporary with the largest outer gully. The largest inner drain appeared to be the latest of the sequence of drains as it was the most complete and least confused by recutting. It just clipped the edge of the smaller storm gully, adding to the evidence that the smaller house was earlier. It will, therefore, be assumed that this roundhouse was rebuilt to be larger rather than smaller than its original size and the features have been phased on that assumption. The excavated evidence is insufficient to prove that this assumption is correct and it remains a possibility that the order of the structures was reversed.

### Phase I

The exterior of the roundhouse in the first phase was defined by the semi-circular gully 3058. This cut two charcoal patches (3434 and 3435), but otherwise no features seemed to pre-date it. It curved around the eastern and southern sides of the house, i.e. the uphill side, and faded out downhill.

It is not clear which of the internal features relate to this phase, but the earliest inner drain 3549 is most likely to do so. This was cut by the later, larger diameter drain 3230/3266, which also just clipped the fill of 3058. This early drain 3549 had no surviving capping stones and was evidently disturbed by later activity, particularly where the later drain cut it. It is likely, but not proven, that gully 3547/3385 formed the continuation of this first inner drain. There were a few undisturbed capping stones covering 3547/3385, demonstrating that it was indeed a drain.

Other features cut by later activity presumably also belonged to this phase. A posthole 3533 and a short, stone packed slot 3551 on the eastern side of the house might represent internal features, although 3551 would presumably have extended under the wall.

If the outer gullies defined the outside of the wall at each phase rough measurements of house size can be obtained. The earlier house could be up to 9.8m in diameter externally. The distance between the inner drain and the inner face of the wall is not known so the width of the wall is difficult to demonstrate, but an inner diameter of 7m fits the surviving features. This would give a wall thickness of about 1.2m.

The unbroken storm gully around the eastern side of the house suggests an entrance on the western side, possibly matching the opening into the horseshoe of the inner drain, but there is no indication of its exact location.

### Phase II

The outer storm gully 3059 curved round the southern and western sides of the house only and opened downhill at its western end. The straight gully 3461 running diagonally down the slope may have been related and would have protected the remaining uphill arc of the house.

The inner drain of the phase II building 3230/3266 ran in a question-mark shape around the southern and western parts of the house, exiting on the downhill side. This cut through phase I features and had enough flat stones in place to be identified as a capped internal drain.

There seems to have been an earlier version of this drain, largely cut away at its southern end by the later drain, leaving only a segment about 1.9m long. This earlier drain (3387) had capstones in its undisturbed northern end although its southern end was confused and difficult to trace.

The arc of the outer gully could accommodate a wall 11m in diameter externally. An interior diameter of 8m would give a wall width of around 1.4m and fits the inner wall face between the two postholes (3335 and 3559). These may represent posts defining an entrance on the north-western, downhill side of the house. Posthole 3559 seemed to cut the end of the phase I inner drain 3385, so it is probable that these postholes belong to phase II. These postholes could have been on the line of either the inner or the outer face of the wall but they fit better with the other features if they are assumed to be on the inner face. The precise position and width of the wall is arguable but assuming that the wall was a constant thickness the proposed position and width fits best with the available evidence.

The features in the interior of the roundhouse could belong to either construction phase and it is likely that some belonged to both. The irregular hollows in the middle of the roundhouse (3518, 3572, and 3714) had some evidence for burning, so they might be described as hearths. The relationships between them were very confused, possibly due to animal burrowing, which may also explain the irregular shapes. The position of these features in the middle of the house does suggest that they were genuine and of some significance. They can be compared to the better preserved intercutting pits in the centre of roundhouse C. The straight gully (3570) running from them was interpreted on excavation as an animal burrow, due to its irregular sides. It was, however, very straight, had similarities to drain 3385 and seems to have emptied out downslope. It may, therefore, have been another drainage feature. This is supported by the discovery of two sherds of Romano-British pottery from this feature.

The possible posthole (3576) near the middle of the house was aligned with postholes 3563 and 3574, which seem to have been later features, so this may not relate to either house phase.

The broad, shallow channel (3216) curving around the northern and western sides of the house almost seemed to define the exterior of the house in these areas. It was not possible to establish a clear relationship between the stony fill of this channel and the features related to the house. The levels suggested that the stony layer could have been exposed when the roundhouse was in use, although the stones seemed too loose and with too many voids to be convincingly ancient. Elsewhere the upper parts of this stony layer overlaid the fills of the roundhouse enclosure ditches and were probably post-medieval. It is concluded that this was a natural channel that filled with cobbles over a long period, mainly by the action of colluviation caused by ploughing. The phase II inner drain seemed to have emptied into this area and it is probable that some parts of the stone-filled hollow were in existence and in use when the house was occupied.

The indistinct gully (3289) cutting through the stony layer would have been considered as related to the house except that its fill contained pieces of grey slate. Occasional pieces of slate, mainly of a reddish-purple colour, were found well stratified in the features of the roundhouse. One piece was recovered from near the base of the early inner drain. This was a fragment of a deliberately trimmed rectangular piece resembling a roofing slate, but as Romans used roofing slates it may not be intrusive. If some of the slate was contemporary with the roundhouse gully 3289 does not, therefore, have to be considered as a later feature.

### Phase III

Three postholes seemed to post-date the house. Posthole 3363 cut the south-western edge of the outer storm gully 3059 and postholes 3574 and 3563 probably cut the fills of the inner drains of both phases. Other postholes may have been related to this phase. Feature 3624 may also have cut through the fills of the inner drains, although it was not clear whether it was a posthole. Although posthole 3365 had no stratigraphic relationship with any other feature it was sufficiently similar to 3363 to probably be contemporary. The possible posthole 3576 was aligned with postholes 3563 and 3574 and may also be contemporary. There was post-medieval activity nearby as demonstrated by pit 3487, which contained a sherd of Buckley Ware and a copper alloy button, so it is possible that these postholes were post-medieval.

### *Evaluation trench*

(Fig. 64)

The area to the west of roundhouse A was not to be disturbed by the development but the possibility that the settlement continued had to be investigated to inform any future change to the development plans. A trench 28m by 5m was dug into this area from roundhouse A. The features found were evaluated, but not fully excavated. The archaeology was protected by Terram matting before back filling.

All the potential archaeological features occurred in the eastern half of the evaluation trench. A narrow, shallow gully (3177), 0.6m wide and 0.15m deep, ran north-east to south-west into the trench. It curved very gently and at the south-western end probably curved more sharply to the north, but this end was confused by a post-medieval ditch 3187. The terminus of this gully appeared to be cut by one of two narrow slots (3204 and 3202), which had two possible postholes on their western side (3206, 3207). The curving gully 3177 produced a sherd of eroded Roman Samian Ware and 3204 contained a piece of Roman oxidised Ware. The evaluation was not extensive enough to reliably interpret these features but they appeared to be structural and were probably of a Roman date, strongly suggesting that the settlement activity did continue.

### *Enclosure Ditches*

(Figs 61 and 65)



### *Description*

Roundhouse A was surrounded on the eastern and northern sides by a series of ditches. The two main ditches 3047 and 3048 started to the south of the roundhouse, where both seemed to have had fairly well-defined rounded termini; that of 3048 hidden beneath a stony post-medieval bank (3028) and cut by its associated ditch. No trace of the ditches could be found further south or south-west. The ditches ran fairly straight following the contours of the hill to the north-east, then curved downhill towards the north (recorded as 3157 and 3163), where they terminated with a short ditch (3175) running perpendicularly across them. The fills consisted of clayey silts, generally more grey in colour lower down and browner towards the top. In places where the ditches were deepest and best preserved there were numerous fills representing sediments deposited by water flowing along the ditch alternating with deposits eroding in from the uphill side. The depth of the ditches varied considerably, mainly, but not entirely, due to variations in the depth of truncation; the deepest section was 0.5m deep and had a well-defined U-shaped profile. Both ditches were up to 1.3m wide. A narrower curving ditch (3159), 0.63m wide and 0.21m deep ran between the two ditches, cutting the edge of 3047.

The outer ditch 3048 ran into the cross ditch 3175. The latter was 3.6m long and up to 0.8m wide. It was about 0.2m deep and had steep sides and steep rounded termini. Ditch 3047 terminated in a rounded end divided from 3175 by a narrow berm. After a gap of about 5m the two ditches seem to continue (now numbered as 3504 and 3506), running north down the slope. Here, however, the ditches were much shallower; no more than 0.15m deep and the inner ditch was about 1m wide, whereas the outer ditch was only 0.65m wide.

Ditch 3047 to the south-east of roundhouse A was cut by a large pit 3491 measuring 3.2m in diameter and 0.3m deep. This contained a large rounded boulder almost as large as the pit, a large cake of iron-rich slag from a furnace bottom and some smithing slag.

### *Interpretation*

The dating evidence for the ditches is slight. There were some post-medieval sherds from the upper fill of ditch 3048 but these are likely to represent the final infilling of the hollow during post-medieval ploughing. A sherd of a Roman jar was found in the primary fill of the cross ditch (3175), which might support a Roman date for these features. It was the way in which they curved around roundhouse A, nearly concentric with it, that suggested that they were related to the house. They seemed at least to partially enclose the area of occupation, although it is difficult to interpret them as defensive or boundary ditches as they only enclose the northern and eastern sides of the settlement. It is probable that the ditches were mainly for drainage. They seemed to run along the contours to gather water from the hill slope and then turn downhill to empty it out below the house. This would work very effectively if it were not for the gap, which would block the flow of water. The stony deposit (3116), representing an erosion and deposition event, ran through this area and sealed the ditch fills, so it is possible that shallow sections of the ditches had eroded away and that at one phase they continued through. The function of the ditches, however, remains problematic.

Along much of their length the ditches seem to respect each other and their relationship to the cross ditch suggests that all were contemporary. The fills of ditch 3048 and the cross ditch 3175 were indistinguishable as if they were contemporary and the layout between 3175 and 3047 also suggests contemporaneity. The narrow later ditch 3159 suggests some recutting of the ditch line in this area. This sequence is confused further north as here the outer ditch 3506 was earlier than the inner ditch 3504, as the latter cut the former. This presents contradictory evidence as the ditches in part of their circuit seem to be contemporary and in part they are sequential. It is also impossible to allocate any particular ditch to either phase of house construction.

The cross ditch 3175 seemed designed to run across the ends of the ditches, creating a feature suggestive of an entranceway. The impression of an entrance is enhanced by a narrow ditch (3421), which started near the north-east end of 3175 before running north-west down the slope, parallel to the line of the enclosure, then curving north-east to contour along the slope. There was a gap of 1m between these two ditches.

It is assumed that the boulder in pit 3491 was buried to remove it from the reach of the plough. About 65m to the north-east was another pit containing a similar boulder that had been broken up by explosives before being buried. The explosives had been inserted in drilled holes so this activity must date to the nineteenth century. It is probable that the boulder in pit 3491 was buried during the same period and that its location on the line of the earlier ditch was coincidental.

### *Finds*

There were few finds from the area. Within the base of the ploughsoil immediately over roundhouse A were a polished stone, possibly for leather burnishing (SF473, Fig. 67), a stone spindlewhorl (SF463,

Fig. 67) and two sherds from Black Burnished Ware jars (SF715a and b, Fig. 66). Also found were two pieces of flint (SF482 and SF528, Fig. 67), a sherd of post-medieval pot and two nails, so this deposit is likely to have been very disturbed. A piece of the lower stone of a saddle quern was found within the stony deposit (3116) to the north of the house, and this presumably originated from the roundhouse, although again it was in a disturbed context. There were tiny quantities of magnetic slag in some contexts but these could easily be intrusive and the quantities are too small to be significant.

There were a small number of finds from more secure contexts, although all the features were shallow and occurred immediately below the ploughsoil, so some disturbance must be assumed. The phase I inner drain (3547/3385) produced two sherds of Roman pottery (one Black Burnished Ware) and the parallel straight gully 3570 produced two pieces of Black Burnished Ware. A fragment of Black Burnished Ware came from 3549, another part of the earliest inner drain, along with a Roman seal box (SF 615, Fig. 67, see appendices XIII.3 for a detailed description). The latter was a small rectangular copper alloy box with a Celtic style sinuous decoration on the lid in enamels (a reversed, 'swash N' design). It still contained the red-stained beeswax that would have held the seal impression (appendix XIII.2). The lid was hinged and the base was pierced by four holes for attachment to a packet box or writing-tablet. The seal box dates to the second century AD.

The phase II storm gully 3059 produced five Black Burnished Ware sherds (e.g. SF574, Fig. 66), one eroded piece of Samian Ware and a small smithing hearth slag cake. Most of these finds came from the downhill, western end of the gully. The inner drain (3266) assumed to be related to this storm gully produced a Samian body sherd, 16 Black Burnished Ware sherds, one other sherd of Roman pot and a piece of Roman tile, but also a tiny piece of post-medieval pottery and a nail.

Evans (appendix IV) concludes that overall material from this roundhouse dates from *c.* AD 100 to the late second century, with possibly third century material also included, but the minimal date range might be AD 100-200. The number of sherds from the phase II inner drain does suggest that most of these finds originated from the occupation of the house rather than being intrusive. This implies at least one phase of occupation dated to the mid second century AD. The presence of the seal box in a first phase context may indicate that the house was mostly used within the Roman period. Although no cut was seen during excavation it is possible that the box was buried in the floor of the later house and does not help in dating the earlier phase.

In the evaluation trench next to roundhouse A a single South Gaulish samian sherd dating to AD 70-110 was recovered from the curvilinear gully (3177), and a sherd of undiagnostic Roman pottery from gully 3204. Little can be made of a single dated sherd and while it may indicate an earlier use of Roman pottery this was not necessarily so. The ditch (3175) crossing the line of the enclosure ditches produced a sherd of a Roman jar, but this was not diagnostic to a particular date.

### ***Charred plant remains***

Fifty-six samples were studied from roundhouse A and these included large quantities of wood charcoal (mostly unidentifiable), charred grains and a few nutshell fragments. Most of the samples were contaminated by modern material. Identifiable charcoal proved to be from oak, hazel and, in small quantities, ash and pine. A few charred cereal grains and some chaff were recovered from contexts within the building, especially from both phases of inner drain. These represented a variety of cereals, but overall, these remains were too few to be of any real interpretative value, though clearly they indicated food waste and hence human activity. In contrast the central feature (3518) and the gully leading from it (3570) produced a valuable assemblage of cereal grains, including barley, rye, emmer wheat, spelt wheat and naked wheat, as well as quantities of chaff and some weed seeds. The significance of this assemblage will be discussed below.

## **Roundhouse B**

(Fig. 61)

### ***Description***

About 60m south-east of roundhouse A (NGR SH 59174 70364, 52-54m OD) was a small group of features, two of which seemed to describe the arc of a circle. This was a particularly steep part of the hill slope and most of the features were heavily truncated by erosion. The short linear features 3024 and 3083 were each no more than 4m long, 0.48m wide and 0.18m deep. They were *c.* 4m apart but curved gently as if defining the same arc. Feature 3083 had a lobe on its eastern side, but this may have been disturbance. The conditions were very dry when this area was excavated and the features were difficult to define, so it is possible that they may have been part of one curving gully. To the west were two roughly parallel short gullies (3026 and 3147). These were about 3m long, 0.6m wide and 0.18m deep. The fills of these features were brown or red-brown clayey silts with occasional charcoal flecks. Within this area was also an oval cut 3178 measuring 0.42m by 0.38m by 0.1m deep. This could have

been a truncated posthole, although no post-packing stones survived. A patch of orange-brown silt 3039 adjacent to it was probably a natural deposit, although the records note that there were burnt stones within it. Further west a small circular cut 3038, 0.29m in diameter and 0.11m deep could have been a truncated pit, although its orange brown silty fill was little different to the sub-soil. To the east was a curving gully (9444), about 6.5m long, 0.9m wide and 0.3m deep. This had a very loose brown sandy silt fill with many stones. Its loose nature and darker brown colour suggested a much more modern date than the other features in this area. Also in this area were two small burnt patches (3005 and 3041) and a larger burnt patch (3034). The latter was 3m across and orange and red in colour. There was no evidence that the burning activity was related to a possible roundhouse.

The only other possibly anthropogenic feature was 3067. This was a fairly well-defined oval pit measuring 2m by 1.64m and 0.38m deep. It was filled with brown, stony clayey silt, which was cut by a small steep sided pit 0.5m in diameter 3076. Neither of these pits contained any finds or charcoal.

### ***Interpretation***

During excavation the curving gullies 3024 and 3083 were considered to be part of a possible ring gully around a house. This interpretation might have been rejected but for the discovery of a broken stone spindlewhorl of Iron Age type in feature 3083 (SF471, Fig. 67). The arc of the gullies could imply a circle of about 15.5m in diameter. The parallel gullies 3026 and 3147 would be inside the circle but it is unclear what function they would have in a roundhouse. Possible posthole 3178 would also be inside and could have been part of a post ring, but feature 3038 would lie outside the circle. The presence of the spindlewhorl implies that some at least of these features did represent the severely truncated remains of a roundhouse, but this cannot be proved. If this was a roundhouse it lay between the main settlement and roundhouse E. The projected size of the house and the width of the gully are more similar to the later roundhouses than to roundhouse E. Two more spindlewhorls were recovered from contexts associated with the main settlement, so the potential roundhouse B should probably be considered as an outlier to the clay-walled roundhouse settlement.

### **Northern enclosure**

(Fig. 61)

A substantial ditch was found further north forming a curvilinear enclosure with an area of at least 3550m<sup>2</sup>, which contained what appeared to be three roundhouses (C, D and H). Two of these (C and D) were close together, within 6m of each other, and seemed to have some drainage ditches in common. Roundhouse H was about 13m to the north, but all three seemed to be linked by a possible pathway. All the settlement activity was concentrated in the northern part of the enclosure, with the southern part apparently empty. This area was cut through by two major ditches forming part of the eighteenth and nineteenth-century field systems. All three houses were cut by these ditches, causing some critical relationships between features to be lost. The enclosure ditch was confused by another ditch, which was also part of the late field system. Additional damage had been caused by the numerous field drains cutting through this area.

### ***Roundhouse C***

(Fig. 68, plate 18)

#### ***Description***

The first focus of activity to be investigated was defined by a semi-circular linear gully and other curvilinear features. The semi-circular gully (3630) ran from a rounded terminus at the north-eastern end around to the south and faded away at the western end. It had an internal diameter of approximately 6m and varied in width from 0.6 to 0.8m generally but spread at its eastern terminus to 0.9m and thinned at its western end to 0.3m. The gully had a fairly regular concave profile and was 0.16 to 0.19m deep but shallowed at either end. The basal fill was a mid grey silty clay containing occasional charcoal flecks and stones, some of which were heat altered. In places the stones became quite concentrated and appeared to be lining the cut but they had been considerably disturbed. Sealing this was orange brown clayey silt with frequent larger stones. This deposit had a somewhat humic appearance and in several places appeared to extend beyond the confines of the cut, particularly in the south-east where two large lobes of material bulged downslope, one engulfing posthole (3766).

The semi-circular gully may have continued to the north as a much less substantial curvilinear feature (3783) arcing round from the south towards the north-west. This was an extremely ephemeral feature only visible during damp ground conditions and was no more than 0.15m deep and up to 0.48m wide, with gradually sloping sides. It was filled by grey and orange-brown sandy clay, which was quite variable giving the impression of different fills, and possibly even several recuts, but it is likely these were just variations in a single fill. There was no evidence that it actually joined to 3630.

The western end of the gully 3630 was cut by an irregular oval posthole (3839). It was 0.7m in diameter and 0.26m deep and retained its postpipe, which was set tightly against the south-eastern edge. The postpipe was filled by grey clay silt and some larger stones had collapsed into it from the post packing. This posthole was matched by another 3m to the north. This was a circular cut (3867) 0.6m in diameter and 0.27m deep, and was filled with abundant fire-cracked stones.

An arc of three postholes (3678, 3766 and 3780) was identified just inside the semi-circular gully. These were fairly evenly spaced with gaps of 3.05m and 3.43m between them. Posthole 3678 was roughly square and 0.24m deep with an adjacent smaller posthole (3683). Postholes 3766 and 3780 were sub-circular with vertical sides and measuring 0.3m in diameter and up to 0.45m deep. The latter was truncated by a larger posthole or stone-filled pit (3704), which was filled with large cobbles, some of them heat-cracked, in a mid grey clay silt matrix.

In the centre of the area defined by the semi-circular gully 3630 was a complex of intercutting pits, all sub-circular and none more than 1m across. The earliest features in the sequence stratigraphically were pits 3586 and 3589; up to 0.22m deep and filled by grey sandy clays, in which there was no evidence of burning. These were cut by pit 3325, which was 0.28m deep. Pit 3667 was rather more irregular in shape than the others and had a large flagstone lying flat on the surface of its fill. Pit 3694, 0.27m deep, was filled by grey silty clay containing much charcoal, large fractured rounded stones, frequent fragments of burnt clay, and one piece of Roman Samian pottery. Both the fills of 3667 and 3694 were partially sealed by an irregular oval shaped deposit (3648) only 0.04m thick. It comprised a dark grey clayey silt containing charcoal and small burnt stones.

Feature 3673 was a shallow hollow 0.08m deep filled by mottled orange and grey sandy clay containing charcoal flecks, and sealed by black sandy silt containing frequent charcoal, with pieces of burnt shale lying flat on its surface. Over this area there was also a 0.12m thick deposit of mottled orange sandy clay under a series of smaller, thinner layers and lenses, which exhibited considerable signs of burning in the form of burnt clay and charcoal. These deposits were truncated by a sub-square pit (3674) 0.1m deep.

Also in this central area were several irregular shallow hollows (3500, 3760 and 3762) that appeared to be animal burrows or similar disturbance. A group of shallow features (3784 to 3790), up to 0.25m in diameter and no more than 0.14m deep, may also have been disturbance but probably included some genuine stakeholes. Their fills contained small quantities of charcoal. A shallow scoop (3724), 0.08m deep, contained a charcoal-rich fill, and probably represents the remains of a pit largely cut away by a land drain.

The eastern and southern sides of this activity area were defined by a complex of recut ditches. The north-eastern termini of most of the recuts aligned with the north-eastern terminus of the semi-circular gully 3630 and their arcs shadowed that of the gully maintaining a fairly constant 1.5m distance between the two features. Over the several phases of recutting the profile and depth of the ditches varied. The earliest version was 9465, which survived as a 6.5m length of ditch with a distinct 'V' profile and was 0.9m wide and 0.55m deep. It had a deliberate rounded terminus at its north-east end but was truncated away by the later cut (9467) at its south-west end.

Ditch 9465 was cut about halfway along its length by a small, severely truncated pit 3446. Little of this pit survived as it was cut to the north-west and south-east by later features but it was at least 0.4m deep and filled by silty clay containing rare flecks of charcoal. Cutting through the pit was what appeared to be a driven stakehole (3447) measuring 0.15m wide and 0.65m deep. Another probable stakehole (3482), 0.1m in diameter and 0.71m deep, was found 0.8m to the south.

The ditch was recut along the same line, but to smaller dimensions. This recut (9467) had a V-shaped profile and measured between 0.45 and 0.60m wide and a maximum of 0.55m deep. It survived much further to the south-west than the earlier cut, where there was a deliberate rounded terminus. The north-eastern terminus of 9467 was not clearly identified, but fills similar to those in 9467 were present in the end of 9465 and it is argued that the north-eastern end of 9467 was coterminous with the end of the earlier ditch 9465.

Immediately to the east of 9467 and partially truncating its east edge was 9468. This was another stretch of curvilinear ditch following the curve of the preceding two, which ran from close to the terminus of 9465 in the north-east and finished adjacent to the south-western terminus of 9467. It had a distinctive flattened 'U' profile and was a maximum of 0.35m deep. It was 1.35m wide in the north-east, where its upper fill was confused by post-medieval cobbling (3522), progressively narrowing until it measured only 0.4m wide at its south-west terminus.

Ditch 9468 was cut by another, much smaller curvilinear ditch 9472, again generally shadowing the curves of the previous ditches. It start from about the same point in the north-east as the other ditches, though it faded out here rather than having a deliberate terminus, and extended 5.83m to end in the south with a rounded terminus. It had a concave profile and measured a maximum 0.5m wide by a



maximum 0.3m deep. A small pit or posthole (3621), only 0.1m deep was located near the north-eastern terminus of ditch 9468.

Sealing and confusing the upper fills of this ditch was the remains of a cobbled surface (3522). A number of horseshoes within this deposit suggested it was post-medieval in date and related to the ditches cutting through the area.

The line of 9472 was continued to the south-west by 9474, another curvilinear ditch, with a concave profile which became progressively wider as it proceeded to the south-west ranging from 0.7m in the east to 2.1m in the south-west. It was 0.37m deep in the east and 0.25m deep in the south-west. It was filled by mid grey clay. The east end of 9474 was a deliberate rounded terminus while the south-west end eventually merged into an irregular channel (3687).

Ditch 9474 cut the northern end of a short length of ditch (3856) running from north-east to south-west. The latter was 5.7m long and 0.36m deep, and also merged in to channel 3687 at its southern end. This channel 3687 ran from south to north and then where it met the ditches 9474 and 3856, veered off towards the west (as 3838). Channel 3687 was poorly defined but it became narrower and more clearly defined as it turned west as 3858, before it faded out downhill. The fill of this channel seemed to spread out over the area covering it with a layer of mid grey sandy clay (3799/3754/3752). This deposit was cut by 3767, an irregular but steep sided oval cut, 0.28m deep and filled by a grey clay containing a considerable proportion of stones, many fire cracked.

Immediately to the north of 9474 was a series of linear features, the first of which (9475) just truncated the last metre or so of the western end of ditch 9467. In the east it was a clear well-defined linear slot with a pronounced 'U' profile and a narrow rounded terminus. It was a maximum 0.3m wide and 0.28m deep. Towards the west its character changed, and although the north edge of the slot remained clear and sharp its south edge became shallow, in places almost imperceptible. The feature remained straight in orientation but quite irregular in shape with both the north and south edges somewhat ragged and meandering. It had a shallow irregular terminus at its west end, and overall was 8.15m long, and filled by grey brown sandy silty clay with occasional fire cracked stones. Slot 9475 was truncated on its southern edge by a possible posthole (3896). This measured 0.56m long by 0.4m wide and 0.3m deep. It had steep sides and a large embedded flat stone in the base. It was filled by medium sized stones sealed by grey sandy clay. After a gap of 1.7m the linear feature seemed to continue on the same orientation for a further 4.4m to the west as cut 9477. It was generally 0.3-0.35m wide and 0.07m deep with a shallow concave profile and a rounded terminus at each end. It was filled by grey coarse sand containing occasional charcoal flecks and a few fire cracked stones. A further short gully (3618/3890), up to 0.28m deep, was identified just clipping the eastern end of 9475 and extending off towards the west where it appeared to fade out.

Running roughly north-south to the north of the semi-circular gully 3630 was a straight, shallow gully 3952. It was generally 0.5m wide and a maximum of 0.15m deep, was filled by grey brown clayey silt containing some charcoal, and its northern end was shallow and confused. A straight, stone-filled cut (3832), up to 0.55m deep, ran at right angles from the north end of 3952. The relationship between these features could not be established due to the shallowness of the deposits but their relative positions suggest contemporaneity. A large, stone-lined pit (3874) was located immediately south of the western end of 3832. The relationship between these features was not clear. It is possible that the pit was the latest but this is not certain. Pit 3874 was roughly circular, measuring 1.4m in diameter and 0.4m deep with moderately steep sides and a flat bottom. It appeared to have been lined with large rounded stones fairly carefully laid up to four courses high. In the base of the cut there was a layer of smaller stones set into the top of a thin grey gravely sandy clay deposit. Filling the central space enclosed by the larger stones was a wet, plastic, grey silty clay containing frequent stones some burnt. This was sealed by a layer of stones, many of which were burnt. There was another, unlined and shallower pit further east. This pit (3737) measured 1.4m by 1.0m and was 0.24m deep. It was filled by dark greyish brown silty clay containing burnt stone.

To the north of the main area of activity a broad hollow 9083 ran south-west to north-east. This was 21.7m long and about 4.5m wide. Its southern side was gradually sloping but fairly well-defined but its northern side barely existed, so that the feature was more of a terrace than a hollow. On the southern side the terraced edge was up to 0.3m deep. The flat base of the hollow was covered by a dense, even layers of stones (3756), over which was a grey silt (9084). On the southern side of the hollow, closest to the activity described above was a concentration of larger stones (9012). These initially appeared to be structural but excavation suggested that if so they were not *in situ*, but were mixed with the grey silt.

### *Interpretation*

The semi-circular gully 3630 is interpreted as the inner drain of a roundhouse (roundhouse C), designed to drain water from inside the house and downhill to the west. The stones seen on the surface

before excavation suggested a stone lining or capping. However, on excavation most stones seemed to be jumbled, and there were few stones large enough to cap the drain. Whatever the original structure of the drain it had been heavily disturbed, probably by ploughing, which was further demonstrated by the discovery of a post-medieval clay pipe bowl from low within the fill.

The arc of three postholes was just inside the internal drain, seemed to respect the inside edge of the inner drain, and the postholes were quite evenly distributed around its arc. They would, therefore, seem to have been part of a structure related to the drain. However, the relationship between posthole 3780 and the feature cutting it (3704) is problematical. No differentiation could be identified in the fills during excavation. It seems unlikely that 3780 and 3704 represent the same activity, and 3704 might be best explained as a cut for robbing out the post contained in 3780. The hole was then used to dispose of large cobbles. The relationship between cut 3704 and the internal drain 3630 was also unclear but it is most probable that feature 3704 cut the inner drain and that the drain and posthole 3780 were contemporary.

The complex of intercutting pits (3325, 3586, 3589, 3667, 3673 and 3694) in the middle of the house can probably be interpreted as two sequential pairs of posts followed by a sequence of hearths. The stratigraphic sequence suggested that the pits were dug and used in pairs, with 3586 and 3589 being the earliest, followed by 3325 and probably 3667, and 3673 and 3694 being the last in the sequence. There was very little evidence of burning in the fills of the earliest features in the sequence (cuts 3586, 3589, 3325, 3667), in fact most of the fills had the appearance of redeposited natural. This would suggest that these were structural, representing postholes for some sort of internal timber feature. The distance between each pair is similar: 1.08m between 3586 and 3589, and 0.97m between 3325 and 3667. This perhaps indicates that they represent two versions of the same type of structure or structural element. There is considerable evidence of burning in the remainder of the sequence with 3673 as a definite candidate for a hearth site and the series of lenses over this area also strongly suggesting *in situ* burning. Pit 3694 contains much residue of burning but this appears to be the result of dumping from elsewhere. It is noted that the roundhouse at Moel y Gerddi, despite being of a different construction type, had in its centre a complex of intercutting pits and scoops with a hearth in the top similar to those discussed here (Kelly 1988).

It is possible to discount the rest of the features within the middle of the house as animal burrows or other natural hollows. The group of possible stakeholes near the terminus to 3630 could, however, be genuine. Four of these 3784, 3785, 3787, and 3788 seemed to form a short alignment running east-west, which could be continued further to the west by features 3760 and 3762. These were very irregular and suggestive of animal burrows and it is possible that the whole line was the remains of a burrow system. However, this line almost exactly bisects the circle defined by internal drain 3630 and it could be the trace of an internal division.

The alignment of the north-east end of the external ditches and the two ends of the inner drain appears to be deliberate and could indicate an entrance in the north-eastern side of the house. This, however, seems impractical as the entrance would face upslope and would be unprotected from rain runoff. A more likely entrance may be indicated by the two postholes (3839 and 3867) on the western side. This would give an entrance facing north-west and down slope, but the relationship of 3839 to the inner drain makes this interpretation difficult. Posthole 3839 cut through the fill of the inner drain and it is hard to see how the latter could have functioned with the post in place.

The exterior of the roundhouse was defined by the repeatedly recut ditches round the uphill side. These represented the storm drain protecting the house. The repeated recutting may suggest that the house was used over a fairly long period of time, but there is no evidence of the house itself being rebuilt over this time or of its size changing. The ditches opened into a marshy area represented by the grey clay deposit.

While these ditches probably all functioned as storm drains they may not all have been dug primarily for that function. The peculiar dimensions of ditch 9468 with its broad shallow profile and the suggestion of a shoulder on its western edge in several of the sections may indicate that it initially had a different function. One possibility is as a quarry for the wall material. At its north-eastern end, where the ditch was widest, it cut through a clean, plastic, clay, which could have been good building material. It may have thus started life as a shallow quarry scoop and then evolved into a ditch later as needs dictated.

The outsized breadth and depth of the earlier curvilinear ditches (9465, 9467, and 9468) may suggest that these ditches predate the large enclosure ditch to the east; their size being necessary to control the volume of runoff and silting caused by the hill slope. These ditches terminated on the southern side of the roundhouse in what was, or subsequently became, a muddy hollow. Later a much smaller, shallower ditch (9472) replaced the earlier ditches. The smaller dimensions suggest that it had to deal

with significantly less water and silting; perhaps by this time the larger enclosure ditch had been dug and was diverting the majority of the runoff.

The earlier ditches seem to have emptied straight out at their south-western ends, but the later ditches (3856 and 9474) turned more to the south into the channel 3687/3858. This may have been to divert the water around roundhouse D to the west. The relationship between the clayey fill of the muddy area and the ditch cut 9474 was not clearly demonstrated, as it was not possible to distinguish between them in plan. The edges of 9474 only became clear when the general muddy layer was removed. The most likely interpretation is that this area was always a muddy hollow possibly due to flow from the natural channel 3867. The early curvilinear ditches 9467 and 9468 then added to this by discharging their overflow into this area. Once it was decided to build roundhouse D the later ditches had to be extended and slightly realigned to divert the water.

The idea that the two roundhouses may have been at least partly contemporary is perhaps strengthened by the fact that the narrow linear feature 9475/9477 was also added. This ran from the south-west side of roundhouse C and extended towards the south side of 'roundhouse' D, which it seemed to respect. These and the other slots in this area are enigmatic. They seem to form some sort of connection between roundhouse C and D. Both 9475 and the much shorter 3618/3890 start adjacent to the termini of the curvilinear storm drains 9467 and 9468. Though the ditch 9467 is truncated by the slot 9475, it is possible that ditch 9468 was contemporary with the slots. The 1.7m gap between the west end of 9475 and the east end of 9477 suggests an access way, which perhaps argues against them as drainage features; although the gap could be the result of plough truncation. It is possible that they represent beam slots for timber fences, however 9475 in particular was very irregular in shape and may have been partly colonised by a hedge. Whatever their form these features seem to have marked out a limit, possibly defining a domestic yard. Another link between roundhouses C and D was the hollow 9083. The presence of heat-cracked stones in the stone layer on its base suggests that this layer was not naturally deposited but was deliberately laid. The cut was terraced into the slope to provide a flat surface for the cobbling, which seems to have run from roundhouse D, past C and on to roundhouse H, creating a short trackway between them.

The exact position and thickness of the wall of roundhouse C is difficult to establish. A wall with an external diameter of 10.4m could be accommodated within the storm gullies. A larger diameter is possible but only if the wall varied greatly in thickness around the circuit as this would not allow the internal face to be concentric with the external one. An internal diameter of 8m encloses all the inner features, runs through the possible entrance posts, and gives a wall thickness of about 1.3m. The wall could have been slightly wider in later phases when the storm gully was recut to a slightly larger diameter, but some trace of the wall might be expected in the upper fills of the earliest ditches in this case, and this was not demonstrated. Almost any reconstruction of the house places gully 3783 below the wall. It is not possible to include this feature in a circular house along with the main inner drain 3630, which does suggest that 3783 was merely an animal burrow.

It was originally thought that some trace of the clay wall actually survived. A band of a rusty brown very slightly silty clay (3743) lay between the inner drain and outer storm gullies, but on excavation it was seen to be the altered surface of the boulder clay rather than a discrete layer. Very similar material could be seen eroding into the top of the inner edge of the storm gullies. This deposit may have been part of the natural variation of the boulder clay but it was not recognised anywhere else on site and the position seems to be very suggestive. It is suggested that the orange colouration resulted from soil changes beneath the clay wall of the roundhouse.

There may have been another, probably later phase of activity to the north of roundhouse C. The arrangement of the gullies 3952 and 3832 forming a right angle with the stone-lined pit 3874 in the corner suggests they are all related. The stratigraphy was far from clear and although 3874 appeared to cut the fill of 3832 it is possible that the pit went through several phases of development and refurbishment; possibly the stone-lining was a later addition. The stone lining was fairly crude but the stones were laid on top of each other and would have been self-supporting. They were quite different to the more random arrangement of packing stones around a post, which tend to collapse inward once the post has been removed. The clay-rich fill of the pit suggests it held water, although this was not necessarily its original function, which may have been for storage. Gully 3952 extended across the proposed line of the roundhouse wall, suggesting that these features belong to a different phase of activity to the roundhouse, probably later. However, storage pits are typical of the Iron Age and pit 3874 could be related to the rest of the settlement.

Despite the lack of depth of stratigraphy there were some probable traces of the abandonment of the roundhouse. The upper fill of the inner drain may represent its abandonment. In several places this fill was seen to overflow the cut and extend beyond it downslope. Its somewhat humic appearance and stone-filled nature are suggestive of abandonment. Cut 3704 can be interpreted as a post robbing cut

and, therefore, part of the abandonment activity. The sealing of posthole 3766 by what appears to be overflow from the drain may indicate that this post too was no longer in position when the drain went out of use. The quantity of larger stones in these features, especially the amount of stone in the upper fill of the inner drain and in the fill of 3704 could indicate the use of stone in the structure of the house, which collapsed or was levelled into these features on abandonment. The larger stones (9012) in the south-eastern side of the hollow or trackway 9083 should also be noted. Their positions suggested the collapse of a structure on the edge of the hollow. The wall of roundhouse C can be reconstructed to run immediately to the east of this hollow and would be a good candidate for the origin of this stone. The quantity of stone in (9012) and features inside the roundhouse is suggestive of the use of stone in its construction. This is most likely to have been as a low wall foundation as was found in structure 5 at Cefn Cwmwd, Rhostrehwfa, Anglesey (Roberts *et al* forthcoming). This structure had stone wall footings defined on the inner face by large rounded cobbles similar to those within (9012).

### **Roundhouse D**

(Fig. 68)

#### *Description*

About 6m to the west of roundhouse C was another semi-circular gully (3757) measuring about 9m internal diameter, up to 1.45m wide and up to 0.43m deep. This was filled by layers of grey-brown loamy silt with flecks of charcoal and some medium sized stones. The gully appeared to have been recut, at least along part of the circuit, to a narrower width. The recut (3769) measured 0.55m wide and 0.33m deep, and was filled by a mid-grey clayey silt with slightly more charcoal and stones than the earlier fills. The line of this recut was not very clear but two flat stones probably lay in the surface of this feature.

The south-western arc of the gully ran down hill, apparently heading for a large area of stones (9176), although its relationship with this cannot be determined as it was cut by a later, stone-filled drainage feature (9103). The northern end of the arc was confused by a land drain and the nineteenth-century field boundary ditch. It may have joined a straight ditch (3992) running downhill to the west at a slight angle to the hill slope. This ditch was a total of 17m long, extending far to the west of the main area of activity. It was up to 2.3m wide at its eastern end but for most of its length was no more than 0.6m wide and up to 0.36m deep. It was filled by a grey-brown silty clay and frequent stones, some of which were burnt. The upper end of this ditch had two lobes on its southern side and contained sherds from the base of a Samian pot.

A narrow, shallow gully (3929) also continued to the north and may have been the exit for the semi-circular gully in a different phase. Unfortunately the relationship between these features was destroyed by a later gully or furrow (3931) containing post-medieval pottery. Gully 3929 was at least 5m long and up to 0.8m wide and up to 0.18m deep. Its fill was a greyish brown silty clay with frequent charcoal flecks and burnt stones.

There were very few features inside the semi-circular gully 3757. A line of narrow linear features (3960, 9027 and 9052) cut across the middle of the area. Feature 9027, 0.1m deep, was fairly regular and slot-like, 3960 was less regular and deeper at 0.28m deep, with what appeared to be post impressions in its base. Although ending very close to the ring ditch there was no direct relationship between the two features and they could have been contemporary. Both slots were filled by grey silty clay with stones, many of which were burnt. A third feature (9052) was much less regular and contained coal fragments. It was interpreted as an animal burrow and disturbance by burrowing in 3960 may explain its irregularity and the presence of coal fragments in its fill. Nearby was a well-defined posthole 9034 with a diameter of 0.54m and a depth of 0.49m. This was filled by a brownish grey silty clay with frequent charcoal, burnt stone and some larger packing stones.

The features towards the northern arc of the gully seemed to cut a stony deposit (3756). This was composed largely of stones, some of which were fire-cracked. The spread of stones was very level and resembled a cobbled surface. This formed the south-western end of the stone layer in the base of the broad hollow 9083, which continued north-east past roundhouse C and clipping the possible outer gully for roundhouse H. Within (3756), close to the roundhouse D ring-gully, was found a Roman coin.

#### *Interpretation*

The semi-circular gully appeared to define another roundhouse (roundhouse D). The presence of large slabs in the later phase of the gully is suggestive of an internal stone-capped drain, but there were no features identifiable as an eaves drip gully or outer storm gully. If this structure was contemporary with roundhouse C it may be that it was adequately protected by the gullies around roundhouse C and did not require its own storm gully. These gullies, especially in their later forms, did seem to curve out to take roundhouse D into account. However, if the gullies 3929 to the north and 9477 to the south were



contemporary with the roundhouse it left no room for a broad clay wall. The cobbled surface (3756) would also have been hidden under a wall. Although the relationships in this area were difficult to establish it appeared that the cobbles stopped at the semi-circular gully and may have provided a surface outside the structure; no gap indicating the location of a wall was present. The straight gully 3992 is not paralleled in the other houses in this settlement. It is probable that this collection of features represents not a roundhouse but a small enclosed area defined by a ditch later superseded by a covered drain. Any structure within this area appears to have been very slight. The slots and posthole inside the enclosure do not suggest an obvious structural form, but could have been related to agricultural processing or storage. The enclosed area was approximately 9m in diameter, although constricted on the northern side by ditch 3992.

The semi-circular drain seems to have emptied out into an area of stones (9176). The presence of a small piece of modern glass in this suggests disturbance but a large sherd of Roman pottery does suggest that this area may have been used as a soak-away when roundhouse D was in use.

### **Roundhouse H**

(Fig. 69, plate 19)

#### *Description*

To the north-east of roundhouses C and D was a circular gully (9163) with many of its capping stones still *in situ*. This measured about 4.5m diameter internally and 5.5m diameter externally. It was up to 0.65m wide and 0.3m deep and filled by a grey-brown clayey silt with occasional small stones and lenses of charcoal, some of which were dense. It was cut through on the southern side by a nineteenth-century field boundary ditch.

The circular gully emptied out downhill into a sinuous gully (9169) that initially started narrow and well-defined, c. 0.36m wide and 0.25m deep, but became broader (up to 0.9m wide) and more irregular as it ran down the slope. It was cut by the nineteenth-century ditch but seems to have continued on the other side.

There were several features inside the circular gully. These included a patch of heat-reddened clay (9165) measuring 0.96m by 0.72m. Adjacent to it was concentration of rounded stones within grey clayey silt (9187), possibly the remains of a stone surface. A group of three flat slabs (9275), two pressed into the ground as if by some pressure, lay on the edge of (9187). There was also a small round pit (9184), 0.6m in diameter and 0.27m deep, with a large stone in the top of the fill, which was a grey clayey silt with large rounded stones. A narrow, rather irregular gully (9186), only 0.12m deep, ran in towards the centre from the circular gully. This seems to have continued for a short distance beyond the circular gully to the south-east, truncated by the nineteenth-century ditch. Many of these features were sealed by a thin (less than 0.1m thick) grey silt (9164) containing sherds of Romano-British pottery.

On the south-eastern side of the circular gully were two postholes. One (9191) was 0.5m deep and set within a longer cut, the other (9234) was only 0.15m deep. Neither contained packing stones, but the shape and depth of 9191 makes it particularly convincing as a posthole. This feature was on the edge of the circular gully and subtle differences in the colour of the fills hinted that the gully cut the fill of the posthole, however, it is more likely that they were contemporary and that they filled in at difference rates.

A curving gully (9281) ran around the southern arc of the area about 2.5m from the circular gully, and roughly concentric with it. This was up to 0.45m wide, though often narrower, and 0.2m deep. Its fill was a greyish brown clayey silt, containing charcoal and some stone. It was cut at its north-eastern end by the nineteenth-century ditch and did not reappear. Its southern side was very confused by an adjacent broad hollow (9285). This hollow was filled with layers of stones, the lowest of which resembled cobbling.

The western end of gully 9281 appeared to be cut by the broad rounded terminus of gully 9162/9260. This gully started on the uphill end as a broad shallow feature up to 2m wide and 0.25m deep and narrowed down to no more than 0.4m, curving to form an irregular semi-circle. To the south there was a large, roughly circular pit (9277) measuring 1.7m by 1.4m and 0.33m in depth and filled by greyish brown silty loam containing a few stones and occasional charcoal flecks.

To the north-east of the circular gully was another narrow curving gully (9170), about 6.5m long, 0.5m wide and 0.22m deep. There was a slight hint in the section that 9170 cut through the fill of the main settlement enclosure ditch (3712), but this was not clear and it makes more sense if both features were contemporary. The relationship was further confused by a short line of flat slabs (9158) overlying the fill of the enclosure ditch at this point. The line was 2.4m long and the slabs measured up to 0.6m in length.

Gully 9170 may have been cut by a furrow resembling a plough scar (9171), although the relationship was unclear. The possible plough scar was presumably early as it ran parallel to the settlement enclosure ditch.

Near the southern end of 9170 was a rather irregular pit (9172) measuring 0.81m by 0.68m and 0.23m in depth. Its fill contained flecks of charcoal and occasional burnt stones. Another small pit (9263) measuring 0.8m by 0.4m and containing some larger stones was present on the western side of the ring drain but it was confused by the nineteenth-century ditch and its function was not clear.

### *Interpretation*

The circular gully 9163 appeared to be the best preserved inner drain of any of the roundhouses. Several of the flat stones forming the drain capping were *in situ*, though there were no side or basal slabs. The capping stones seemed to rest directly on the drain fill rather than being supported by the sides of the cut, but it is assumed that this is a post-depositional artefact caused by soil processes and animal activity eroding back the sides of the cut. Despite the quality of preservation there was no evidence of the occupation layers being deposited over and around the capping stones of the inner drain. The impression was of the capping stones projecting above the contemporary ground level.

The near perfect circle of this drain is unlike the others on site and its exit drain (9169) is also unique, but these features can be paralleled on other roundhouse settlement sites. Structure 1 at Cefn Du had what appeared to be the start of a ring drain, the exit of which passed under the house wall (Cutler forthcoming, 8). Bush Farm house B had a better preserved ring drain again exiting through the wall (Longley *et al* 1998, 199). Neither had the long drainage gully leading away from the house that roundhouse H possessed.

Gully 9162/9260 seemed to approximately match the curve of the exit drain 9169 and could be interpreted as drainage around another house. However, this gully did not protect the upslope arc of the area it defined, so this function seems unlikely. No trace of a structure was found inside this area except fragments of burnt clay, possibly burnt daub (9268), in the base of the ploughsoil. The large circular pit (9277) in this area could be a storage pit, although there was no firm evidence that it was contemporary with the other features.

The features inside the inner drain were also well preserved, including a central hearth (9165). This was just an area of burnt boulder clay but patches of cobbling (9187) adjacent to it suggest floor layers or a more complex hearth structure. The group of three flat slabs (9275) may have been a post pad or support for a large pot or other domestic item. The small round pit (9184) was presumably related to the same activity. The function of the narrow gully running in towards the hearth was unclear. It seems to have continued on the other side of the nineteenth-century ditch, but its relationship to the inner drain could not be established because the ditch had cut away too much of the critical area. This might be discounted as an animal burrow, but it contained numerous sherds of Romano-British Black Burnished Ware. The grey silt layer (9164) sealing the features inside the house might be interpreted as the remains of an occupation deposit due to the quantity of Romano-British pottery found within it.

Despite intensive trowelling no clear storm gully was found around this house but there was a hint of a rather narrow, roughly concentric gully that may have at least partly performed this function. This gully 9281 ran around the southern arc of the house about 2.5m from the inner drain. It did not reappear to the north-east of the nineteenth-century ditch but the other narrow curvilinear gully (9170) may have performed the same function. There was no evidence that these gullies had joined and the different orientations of their arcs suggest they were separate features. This gap might indicate an entrance into the house. If this were so postholes 9191 and 9234 might have been part of a porch, although the absence of matching pair of posts makes this interpretation problematic. An entrance on this side of the house would open uphill making the house vulnerable to flooding, but with the main enclosure ditch about 5m away this area may have been well drained.

The curving gully (9170) seemed to run into the main enclosure ditch, and if these features are accepted as contemporary 9170 could have been designed to drain water into the main ditch. The line of flat slabs (9158) overlying the fill of the enclosure ditch at this point are assumed to be drain capping stones. The cut for this drain was not clearly visible in section, but considering that it had been cut into ditch fill this is to be expected. This potential capped drain seemed to follow the line of the earlier ditch and no evidence of it being part of the internal drain of the roundhouse was detected.

The broad hollow (9285) was the north-eastern end of the possible trackway (9083) that started at roundhouse D. Here its upper fills contained more stone than elsewhere but the lower fill was still level and dense and consistent with a cobbled surface. The confused relationship between 9281 and 9285 would be consistent with erosion on the edge of a contemporary pathway.

The other small pits around this area are assumed to be related to the roundhouse activity, but their functions are not clear.

A structure with an external diameter of 9.4m could be fitted in amongst the features in this area, assuming they are mostly contemporary, but the lack of clear concentric gullies makes the position of the outer wall very uncertain. An internal diameter of about 7m might be proposed, but it could be considerably larger than this, or alternatively somewhat smaller. The dimensions proposed give a wall thickness of about 1.3m and comparison with other clay-walled roundhouses suggest the wall width is unlikely to be much less. The house appeared to be a single phase construction, but the artefactual evidence (discussed below) hints at later re-use.

### ***Northern enclosure ditch***

(Fig. 61)

The northern group of roundhouses was enclosed by a curvilinear ditch. This formed a teardrop shape, enclosing a large unoccupied area as well as the roundhouses. The route of the ditch to the north was not traced and it was not clear if this side was fully enclosed. There were two apparent breaks in the exposed length of the ditch but they seem to have been the result of truncation. The gap in the north-east arc occurred where the mechanical digger had stripped too deeply and ploughing seems to have already reduced the depth of the ditch considerably in this area. The gap in the south-western arc can also be explained by truncation as the ends of the ditches become shallower and peter out at each side of the gap. The exposed circuit of the ditch, therefore, appears to have had no entrance. The northern section where the line diverted towards the north may indicate an entrance.

The size and profile of the ditch varied considerably, partly due to truncation but some of the changes are less easily explained. The eastern side was best preserved, and here the ditch reached a maximum depth of 0.9m and a width of 4.1m, with a broad U-shaped profile. Only 23m to the north the ditch had a sharp V-shaped profile and though it was still 0.87m deep it was only 1.4m wide. The ditch also became V-shaped to the south, where, at its deepest it was 0.7m deep and 2.2m wide. The northern extension was much smaller and slighter, at most 2.87m wide and 0.33m deep but in places no more than 0.13m deep. This must partly be due to truncation. The western part was also shallow, up to 2.5m wide and 0.45m deep, and generally U-shaped in profile. Despite this variation there was no evidence of recutting at any point, and the ditch appears to have had a single phase.

The variation in profile may relate to the function of the ditch. If it functioned more as a drain to keep water out of the settlement than a defensive ditch the eastern, up slope side may have been broad to collect water and where the ditch ran down the slope it was deepened and steepened to improve water flow. There was no obvious overflow channel on the western, downhill side, but the ditch in this area shows a lower lip in the western side, possibly where water in the ditch has overflowed and eroded the ditch side.

The lower fills of the ditches generally appeared to be waterlaid clays, although in some cases the fills extended far up the ditch sides as if the sediment was deposited from water trickling down the sides rather than flowing in the base. However, this effect is as likely to be due to post-depositional soil processes as actual depositional processes, probably a combination of settling of sediments and gleying. There were also quantities of stone in some fills but these are not asymmetric, which would suggest collapse from a bank, and are probably the result of erosion of the ploughsoil. The exception is a section on the southern arc of the ditch, where quantities of stony clay had slumped into the ditch from the inside of the enclosure.

### ***Finds***

(Figs 66 and 67)

The finds from roundhouses C and D were sparse. Roundhouse C produced only two sherds of pottery, a sherd of Samian Ware dating to AD 70-110 from pit 3694 in the central complex and a flagon handle from outer gully 9474. The water-cut channel to the south of the house (3687) produced the only medieval sherd from the site, but as the fill of the channel was mixed with ploughsoil, this cannot be used as dating evidence. A fragment of the lower stone of a saddle quern was found embedded in the boulder clay just inside the inner drain. Disturbance is evidenced by intrusive material such as the clay pipe bowl from the inner drain of the house and a sherd of modern glass from ditch 9474. This is to be expected with the post-medieval activity in this area related to the opening of a driveway into the fields. The patch of cobbling (3522) relating to this later activity contained parts of four horseshoes.

Roundhouse D was slightly more productive. The drain defining roundhouse D contained two eroded Samian sherds dating to AD 70-110. The shallow gully 3929 on the north side of roundhouse D contained sherds from three Black Burnished Ware jar rims of Hadrianic-Antonine date. The gully 3992 draining west from roundhouse D produced sherds from the footring base of a Samian vessel (SF717, Fig. 66) and sherds of a Samian flagon both probably dating to the later first or early second

century AD. The fill of the possible trackway 9083 included a bodysherd from a large oxidised jar and two sherds from the flanged rim of an Antonine Raetian type mortarium (SF692, Fig. 66). A large amphora body sherd came from the stony soak-away area (9176) to the west of roundhouse D. The coin found within the cobbled surface (3756) was very corroded but was probably a first to second-century AD *as* or *dupondius* (Besely appendix XIII.4).

Evans (appendix IV) considers that the absence of Black Burnished Ware from Roundhouse C may be significant and could indicate that the use of this structure might have ceased by early in the second century AD. The one datable sherd (dated to AD 70-110) would be consistent with this. The material from Roundhouse D fits within the date bracket AD 70-200. The coin found just outside roundhouse D also supports a first to second-century date. There is a risk that such a small assemblage is either intrusive or residual but it does hint at a phase of activity in the second century AD.

A flint blade fragment with fine serrations on one edge was discovered inside roundhouse D in the disturbed area on the edge of the nineteenth-century ditch, though this was presumably residual.

Very small amounts of magnetic slag were found across this area as it was found everywhere on site that it was looked for. However, a slightly larger quantity (4g) of magnetic slag fragments including spheres along with 7g of non-magnetic fuel ash slag was found in 9052, one of the features inside roundhouse D. This feature was assumed to be an animal burrow and also contained coal fragments, so the slag could have been brought down from later activity on the ground surface. The adjacent feature 3960 also contained small fragments of coal and coke, and coke was recovered from gully 3890 and central pit 3674 in roundhouse C. There is evidence for the use of coal in Roman smithing sites (Crew appendix XIII.5) and the coal deposits on Anglesey could have been the source. The use of roundhouse D for smithing cannot be ruled out, although the evidence is slim.

Finds from roundhouse H are also few but their distribution makes them less likely to be residual (Fig. 70). The occupation deposit (9164) over the middle of the house produced three sherds of Samian Ware, one datable to AD 70-110 and two to AD 120-200, and four sherds of Black Burnished Ware probably dating to the third to fourth century AD (e.g. SF745, Fig. 66). The stony deposit below this (9187) produced a sherd of Roman glass and a base sherd of a Black Burnished Ware bowl dating to AD 120 or later. The small pit (9184) contained two sherds of Roman pottery and the narrow gully 9186 within the house produced four sherds of a Black Burnished Ware jar dating to 120 AD or later. The ring drain (9163) contained four sherds of Roman glass, one glass bead, a glass counter and one decorated sherd of Black Burnished Ware, perhaps mid to late second century.

A very eroded sherd of Samian Ware, probably dating to c.AD 70-110, came from the curvilinear gully (9162) and the upper stones over the trackway 9285/9083 produced an undiagnostic Roman pot sherd. The post-medieval ditch and land drain cutting through it contained six Roman pot sherds, a glass bead and a sherd of Roman glass, presumably all originating from roundhouse H.

The finds were concentrated in the middle of the house and within the inner drain, suggesting that this distribution was related to the use of the house. The material from roundhouse H covers the date bracket AD 70-200, but the Black Burnished Ware suggests that the activity extended into the third century AD. The later sherds are all from the overlying layer 9164, so while most of the sherds suggest pottery use in the mid second century AD the house may have been used into the third century. Gully 9170 contained a flake of Graig Lwyd stone, which is assumed to be residual, but could hint that some of these gullies were the result of earlier activity.

The glass is of particular interest as it could represent the collection of waste glass as raw material for the manufacture of beads (Cool, appendix XII and figure 71). The six fragments of vessel glass were from a common type of square bottle, but two of the fragments had their edges ground to shape them into ideal raw material for bead making (SF 749 and SF 755, Fig. 71). Two beads (SF 727 and SF 753, Fig. 71) and a possible counter from roundhouse H are of blue/green glass that could have been produced locally from this raw material. Unfortunately no manufacturing waste was found so the exact location of the bead-making workshop is unknown.

Very few finds were recovered from the fill of the main enclosure ditch. The upper fill of the northern section of the ditch produced two sherds of Romano-British oxidised Ware and a Samian body sherd possibly dating to AD120-200. The proximity of roundhouse H and the fact that these were from the upper fill suggests that they originated in the roundhouse and were redeposited into the ditch. They cannot be used to prove the Romano-British date of the ditch, but a Roman rim sherd from the primary fill of the ditch a little further south is more indicative.

As well as the coin from near roundhouse D three other Roman coins were found on the site, all by metal detecting the ploughsoil in the trenches once the topsoil had been stripped. Two of these, a second-century *sestertius* (SF128) and a corroded coin likely to be Roman (SF160) came from trench 2. A silver *denarius* (SF366) dating to c.AD 161 was recovered from the upper fill of a land drain inside the northern enclosure of the roundhouse settlement. Although it was from a disturbed context it



presumably originated from the settlement and supports a second-century phase of activity. Not far away in the same enclosure was a silver penny of Edward I, which had been heavily worn, clipped and holed, and Besley (appendix XIII.4) believes it could have been lost in the fifteenth or even early sixteenth century. In this case accidental loss by someone working in the fields must be assumed.

### ***Charred plant remains***

Few ancient plant remains were recovered from roundhouse B. There was some unidentifiable, wood charcoal, one grain of naked wheat and one fragment of hazelnut shell. Forty-nine samples were processed from roundhouse C, some of which yielded large quantities of, mostly unidentifiable, wood charcoal. Almost half of the samples contained modern contaminants, but there were a few charred cereal grains including barley, oats, emmer and spelt wheat. There was also a trace of chaff (a glume base) of emmer or spelt wheat. Together these probably represented food waste from hearth areas. There was only a little hazelnut shell and most of the identifiable charcoal fragments were of hazel, with small quantities of oak.

Very little came from the ten samples from Roundhouse D. These produced small amounts of unidentifiable wood charcoal and a few fragments of oak. The fourteen samples from roundhouse H were little more productive, although they did contain some charred cereal grains. The cereal grains were of wheat and there was also a little chaff indicating food waste. Remains of other food plants were similarly sparse, with just a little hazelnut shell. Most of the charcoal was unidentifiable but some larger fragments were of hazel and a little oak was also found.

### **Boundary ditch and other features**

(Fig. 61 and 65)

Between the two enclosures ran a narrow ditch (3421) apparently joining them. At its southern end this ditch started next to the gap through the southern enclosure. It ran parallel to these ditches for a short way. It then curved sharply north following the contours of the hill slope until it petered out just after being cut by the nineteenth-century ditch. At various places along its length there were indications of recutting. In most places the later ditch had removed the earlier one but where it did not perfectly follow the original line the earlier ditch (3423) was preserved. The ditch had a gentle rounded profile and was up to 0.8m wide and 0.32m deep. The earlier version of the ditch survived to no more than 0.4m wide and 0.14m deep. The relationship to the enclosure ditches suggests that this ditch was contemporary and the presence of a stone spindlewhorl (SF535, Fig. 67) in the ditch fill supports this.

This boundary may have been continued after a gap of *c.* 9m by 3544. This was a slightly wiggly ditch 0.93m wide and 0.3m deep. Its south-western end was a well defined rounded terminus and the north-eastern end was also quite well defined suggesting that it never directly joined to the northern enclosure ditch or to the rest of the boundary ditch. There was no proof that it was Romano-British in date, although its dark fill was noticeably different to the nineteenth ditches and furrows in the area, one of which (3425) cut the fill of 3544.

Not far from the south-western end of 3544 was a small, slightly curving gully 3677, at least 3m long, 0.34m wide but only 0.06m deep. This may just have been a water channel but its fill contained heat shattered stone, charcoal, tiny fragments of smithing debris and fragments that may have come from a quern stone.

Occasional patches of burnt stone (3719, 3720, 3721, and 3755) were found within or to the east of the roundhouse settlement. These were amorphous patches, the largest 3.4m long and no more than a maximum of 0.2m deep. They were composed of burnt stones with some charcoal in a matrix of clay or silt. Feature 3755 was within the northern enclosure and 3721 was close to the boundary ditch joining the enclosures, so it is probable that these were related to the settlement. The other two patches were about 35m to the east and there was no evidence to link them to the settlement activity. The nearest burnt mounds were over 100m from any of these features, so it is possible they were related to the settlement but this cannot be demonstrated.

To the east and uphill from the roundhouse settlement was a band of stones (3025), which ran south-west to north-east along the contours of the slope for nearly 200m. These were poorly sorted angular to rounded stones, which ranged in size up to 0.25m. Many of the stones were embedded in the top of the boulder clay, but they were also within a layer of red-brown silty hillwash. These stones were most probably released, moved and concentrated by the action of ploughing. They probably collected at the lower edge of a field and essentially represented the base of a positive lynchet. No dating evidence was recovered from the stones, and the spread ran parallel to the eighteenth and nineteenth century field boundary, but it equally could have been aligned on the roundhouse settlement. It is possible, although not proven, that this deposit represented the edge of a field contemporary with the settlement.

### **Bead cache pit 2104**

(Fig. 72)

Towards the north-eastern corner of the site (NGR SH 59481 70620, 52.5m OD, see Fig. 5 for location) was found a very small pit (2104). This was a small oval cut with quite steep sides and a presumably once flat base that had been significantly disturbed by animal burrowing. It measured 0.45m by 0.28m and was only 0.12m deep, although animal burrowing had made it much deeper in places. The pit cut through (2103), an orange-brown silty clay, which appeared to be a relict soil horizon. The edges of 2104 where it cut through this deposit were not clear. Pit 2104 had a single fill (2098), which was a soft and quite loose mottled mid-dark red-brown sandy silt with sandy patches, some charcoal and small stones. The fill also contained fragments of what appeared to be burnt daub mixed with lime plaster and possibly traces of pigment, and two tiny fragments of what appeared to be prehistoric pottery. Throughout the fill and into the animal burrows in the pit's base were distributed 230 blue annular glass beads and at least 16 red cylindrical glass beads. Some of these had been disturbed by ploughing and were found in the base of the ploughsoil around the pit.

This pit had a larger pit adjacent to it and a burnt patch about 5m away but was otherwise completely isolated with the nearest significant features being about 80m away. These were prehistoric and not related to the bead pit. The roundhouse settlement was over 300m to the south-west.

The adjacent pit (2091) was a circular feature, 1.4m in diameter and 0.3m deep with steep to vertical sides and a flat base. Its fill was soft and loose mid-brown silty loam with sub-rounded stones and some charcoal flecks. It contained no finds and there was no evidence that it was contemporary with pit 2104. Five metres to the south was a shallow pit (2124), measuring 0.76m by 0.56m and 0.1m deep. It had evidence of *in situ* burning on the edges of the cut and its fill was rich in charcoal and it contained a flint flake. Another flint flake was recovered about 4.5m west of pit 2091.

### ***Finds***

(Fig. 73)

The full description and discussion of the beads found in the pit is given in appendix XII, the following text is a summary of Hilary Cool's description and conclusions.

The commonest type of bead in this pit were the 230 deep translucent cobalt blue annular bead decorated by opaque white trails arranged in a wave pattern. Their diameters range from 17 to 21mm, with an average diameter of 18.5mm. The opaque white trailing is sometimes put on with one continuous trail and sometimes uses more than one trail. These beads tend towards two types; some are a very bright and very translucent blue and others are noticeably darker and less bright. The bright blue beads tend to have a blobby trailing, whilst the darker ones have a smoother, yellow spotted trailing. It would seem very probable that the blue and white beads represent at least two batches and given the different way in which the trailing is applied at least two bead makers.

The beads were made by trailing blue glass around a mandrel, which was then tooled into individual beads and trailed. The end result would have been a cylinder of beads joined by thin collars. When this cylinder had been removed from the mandrel and was cold they would have been snapped apart and any irregularities would have been ground away. This group gives every appearance of being very new, and probably unused before deposition. It is to be expected that if they had been much used the fresh appearance of the chips around the perforations would have been dulled through wear. They were not, however, workshop waste or failed beads.

This type of bead is a relatively common one; Guido's Group 5A, dating from the fourth century BC to the seventh century AD, although early ones are not so strongly coloured as these (Guido 1978, 63-4). The total number of known beads of this type is less than seventy, so this find has tripled the number known. Other strongly coloured blue beads found in dated contexts tend to concentrate in the middle to late first century AD. This may be the result of improved dating from associated Roman material, but the first century AD would seem to be the most likely period for the deposition of a freshly made group of these beads.

The other beads present in the pit were produced from a drawn cylinder of red glass. The diameter of these beads is 5 to 5.5mm, and the six complete examples measured in length from 40 to 49mm. Many of the beads were fragmentary but there probably were at least sixteen of these beads. Many of the fragments exhibit a fibrous quality probably due to devitrification along the lines of internal bubbles, which would have formed lines as the beads were drawn. The glass may also be very low in calcium and therefore unstable.

The form of the beads is unusual. Long cylindrical beads are not part of the late Iron Age bead making tradition, and although they do occur in the Roman tradition they are generally less than 20mm in length. Red glass Roman beads are rare and usually very late, but the association here with the blue and white beads argues against a late date. Thus in colour, form and the type of glass used the red

beads are very unusual and probably unparalleled. The long cylinders might have been intended as blanks to be cut down into shorted beads. This combined with the fresh nature of the blue and white beads suggests that the beads were recently manufactured and unused before being deposited. It makes most sense in this case that they were made nearby. Most of the finds from roundhouse H indicate a second century AD date but some activity in the first century is indicated and the radiocarbon dates are so general that they could easily accommodate this (see dating section below). The bead making evidence associated with this roundhouse could, therefore, be contemporary with the cache. The material from roundhouse H indicates beads made from blue/green bottle glass, while the cache demonstrates different colours and techniques. However, there is no obvious reason why they might not be made by the same workshop.

Cool (appendix XII) considers this whole assemblage to be unusual. Glass beads are rarely hoarded but this group suggests that they were regarded as being of value and were deliberately deposited. Their deposition could have occurred when the Roman army was campaigning in North Wales culminating in the attack on Anglesey in AD 60 (Tacitus *Annals* XIV. 29-30). This bead cache indicates that this type of blue and white bead had a value to their owners that has not hitherto been suspected.

### **Radiocarbon dates from the roundhouse settlement**

The choice of samples for radiocarbon dating from the roundhouse settlement was severely limited by a shortage of suitable material and secure contexts. Twenty-three samples were dated from the area of the settlement but four of these proved to be from later features and did not contribute to dating the settlement itself. There were no suitable samples at all from roundhouses A, B and D, and the dating of the other structures was not as extensive as desirable to determine the full range of use of the settlement. See appendix XVI, Fig. 23 for a graph of the results.

Five samples were submitted for dating from each of structures F and G. Those from F were all from postholes. The two samples dated from posthole 9121 were statistically consistent, but those from 9092 were not, however, when modelled the dates showed good agreement with the assumption that all the samples come from a single phase of activity, which started around 470-110 cal BC and ended about 10 cal BC-cal AD 380. The samples from structure G were from the central posthole, a central pit and a pit cutting the fill of the penannular ditch. The results of all of these were similarly consistent with a single phase of activity which started around 450-100 cal BC and ended about 10 cal BC-cal AD 310 (appendix XVI, Fig. 24). The close similarity of these date ranges suggests that structures F and G were in use together.

The five samples from roundhouse C were taken from the central complex of intercutting pits and deposits. Layer 3672 was later than both pit 3325 and deposit 3584, so it is not surprising that the five measurements are not statistically consistent, but they do agree with the stratigraphy. The dates indicate a period of use of the house from 280 cal BC-cal AD 210 to cal AD 130-540 (appendix XVI, Fig. 24). The very general nature of these estimates is due to the small number of dates available and the particularly early date of 390-170 cal BC (WK-20039) from pit 3325. This date could indicate activity in roundhouse C at roughly the same time as the earliest activity in structures F and G. However, it could be residual material. If another sample had been dated from this pit it might have been possible to clarify this problem. Only two suitable samples could be submitted from inside roundhouse H; these were from the fill of pit 9184 and they were not statistically consistent. Two samples were also submitted from the large pit 9277 to the south-west of the roundhouse and these produced two statistically consistent dates very similar to those from inside the roundhouse. These provide a very general indication of activity in the area between 150 cal BC-cal AD 210 and cal AD 130-450 (appendix XVI, Fig. 24).

The small number of suitable samples and the general lack of stratigraphy meant that the problems of the calibration curve for this period could not be overcome and the results are very generalised. Appendix XVI Fig. 25 shows that it is probable that structures F and G pre-date houses C and H, possibly by a fairly considerable period. The only evidence for an early element in roundhouses C and H is the earliest date from roundhouse C. Although this structure clearly has several phases, as the storm gully was repeatedly recut, there is much less evidence for rebuilding and the coherence of the overall plan suggests that it was not in use over hundreds of years. Without other supporting evidence the early date cannot be used to argue for pre-Roman activity in the northern part of the settlement, but this remains a possibility. While acknowledging the limitations of the dates they do suggest that the structures F and G in the central area represent the first activity in this area in the later Iron Age. The northern enclosure was probably not occupied until the first century AD, and both artefacts and radiocarbon dates are consistent with occupation continuing at least until the third century AD and possibly longer. The boundary ditch joining the two enclosures together implies that at least during part of their lives they were contemporary, so despite the absence of radiocarbon dates from roundhouse A

this might be assumed to be roughly the same date as the northern enclosure. The pottery supports this assumption. However, more dates would be necessary to be sure that all periods of use had been detected, so it cannot be proved that the settlement duration was restricted to the period indicated by the available dates and the pottery.

## **Discussion of the roundhouse settlement**

### ***Roundhouse size***

Table 7 lists published measurements for clay-walled roundhouses in Gwynedd with some stone-walled roundhouses where they superseded clay ones. The measurements should be considered to be very approximate as in most cases the limits of the houses were not entirely clear and the houses not completely circular. The measurements given for the Parc Bryn Cegin houses should be considered to be particularly approximate as a considerable variety of house diameter and wall thickness can be made to fit the available evidence. However these represent the best fits while attempting to maximise the wall thickness. With the exception of D all the Parc Bryn Cegin houses fit well within the range, although the wall thicknesses seem to be at the lower end of this range. The smallest, house H, was significantly larger than the Roman period stone-built houses, even though the finds suggest a similar date. Although this is a very small sample there is some hint of chronology in the wall widths. The widest walls come from the Bronze Age houses at Mellteyrn Uchaf, with the late Iron Age/Roman settlements having houses with thinner walls. Parc Bryn Cegin seems to fit in better with the later houses as the wall widths could not be increased to the Bronze Age widths however the reconstructions are devised.

Roundhouse D is difficult to fit into the comparison because it was not clear whether its drain was internal or external. If this confusion is due to this not actually being a roundhouse at all but an enclosed open area this should not be seen as a problem.

The Welsh Roundhouse Project (Ghey *et al* 2007) revealed that for all types of roundhouse the most common direction for the entrance to face was east or south-east, but some did face west and a very few north-west. In the selection of clay-walled roundhouses above the entrances seem to have been on the eastern or north-eastern sides. None of the houses at Parc Bryn Cegin have well defined entrance structures but those that are proposed tend to be on the west or north-west sides, with the possible exception of roundhouse H. This makes practical sense as it would place the entrances on the downslope side and reduce the risk of flooding in the houses, however, it would reduce light penetrating the house, and the entrance would face into the prevailing winds.

### ***Development and layout of the settlement***

The artefacts from the southern and northern enclosures suggest that they were in use at the same time for at least part of their history. The boundary ditch between the two enclosures is best explained as joining two contemporary ditched enclosures. The possible entrance through the southern end of the boundary is associated with a possible entrance into the southern enclosure, supporting the suggestion that they were contemporary. Without radiocarbon dates from the southern enclosure it is impossible to determine which was constructed first but it seems likely that at some point the two enclosures were in use together. The northern enclosure ditch seems to have more effectively enclosed its interior than the southern ditch. Both were probably principally for drainage but the northern enclosure could have been used to keep livestock in or to protect a garden area from livestock. The large area of the enclosure over which no features were identified would have provided sufficient area for either function.

The roundhouse settlement at Parc Bryn Cegin therefore seems to have begun small and unenclosed but developed into a larger aggregation of houses with two conjoined foci. The earliest activity seems to have been represented by a timber structure (F) built along side an area of possible industrial activity (G) in the Late Iron Age. This was probably superseded by a small enclosed, or semi-enclosed settlement of one or two clay-walled roundhouses (whether the north or south enclosure is unknown). As the occupying family needed to expand another enclosure was built nearby, joined to the original one by a ditch, possibly marking the arable land up the hill from the meadow land lower down. How roundhouse B fitted into this scheme is unclear, especially as it was not securely proved to be a roundhouse, but it might indicate small-scale activity beyond the main bounds of the settlement at any period. All the activity in this area was, of course, preceded by roundhouse E further up the hill.



## LATER PREHISTORIC AND ROMANO-BRITISH ROUNDHOUSE SETTLEMENTS

By George Smith

### Introduction

Understanding the roundhouse settlements at Parc Bryn Cegin involves considering the date of the settlements, their form, setting and evolution. This also needs to be compared to the general background of knowledge about settlement of the later prehistoric and Romano-British periods in north-west Wales. This is an area with an exceptionally well-preserved record of settlement of this period and almost a thousand examples are known. This is partly due to the amount of archaeological survey work that has taken place but mainly to the large areas of upland and marginal pasture where the lack of post-Medieval arable farming had allowed many early features to survive. The extent of survival and the accompanying good record of settlement sites provided by the work of the Royal Commission on Ancient and Historic Monuments in Caernarfon and Anglesey and of the work of Bowen and Gresham in Meirionnydd has provided the basis for interpretation and several schemes of classification of early settlement types have been proposed. The great variety of forms of enclosed and unenclosed settlement and the lack of precise dating evidence has made detailed classification of limited value.

The most recent overall survey has categorised settlement into four general types, with sub-divisions (Smith 1999b). These are first isolated huts, second, scattered unenclosed groups of huts, third, circular or concentric enclosed settlement and fourthly nucleated or enclosed settlement. The survey pointed out that within north-west Wales as a whole, the distribution of known examples of roundhouse settlement is uneven. The upland areas are typified by isolated or scattered unenclosed groups of huts. The circular or concentric enclosed settlements are rare but the known examples are widely distributed. The enclosed or nucleated settlement is concentrated around the fringes of the upland with relatively few examples known in the lowland of Llŷn and Anglesey. Anglesey has an average of 12.5 settlements per 10km square compared to 40-50 per square on the nearby mainland. This contrasts with the distribution of good quality agricultural land as represented by its present day use in that Anglesey has 16% arable land compared to an average of 6% in the Caernarfon/Bangor area and 12% on Llŷn. We should therefore expect early population, based predominantly on subsistence agriculture, to be higher in Anglesey than is represented by the archaeological record. This record is biased because of the poor survival of archaeological evidence in areas of intensive post-medieval agriculture. Antiquarian records describe the destruction of several groups of huts and recent archaeological work has provided evidence of the existence of settlements no longer visible as upstanding remains. Aerial photography of crop marks on the Llŷn peninsula, followed up by geophysical survey and excavation has identified examples of settlement of Middle Bronze Age and later prehistoric date (Ward and Smith 1999). Other aerial photographs have shown the presence of destroyed settlement on the coastal plain east of Bangor. Excavation in advance of construction of the new A55 road and of an industrial estate on Anglesey has identified several entirely new settlements and provided the most substantial corpus of modern excavation evidence about settlement of this period so far (Kenney and Davidson 2004; Davidson *et al* forthcoming). What these seem to show is that many of these lowland settlements were of the nucleated but unenclosed type, that is clusters of roundhouses in an open, farming landscape. The lack of enclosure banks may have contributed towards their failure to survive or be recognised since more enclosed than unenclosed settlements are known at present. The excavations at Parc Bryn Cegin like those along the A55 have identified another major prehistoric and Romano-British settlement in a lowland area of which there was no previous knowledge. This was the first such discovery in Arfon and confirms that these lowlands were much more fully settled than is apparent from the distribution of known settlements (Fig. 74).

### Settlement form

The late prehistoric settlement at Parc Bryn Cegin seems to have begun as a small, unenclosed outlier to the settlement focus in henge A. After moving down the hill to a more sheltered location a new settlement area was established, to start with still small and unenclosed but later developing into a larger aggregation of houses with two conjoined foci. The location of the settlements is interesting because they lay within relatively good quality agricultural land that has been used for arable farming since at least the 18<sup>th</sup> century and probably from the medieval period. Palaeo-environmental evidence from Llŷn Cororion (Watkins 1990), only 2km to the south-east, shows that the area was being cleared for agriculture by the later 2<sup>nd</sup> millennium BC and that evidence of cereal farming reached its peak between the 7<sup>th</sup>-10<sup>th</sup> centuries AD. However, the area as a whole lies quite close to the fringes of the upland and the amount of land suitable for post-medieval arable farming is quite limited. This lack of intensive modern agriculture in the fringes of the upland has allowed the good survival of a number of settlements that must have been contemporary with that at Parc Bryn Cegin and these show what it may

have looked like prior to the post-medieval ploughing that reduced it to a complex of ditches, pits and post-holes.

There are 58 known examples of roundhouse settlement within 5km of Parc Bryn Cegin. Most of these are concentrated in the upland or land marginal to the upland to the east and only 9 are within the lowland, below 100m OD (Fig. 75). Of the general types of roundhouse settlement described above Parc Bryn Cegin in its earliest phase (the various phases of roundhouse E) was a scattered unenclosed settlement. The later main settlement started nucleated but unenclosed (structures F and G), followed by two adjoining curvilinear enclosed settlements (the southern and northern enclosures). There are three other known curvilinear enclosed settlements in the immediate area in the land below 100m OD. These are Tanyrallt, east of Talybont (PRN 2318), known only from cropmarks on an aerial photograph, Cororion (PRN 27), 2km to the south-east and Fodol Ganol (PRN 4, Kelly 1975), 4km to the south-west. Both the latter are well preserved scheduled sites with visible houses but both settlements are rather different to Parc Bryn Cegin. Fodol Ganol has two houses, probably with clay walls and conjoined with the bank of a small sub-circular enclosure. Cororion has four houses probably with clay walls and free-standing, set fairly symmetrically in the middle of a sub-circular enclosure quite similar in plan to the northern enclosure at Parc Bryn Cegin. Fodol Ganol lies on a slight plateau within a network of small rectilinear fields that may have origins contemporary with the settlement. Cororion is set just above a wet marshy area of valley bottom but close to better land, where the fields are large and improved and used for arable in post-medieval and recent times. Its enclosure consists of a bank that is quite substantial although not defensive. It seems to have been surrounded by drainage ditches and there is a laid stone causeway across the marshy area at its entrance. One ditch seems to have deliberately brought water through the settlement enclosure. This probably explains why the settlement was constructed in such a potentially wet location.

Overall the nucleated/enclosed settlements in the nearby area to Parc Bryn Cegin consist of groups of only two or three roundhouses and these might be termed individual 'homesteads' as opposed to 'villages'. Only a few have more houses - three examples have four houses; one has five houses and one, exceptionally, with 12 at Parc Gelli, Tregarth (PRN 260, RCAHMW 1956, 108-9). The size of the latter is unusual but it is not enclosed and seems more like an aggregation of houses, with no sense that it was focus, for instance of more status or of industry. The whole picture, although dominated by small homesteads, is not actually one of isolated settlement since in areas where there is particularly good preservation several such sites are found quite close together, e.g. in Llanllechid (RCAHMW 1956, 140-1). In such places then we are seeing a quite fully settled and farmed landscape with a scatter of farms, interconnected by a network of roads and tracks, similar to that of the rural landscape that existed in the area prior to the industrialisation of the slate industry and resulting great population increase during the 19<sup>th</sup> century.

The two settlements with the largest numbers of houses in this area (Parc Gelli, Tregarth and Castell, Rhiwlas (PRN 9, RCAHMW 1960, 178) are notable for the considerable variation in size of huts, and this perhaps indicates that a greater variety of functions were being carried out. The numbers of actual dwellings may therefore be smaller than the number of 'houses' and this may be relevant to understanding Parc Bryn Cegin. Both the largest groups of huts are also aggregations and not defined as units by enclosures and both are set within quite well-populated landscapes and are not in particularly favourable agricultural areas. This supports the notion that they may have evolved as centres of craft specialisation rather than as larger groupings of farming households. To some extent, Parc Bryn Cegin was also an aggregation of houses but seems more like an extended homestead than a specialised settlement partly because the houses are all quite similar in size. However, in the phase represented by structures F and G, the interpretation suggests that structure F was probably a house but that structure G was a cooking or industrial area.

### **Social Setting**

The idea that settlement in this area was mainly agricultural and geographically determined is complicated by the fact that there was also some settlement within defended enclosures. Some smaller defended enclosures are still being discovered in the lowlands, where they have been destroyed by arable farming but probably all the major defended sites still survive and are known. This therefore allows some understanding of the pattern of local tribal structure prior to the Roman conquest, with the provision that we do not know if all were occupied at the same time. They vary quite markedly in size, structural type and in the number of houses enclosed. Most are quite well spaced but in a few places their proximity to each other might suggest that they were not occupied simultaneously. However, in the Clwyd Valley, Denbighshire several hillforts seem to have co-existed on adjoining hilltops along the east side of the valley (Brown 2004)). In the vicinity of Parc Bryn Cegin the defended enclosures are situated on hilltops on the north-west margin of the uplands and thus overlooking the lowland that

may have held their dependant population. On Anglesey, which is largely undulating lowland, the defended enclosures are more evenly distributed, which may indicate territories. It therefore demonstrates the geographical influence over the distribution of defended enclosures on the mainland, both defined geographical areas and perhaps areas of tribal allegiance or authority. The distribution of defended settlements in Caernarvonshire parallels the distribution of undefended settlements (Fig. 74) and most likely just reflects the availability of better quality land along the coastal belt. The distribution seems to be related to major valleys, which form the most obvious natural boundaries and suggests territories including areas of both better quality lowland and upland pasture.

The defended enclosure closest to Parc Bryn Cegin is that of Pendinas, Tregarth (PRN 223, RCAHMW 1956, 107), 2.5km to the south-east, and this is likely to have been the centre of authority in the immediate area. Its defences consisted of a single wall and it stands in a strong defensive position on a spur that commands the approaches to the Ogwen valley and the lowlands below it, including the area around Parc Bryn Cegin and the sheltered harbour of Aber Ogwen. Several houses in the interior were cleared for agriculture in the early 20<sup>th</sup> century. There is evidence of the improvement of the defences of several forts by the addition of large earthen ramparts and ditches. This may have been just an acquisition of new structural ideas emulating forts seen in the Welsh Borders and further east. Such banks and ditches were added, for instance, at Caer Lleion, Conwy (PRN 2816, RCAHMW 1956, 70-2), Garn Pentyrch, Llŷn peninsula (PRN 1303, RCAHMW 1960, 203-4). Closer to Parc Bryn Cegin, massive bivallate banks were added to the single-walled fort of Dinas Dinorwic, 6km to the south-west, which has a commanding position over a much larger area than Pendinas, including the whole of north-west Arfon. The implication is that Pendinas may have been supplanted at some stage as a focus of authority. Pendinas has had very limited excavation, but this showed that it had a massive stone-faced rampart and produced two saddle querns of Anglesey conglomerate and a stone rubber (White 1992). The rampart was shown to have been vitrified, presumed to be by burning of the timber superstructure. Charcoal from this event gave a calibrated radiocarbon date of 202 BC- 129 AD (HAR-1671). The date came from the rampart construction and may have been mature timber that was old when used for construction so the date of construction may be more recent than the radiocarbon date. However, the lack of Roman period finds from the site suggests that all the occupation preceded the conquest in AD 78. Its destruction could have happened during the Roman subjection of the area, or earlier during the period of hillfort improvement. These improved forts may represent changes in tribal authority with greater centralisation, as occurred in southern England or may have derived from the imminence of attack following the Roman campaign in north-east Wales in 48 AD or against Anglesey in 60AD.

It seems unlikely, although possible, that Pendinas was in existence at the time of the earliest roundhouse occupation at Parc Bryn Cegin in roundhouse E. Other early examples of defended enclosures may have existed, obscured by later defensive works and one possibility is at the fort of Dinas Dinorwic where there is an oral record of a find of a bronze spear-head (GAT HER).

The radiocarbon date from Pendinas is rare evidence from the first millennium BC in the north-west, just as it is for domestic settlement. On Anglesey an iron pin of Early Iron Age type was found at the large but lightly defended walled hillfort of Din Silwy, although this was a stray antiquarian find (PRN 2595, Lynch 1991, 262). The only extensive modern excavations of hillforts in the north-west have been those at Castell Odo, Llŷn, a bivallate earth-banked fort and at Bryn y Castell (Crew 1987), a small, walled hillfort on a prominent knoll overlooking the vale of Ffestiniog. Castell Odo provides the earliest known defended enclosure in the area. This began as an unenclosed hilltop settlement in the Late Bronze Age, c. 1000-700 BC, and was later protected successively by a palisade, then a single bank and then by bivallate ditches and banks. The latest phase of occupation or re-occupation was in the Roman period (Alcock 1960). Bryn y Castell was shown to have had two phases of use. The primary occupation, and presumably construction, comprised three stake walled roundhouses in the first century BC. The fort was then reoccupied in the second to third century AD and used for iron smelting on quite a large scale (Crew 1998).

The lack of dating evidence of the first millennium BC from defended settlements is made more evident by the contrast with the widespread presence of finds of the Roman period. However, this only mirrors a similar bias in the occurrence of datable artefacts in undefended settlements and just shows that the native settlements continued to be occupied. It is perhaps surprising to find evidence that many of the defended settlements also continued in occupation, apart from the notable exception of Caer Lleion, Conwy, although they may no longer been defended settlements as such. There is no firm evidence of Roman destruction of forts although the vitrification at Pendinas could be taken as such and it has been suggested that ramparts had tumbled in an unnatural way and had perhaps been deliberately dismantled at Caer y Twr, Holyhead (Lynch 1991, 266) and Caer Lleion (RCAHMW 1964, lxxix). While it appears that Caer Lleion was not occupied in the Roman period, Braich y Dinas (Penmaenmawr), in a similar very strong and prominent position, has produced numerous finds

belonging to the period from AD 100-400, including pottery and coins (PRN 712, RCAHMW 1956, 85-6). Dinas coastal promontory fort (Trearddur Bay, Anglesey) has produced late second to early third century AD pottery (PRN 807) and Dinas Dinlle (Llandwrog), pottery of second to fourth century AD (PRN 1570, RCAHMW 1960, 189-90). Lack of first century pottery except in the case of Castell Bryn Gwyn (Anglesey) (PRN 3140, Wainwright 1962) means that forts may have been re-occupied rather than continuously occupied and some of this re-occupation may have occurred only late in the Roman period. Apart from the finds mentioned above there is a mortarium of late third century type from Tywyn y Parc coastal promontory fort (Bodorgan, Anglesey) (PRN 3024, Lynch 1991, 268-70) pottery and coins of late third to early fourth century AD from Parciau (Llaneugrad, Anglesey) (PRN 2203, *ibid* 273-6), pottery and a coin hoard of third to fourth century AD from Din Silwy (Llanddona, Anglesey) (PRN 2595, *ibid* 258-62) and a gold coin of AD 306-40 from the uncertain site of Pier Camp (Bangor) (PRN 2299, RCAHMW 1960, 16). The last mentioned was of a type that did not circulate in Roman Britain and was probably lost by a collector (Lynch 1994, 9), so it should probably be disregarded.

Finds of Roman period pottery or coins also occur as chance or excavated finds at many undefended settlements although such finds from defended settlements are more numerous suggesting that they retained some greater status, even if their defences or defensive function were no longer in use. This is emphasised by the presence of prestige items such as an intaglio-set ring from Dinas Dinlle (PRN 1570, RCAHMW 1960, 189-90), ox head bronze bucket mounts from Dinas coastal promontory fort (Trearddur, Anglesey) (PRN 807), a bronze chariot fitting from Werthyr (Bryngwran, Anglesey) (PRN 3505, Livens 1965 and 1976) and glass beads and box tiles from Parciau (Llaneugrad, Anglesey) (PRN 2203, Lynch 1991, 273-6). Coin hoards may be particularly indicative of accumulations of wealth and possibly of periods of social upheaval and any finds of coins of more than an isolated specimen may have belonged to deliberately concealed caches. Apart from those mentioned above from Din Silwy and Braich y Dinas there is a group of coins of the late third to early fourth century from the Tywyn y Parc coastal promontory fort (Bodorgan, Anglesey) (PRN 3024, *ibid* 268-70). There is also a nineteenth century record of an undated hoard, now lost, from Dinas (Y Felinheli, Arfon) (PRN 3682, RCAHMW 1960, 201) and other lost and undated nineteenth century finds of coins from Dinas Dinoethwy (Llanwnda, Arfon) (PRN 5531) and Porthamel (Menai Bridge, Anglesey) (PRN 2168, Williams, 1867).

The main phase of occupation of the roundhouses at Parc Bryn Cegin was probably early in the Roman period and was in a landscape that was well settled and becoming quite prosperous, seemingly benefiting from the *pax Romana*, in which agriculture flourished, possibly entailing the introduction of new techniques, new crops and new breeds of stock and greater possibilities of trade, leading to the appropriation of coinage and of imported pottery. The development of the economy would have led to greater craft specialisation such as the exploitation of the Anglesey conglomerate for rotary querns, which must have been a specialist product (Hughes 1977, 47-8). Some existing settlements were modified by the addition of extra rooms, some rectangular, which suggest greater specialisation of functions for particular craft or agricultural uses. This might not always be obvious, as an existing house might be put into use as an 'outbuilding' while a new house for domestic use was built nearby. This may have been the case at Parc Bryn Cegin although difficult to prove from the excavated evidence. In most respects, although the settlement had a long period of occupation it remained much the same in style throughout, its layout evolving slowly with no evidence of abrupt changes in status or economy.

### **Agriculture**

The extent of post-medieval ploughing has reduced the survival of minor features belonging to the main Parc Bryn Cegin settlement. Although there are remains of enclosure and drainage ditches there seems to be no trace of any accompanying field system on the assumption that this was basically an agricultural settlement. The type of wider landscape that might be expected can be seen in three nearby areas to the south-east, where there is exceptionally good preservation and both settlements and their associated fields survive. However, two of these are in the upland over 350m OD at Moel Faban (PRN 287, RCAHMW 1956, 145-6) and Cwm Ffrydlas (PRN 284, RCAHMW 1956, 144-5) and consist of scattered huts amongst irregular curvilinear enclosures. These show no sign of lynchetting so may not have been arable fields and thus are not really comparable with Parc Bryn Cegin. The third, however, at Llanllechid 4km to the south-east (RCAHMW 1956, 140-1), lies between 220m to 300m OD and although higher than Parc Bryn Cegin contains remnants of a system of small sub-rectangular fields laid out generally to respect the contours and terraced, suggesting that they had been used for arable farming. This type of field system is that often called a 'Celtic' field system, found widely across Britain. Within the field system are remains of at least five settlements within curvilinear enclosures. This area then was not only well settled it was a mature farmed landscape. Fragments of similar fields



also occur at the Parc Gelli settlement, 2km to the south-east and considering that the land at Parc Bryn Cegin is of somewhat better quality than at Llanllechid a similar intensive land use would be expected. All phases of the settlement at Llandygai and at Parc Bryn Cegin have produced evidence of use of cereals.

The best quality land in this area in terms of modern agricultural potential is that on the low-lying coastal strip east of Llandygai and the slightly higher spur on either side of the Afon Ogwen including Talybont, Penrhyn Park and the areas of the Llandygai henges and Parc Bryn Cegin (MAFF 1984). Roundhouses E and B lie within this zone while the main roundhouse settlement lies just on its edge, the difference being that the former lie on the better drained hill and slopes while the latter lies on the edge of the poorly drained more level area at the foot of the slope. The main roundhouse settlement therefore lies in a marginal area and the difference is illustrated by the names of fields of an earlier field system recorded on an 18<sup>th</sup> century estate map (Fig. 83). The low-lying fields to the west of the settlement were called Cors y Rhos – Marsh of the Moor, and Cae Gwynion – Stitched Field (probably meaning drained field). These are large fields of irregular outline and were probably just pasture. The fields on the hill however, were smaller, oriented along the contours and were clearly arable fields.

These fields were obliterated by changes in the nineteenth century and were known only from the early estate map. However, during the present excavations some of the boundary ditches of these eighteenth century fields were identified but there was little evidence of any even earlier field system (see discussion below). The east side of the northern settlement enclosure coincided with one of the ditches of the eighteenth century fields and the junction of four of the fields coincided with the position of roundhouse H (Fig. 83). This almost certainly means that the northern enclosure was an upstanding earthwork that formed a physical feature when these fields were established. There is also a post-medieval ditch that enclosed or cut off the corner of the field to north, perhaps forming a fold, containing the remains of roundhouse H, probably located here because it was an uneven piece of marginal land. The ditch joining the north and south enclosures of the settlement may in fact have been part of an earthwork marking the edge of a field contemporary with the settlement as its value as just a drain is questionable. The ditch at the east side of the northern enclosure also continues to the north beyond the excavated area and together with the ditches of the southern enclosure and that joining the two enclosure forms part of an extensive boundary that defines the extent of all the settlement activity. Although it cannot be proved that the area to the east was purely agricultural it is a reasonable conclusion. A long band of stones (3025) running along the contours of hill to the east of the settlement may support this conclusion. These stones probably represented the remains of a positive lynchet collected at the lower edge of a field. Although the date of this field is unknown the stone spread does indicate that the site of the settlement was at the western limit of the ploughed land, probably over a long period of time.

It is difficult to ascertain when the field system shown on the eighteenth century map originated. Fields shown on the map to the south-west of Parc Bryn Cegin are considerably smaller and more irregular than the Parc Bryn Cegin fields, including a mix of fields of sub-rectangular and curvilinear outline. These are quite similar to the 'Celtic' fields at Llanllechid and could represent a much earlier survival than the larger Parc Bryn Cegin fields. It is possible that the latter may be a re-organisation of a field system contemporary with the Parc Bryn Cegin settlement. The later field system seemed to respected the settlement on its east side, perhaps because the settlement still survived as upstanding earthworks.

It has been suggested that there was a period of climatic amelioration during the Romano-British period, which allowed extension of settlement and farming into the upland margins (Burgess 1985). This could account both for the extensive settlement around Llanllechid, an area now very marginal for agriculture, and for the sheer density of settlement of that period in the whole of this part of Arfon. In contrast, the end of the Romano-British period saw a serious decline in climate, and this could equate with the apparent end of use of most of these settlements. However, evidence from the pollen core at Llyn Cororion (Watkins 1990) shows that there was no regeneration of the forest locally and clearance continued to expand, with clearings becoming permanent by the early medieval period. The only activity identified in the immediately succeeding period is the use of the site of roundhouse E for small-scale iron smithing in the period between the fifth to seventh centuries AD. This lay on the uphill side of one of the presumed medieval contour boundaries where positive soil accumulation may have aided its survival (Fig. 83). On the other hand it could mean that the boundary was already in existence by the time that the metal-working took place.

Direct evidence for arable agriculture came from the charred plant remains recovered from the Parc Bryn Cegin roundhouses. Most features contained only a low level of cereal remains, although barley, emmer wheat, spelt wheat, naked wheat and oats were all indicated. Small numbers of charred hazelnut shells may indicate that these were still being collected for food. The central feature (3518) in

roundhouse A, which was probably the disturbed remains of a hearth, produced a significant assemblage of cereal grains. To this can be added the assemblage from the fill of the gully (3570) running downhill from the hearth. Although the function of the gully is not clear all the charred remains were probably from the same source. In this assemblage spelt wheat was the most abundant crop plant, with other cereals such as emmer wheat, naked wheat and rye present in small numbers. This is consistent with other evidence from around the country that spelt wheat was the main cereal crop of the British Isles at this time (Greig 1991, Van der Veen and O'Connor 1998). The material was charred in high temperatures under oxygen rich conditions indicating the disposal of waste in a fire rather than an origin in a store of grain. The relatively high proportion of chaff in the assemblage from the gully fill appeared to be the by-product from a late stage of crop-processing (Schmidl, Carrott and Jaques, this report appendix XIV).

### **Evolution**

The settlement in its earliest phase, represented by possibly two phases of roundhouse E, around the middle of the first millennium BC, was probably subordinate to a major focus nearby that was situated within the bank of henge A at Llandygai (Lynch and Musson 2001). The henge enclosure had been re-used for the settlement although there was no evidence that the ditch had been re-cut and any evidence of a palisade on the bank would have been removed by ploughing. There was unfortunately a lack of dating evidence, except that the absence of associated Romano-British material indicates that it was pre-Roman. This must have been a fairly long-lived settlement because there are traces of several phases of re-building of which the most notable was an exceptionally large roundhouse, which occupied the centre of the henge enclosure. In this it bears a close resemblance to a small group of concentric circular enclosures, exemplified by the settlements of Moel y Gerddi and Erw Wen, both near Harlech, Meirionnydd, where excavation showed origins around the middle of the first millennium BC (Kelly 1988). The correlation between these settlements, Llandygai and Parc Bryn Cegin house E is supported by the similarity of construction of all the houses using ring-groove walls. Moel y Gerddi and Erw Wen were both situated in upland with no indication of cultivation and were interpreted as dependent on a pastoral economy although wheat and barley grains were found at both, as well as oats at Erw Wen. In the lowland setting of Llandygai and Parc Bryn Cegin a mixed farming base is more obviously likely and barley grains were found in roundhouse E.

Other scattered and isolated houses like roundhouse E will only be discovered by chance but Richard Kelly has shown that such houses might also be found as earlier phases of stone-walled houses, as was the case at Erw Wen and at other settlements, such as Crawcwellt (Crew 1998). Only total excavation at these sites revealed underlying timber phases, showing that earlier excavations at other roundhouse settlements, where walls were left *in situ* may have failed to identify earlier timber phases. The concentric enclosed settlements like Moel y Gerddi and Erw Wen form the classic examples of settlement of this period, which type, with its concentric enclosure banks is a distinct and recognisable form of which only 37 examples are known in north-west Wales (Smith 1999c). However, there are hints that others may have been subsumed and modified to form the basis of later settlements. At Ffridd Ddu, Trawsfynydd a large central roundhouse was situated centrally within a concentric enclosure but this was later enlarged and modified with the addition of a group of smaller ancillary huts, and the enclosure extended to a rectilinear shape (Smith 1999a). Other similar sites probably existed in lowland areas where they have been obscured by post-medieval ploughing and eleven similar sub-circular enclosures have been identified as crop marks on aerial photographs in the Llŷn peninsula (Ward and Smith 2001, and Driver 2006). The concentric enclosures are basically single houses inside a larger enclosure but excavations at Castell Odo show that larger defended settlements of the same period existed with several houses inside a single or multiple ramparted curvilinear enclosure (Alcock 1960). The settlement in Llandygai Henge A was one of these and another may have been that which re-used the probable henge at Castell Bryn Gwyn, Brynsiencyn, Anglesey (Wainwright, 1962). Four other sites of similar type to Castell Odo have also recently been identified from geophysical survey, three on the Llŷn peninsula and one on Anglesey, although the period to which these belong cannot be confirmed without excavation (Smith and Hopewell forthcoming). The recent extensive excavations along the line of the new A55 road on Anglesey have uncovered four new areas of settlement but there was no evidence that these began much before the end of the first millennium BC (Davidson *et al* forthcoming). So far then it is only the excavations at Llandygai and Parc Bryn Cegin that provide some genuine evidence for this area and the first of unenclosed settlement of that period. If many of the houses of this earlier period were of timber then even where not obscured by later agriculture they would only survive as platforms. In fact of the 1725 recorded examples of roundhouses recorded in north-west Wales (excluding those within defended enclosures or hillforts) there are 203 surviving only as platforms but none of these have yet been investigated by excavation (Smith 1999c).

Altogether, the evidence from Llandygai and Parc Bryn Cegin, together with recent crop mark and geophysical surveys, indicate that lowland north-west Wales was more extensively settled in the later first millennium BC than at first seems the case. There is also a strong suggestion that there was continuity of settlement at Parc Bryn Cegin over a very long timespan, since the radiocarbon dates combined with the pottery evidence show the presence of settlement from the middle of the first millennium BC through to at least the early third century AD. The dates from roundhouses C and H suggest a start date close to the advent of Roman control in 78AD and the pottery evidence shows that all four houses were then occupied during the subsequent fifty years and this seems to be the high point of the settlement. The evidence is not conclusive but the common assumption that roundhouses with Roman material actually had earlier origins is not true in this case although the settlement itself had earlier origins. The settlement was occupied throughout the second century AD and the types of pottery being acquired during this period show relatively high status for a rural settlement. Only one house, H produced pottery of probable third or fourth century date so may have been the sole remaining houses by this time although house A had some that could be of the third century (Evans appendix IV).

The types of clay-walled houses here are regularly paralleled at several other settlements in the area occupied during the Roman period, including Bush Farm, Caernarfon (PRN 3463, Longley *et al* 1998) and Bryn Eryr (PRN 401, Longley *et al* 1998), Cefn Cwmwd, Cefn Du and Melin y Plas, all on Anglesey (Davidson, Hughes and Cuttler forthcoming), although the overall forms of the settlements all differed. Bush Farm was a single, apparently isolated clay-walled house of an uncertain occupation period that was replaced or at least superseded by a somewhat smaller stone-walled house during the Roman period. Bryn Eryr started as a curvilinear palisaded enclosure in the middle of the first millennium BC, was later enhanced to form a substantially ditched and banked rectangular enclosure, which was then allowed to fall into disuse during the Roman period. Cefn Du was an unenclosed settlement of which only part, with a single house was excavated, although this has several ancillary structures. Cefn Cwmwd was also unenclosed and had a linear lay-out with several houses lying alongside a gravelled road.

All of these settlements had quite substantial amounts of Roman pottery indicating comparative affluence and participation in a market economy with pottery use peaking in the second century. Parc Bryn Cegin is slightly different from these in that its peak of Roman pottery use was in the Flavian-Trajanic period, before AD 120 and this early peak was interpreted as indicating close contact with the military or with a military *vicus* in this period (Evans appendix IV). The fort of Segontium at Caernarfon, the largest Flavian fort in North Wales, was established between AD 78-84 (Casey and Davies 1993, 10) and the area was clearly then under the close control of a strong military force. Despite the disruption that might be expected, Roman products, particularly pottery, were being widely acquired by rural settlements on both Anglesey and the nearby mainland, as at Parc Bryn Cegin, soon after the invasion (Evans appendix IV). In addition, surprisingly, finds from one hillfort, the largest in the area, at Braich y Dinas, Penmaenmawr, indicate that it was still occupied during the first century AD (PRN 712; RCAHMW 1956, 85-6; Davies 2000, 88), indicating that it may have had some privileged status. This contrasts with the next closest fort of Caer Lleion, Conwy, 6km to the east, the defences of which had been improved, but where excavations showed no evidence of occupation during the Roman period and where it was suggested that the defences may have been deliberately demolished (Griffiths and Hogg 1956). Parc Bryn Cegin evidently survived successfully under this regime and may have been influenced by its proximity to the Roman road between Canovium (Caerhun) and Segontium, which crossed the River Ogwen only about 500m to the south. The find of a Roman seal-box, from the mail of a significant person, may prove some association with this road, as it clearly had no normal connection with a native settlement.

There was evidence of other settlement close to Parc Bryn Cegin during this period. This was found in the upper part of the fill of the ditch of Henge A at Llandygai, where traces of a timber structure were found. This was associated with pottery of late first to early second century AD date, spindlewhorls, whetstones, a coin, a bronze brooch and a glass bead. It was suggested that the types of pottery indicated a military connection (Davies and Lynch 2000, 105) but this was a domestic assemblage so does not have a direct military association, such as might derive from the presence of a watchtower close by. There were hints of an insubstantial rectangular enclosure or yard at Llandygai, which if so represents a very different style of layout to that at Parc Bryn Cegin. In fact the Roman period is notable for the variety of settlement forms. There are open, unenclosed settlements, compact groups of unenclosed houses, often set within a series of yards or paddocks, settlements within curvilinear or rectilinear enclosures and courtyard type settlements where the houses are not set centrally within the enclosure but peripheral to it and partly coeval with its bank or wall. The latter include small compact settlements, very similar to the courtyard houses of Cornwall and larger banked or walled settlements, like the well-known Din Lligwy, Anglesey (PRN 2132, RCAHMW 1937 133-5).

Both these courtyard types often include ancillary huts or rooms, sometimes rectangular. Whether these new types of settlement were the result of new ideas or new settlers is unknown but they were very different to the styles of settlement that began to appear in the lowland zone of Southern Britain and so did not represent Romanisation as such.

The garrison at Segontium was drastically reduced about AD 120, along with other forts in Wales (Casey and Davies 1993, 12), which may have issued in a new political situation and changes in the economy. Many hillforts have evidence of occupation during the second and third centuries with pottery and coins showing continuing connection with the wider economy. There is no obvious, widespread evidence that the hillfort defences themselves were rebuilt or refurbished at this time although excavations at one fort, that of Tre'r Ceiri, Llŷn, have shown that the entrance was remodelled in the second century (Hopewell 1997).

The settlements at Cefn Cwmwd and Cefn Du, Anglesey, were flourishing during the second century AD and seem to have been prosperous farms, probably somewhat more so than Parc Bryn Cegin. At Cefn Du there were settings of posts interpreted as granaries and there were other ancillary buildings, neither of which features were identified at Parc Bryn Cegin. Cefn Cwmwd was notable for the number of mortaria amongst its pottery and for the number of stone mortaria and this was suggested to be because of the adoption of new Romanised styles of diet (Smith forthcoming).

Whatever the political situation was after the reduction of the garrison at Segontium *c.* 120 AD it was evidently stable enough for rural settlements to develop and to acquire exotic goods. The pottery assemblages prior to this date at Cefn Cwmwd and Cefn Du on Anglesey and at Graeanog and Parc Bryn Cegin on the mainland were notable for their high proportion of fine tablewares, but in the second century the pottery there and at Bush Farm, near to Segontium became more utilitarian, for example with an increased number of cooking pots. The exception was Bryn Eryr, which received high status pottery throughout the first, second and third centuries (Evans 1998, 216-7). The pottery assemblage of the earlier period at Parc Bryn Cegin was grouped with Bryn Eryr and Cefn Cwmwd for the presence of high status items. However, this does not infer that their inhabitants were particularly wealthy or of high status. The amounts of pottery were actually quite low compared to rural settlements in the lowland zone of Southern Britain. At Bryn Eryr the estimated number of vessels indicated acquisition of only 'a dozen or so new vessels per generation' (Longley *et al* 1998, 244). The emphasis was on acquisition of a few special vessels for display and the favourite Central Gaulish Samian item was form 37, a bowl, probably used for communal drinking (King 1998, 212-3).

Bryn Eryr, Cefn Cwmwd and Parc Bryn Cegin were simple farming settlements in terms of their layout and type and size of houses so their access to imported goods must have derived from their ability to produce a surplus that could be traded probably via the *vicus* at Segontium. Their pottery assemblages show similar sources of supply to that at Segontium (Evans 1998, 210), the entry point for trading vessels and probably the only militarily secure anchorage. The access to imported pottery must have been accompanied by other goods. For instance a few pieces of oil amphora occur at both Parc Bryn Cegin and Bryn Eryr, wine amphora at Bush Farm and a shale armlet at Cefn Du. There was also access to specialist products made more locally, in the form of querns quarried and probably manufactured at Tynyngogl, Anglesey where the orthoquartzite was especially suitable (Hughes 1977), as used for the quern fragments at Parc Bryn Cegin. However, in most respects these settlements continued to be self-subsistent. Spindle whorls are ubiquitous finds, showing production of woollen fabrics. At Melin y Plas there was a miniature whetstone designed to be hung as a pendant and with wear-marks suggesting it was a needle hone (Smith forthcoming). Evidence of looms, in the form of post-hole settings, have not been identified but at Graeanog a number of perforated slates may have been loomweights (Kelly 1998). At Parc Bryn Cegin and at Pant, Llŷn (Ward and Smith 2001, 68), burnishing stones suggest leather working. At Pant, Cefn Cwmwd and Cefn Du there was evidence of iron smithing, probably an everyday necessity for a farm. The iron itself, however, was produced elsewhere, such as at Crawcwellt (Crew 1998), and had to be obtained by trade and at Pant a possible piece of iron currency bar was found (Ward and Smith 2001, 66-7). However, at some sites there was also evidence of small scale, non-subsistence craft activity, possibly for trade. At Cefn Du there was some pure copper, either for working on site or perhaps showing participation in mining. At Parc Bryn Cegin and at Cefn Cwmwd there had been small-scale glass bead manufacture.

The overall interpretation of the everyday life and economy of the Parc Bryn Cegin settlement is obscured by the rather small artefactual assemblage compared to some of the other excavated sites although, as at Melin y Plas, this is more an effect of poor survival, because of erosion by long term ploughing, than a genuine indication of the settlement's status. The great value of the work at Parc Bryn Cegin lies in the extensive area excavated and the careful sampling and radiocarbon dating that provide an exceptional picture of the gradual development of a settlement over several centuries. There was settlement here from about the middle of the first millennium BC. Pottery evidence indicates that it



came to an end in the early third century AD as was the case also at Melin y Plas, Cefn Du and Bryn Eryr and this is supported by the radiocarbon evidence from house H at Parc Bryn Cegin. The settlement throughout its life maintained a native Late Iron Age style with no appearance of new types of building such as the courtyard layout or rectangular buildings seen at Cefn Graeanog II (Kelly 1998), Graeanog (*ibid*) and Din Lligwy (PRN 2132, RCAHMW 1937, 133-5) where occupation continued through the fourth century. There is also now evidence from both artefacts and radiocarbon dates that some roundhouse settlements continued beyond the Roman withdrawal from Segontium about AD 393, for instance at Cefn Cwmwd and Cefn Graeanog II and possibly also at Bush Farm and Pant y Saer (PRN 60, Lynch 1991, 376). Parc Bryn Cegin however seems certain to have been abandoned by this date. Clay-walled roundhouses would not have had a very long life, possibly no more than 150 years, so long term continuation of a settlement meant repeated re-building, changing layout and even, at times, location. Environmental study shows that climate deteriorated significantly during the fifth century AD, peat developed and heathland and woodland expanded (Caseldine 1990). At Parc Bryn Cegin this probably led to the abandonment of the poorly drained location and a move to a new settlement focus, which developed on the ridge close to Llandygai where a cemetery of the early medieval period was found during the 1967-8 excavations.

## MEDIEVAL CORN DRYING KILNS

### Description

(Fig. 65, plates 20 and 21)

To the north of roundhouse A one of the ditches (3506) defining the enclosure was cut by a linear feature (3671) with a bulbous southern end and a narrow tail running north. This feature measured 5.4m in length overall and the narrow part was 0.34m wide and less than 0.1m deep. The bulbous end was 0.85m long, 0.48m wide and up to 0.5m deep, with steep sides and a generally flat base with a hollow in the middle. The fills contained frequent charcoal, lumps of burnt clay and occasional large stones. There was no differentiation between the fills of the bulbous end and the narrow tail, but the upper sides of the bulbous end were extensively burnt. Just west of ditch 3504 were other features, which seemed to be related to 3671 because they also contained evidence of burning. A linear deposit 0.12m thick consisting of burnt clay and charcoal (3540) sealed two postholes, the largest of which (3717) was 0.66m in diameter and 0.38m deep, with post packing stones, the other posthole (3715) was shallower at 0.14m in depth with no packing stones.

The fills of feature 3671 contained considerable quantities of charred grain, predominantly oats, as well as a little chaff and numerous weed seeds, particularly corn marigold. The charcoal spread 3540 was even richer in charred oat grains and corn marigold seeds but also had a few charred hazelnut shells. The fill of posthole 3717 had oat grains, though fewer in number and also corn marigold seeds.

Another isolated feature found further up the hill (feature 1850) is also considered here because of some similarities to feature 3671 (Fig. 5). This was also subjected to *in situ* heating but the fill lacked burnt stones, making it unlikely to be related to the burnt mounds or the earth ovens. It was found on the fairly gradual slope just inside the northern corner of trench 4 (although it was given a trench 1 number) (NGR SH 59308 70480, 53.5m OD, Fig. 4). Feature 1850 had an oval cut with a shallow extension to the north and measured 1.6m in total length and 0.8m wide and 0.16m deep (Fig. 77). The sides were steep around the main bowl of the feature leading to a fairly flat base, with shallower sides along the extension. Much of the base and sides of the cut were reddened by *in situ* burning. The fill was a brown silty loam with occasional small rounded stones and very occasional flecks of charcoal. There were also thin lenses of charcoal in the base of the cut. The shallow extension may have acted as a short flue and it could have functioned as a small pit corn drier.

Feature 1850 produced no finds or datable charred remains but two charred oat grains from the fill of feature 3671 were submitted for dating and these produced statistically consistent dates (appendix XVI). Another charred oat grain and a hazelnut shell were dated from nearby posthole 3717 and these two dates were statistically consistent with those from 3671. When modelled these dates suggest activity starting cal AD 880-1160 and ending cal AD 1040-1350, the duration of the activity being estimated at 0-160 years (95% probability) (appendix XVI, Fig. 26), however, the small number of dates available means that the estimate may be much too long. These dates are of considerable importance as they represent the only full medieval activity on the site.

### Discussion

Feature 3671 initially resembled a short section of ditch, but the evidence of *in situ* burning in its end suggested another function. It is possible that this feature was a corn drier with a particularly long flue. One with a similarly long flue was found at Graeanog, Clynnog (Fasham *et al* 1998, 132), although this was stone-lined. O'Sullivan and Downey (2005, 33) describing Irish corn driers state that even the longest flues were rarely more than 2.5 times the length of the bowl. However, they also say that the flue often runs up hill and is aligned to catch the prevailing wind, both of which applies to the present example. Scott (1951, 203) records open pit corn driers being used in Wales, which had very long flues. This was due to the fuel used being straw or gorse, which produced sparks that would have set fire to the grain if the flue had been shorter. It seems that the present feature is an early example of one of these simple corn driers.

The quantity of charred grain from feature 3671 strongly supports its interpretation as a corn drier. Although there was some barley, naked wheat and rye present most of the charred cereal assemblage from feature 3671 was dominated by oats. Evidence from elsewhere in Wales suggests that oats were the main cereal of the medieval period, and remains of this crop has been found in other medieval corn driers e.g. at Collfryn, Llansantffraid Deuddr, Powys (Jones and Milles 1984). There were also quantities of seeds from common weeds of cereal fields, which must have been harvested together with the crop. The most numerous were of corn marigold (*Chrysanthemum segetum* L.) and brome (*Bromus*), amongst other species apparently indicating fields on acid and sandy soils. While the soil

was likely to be quite acid it could never have been sandy. However the weeds may indicate that the crops were grown on the higher, better drained areas, as is supported by the map evidence.

The corn drier at Graeanog, Clynnog provides a particularly good comparison as the dates are very similar to those from 3671. One of the four dates (CAR-1156, 210-550 cal AD) was much earlier than the other three and was presumably on residual material. The other dates range from 880-1160 cal AD (CAR-934) to 1040-1280 cal AD (CAR-932) (Kelly 1998, 132), remarkably similar to the dates from 3671. The Graeanog example was stone-lined, but if the stones were removed it would quite closely resemble 3671. There were occasional sub-rounded stones in the fill of 3671 and it is possible that this was also originally lined but that the lining had been removed or severely disturbed.

The Graeanog drier was closely associated with the re-use of an Iron Age/Romano-British roundhouse settlement, the drier being located immediately outside the enclosure wall. This raises the possibility that feature 3671 might indicate a later re-use of the southern enclosure. At Graeanog the houses were built of stone with substantial walls that were worth rebuilding after a considerable period of abandonment. Roundhouse A would quickly have been reduced to a circular mound of clay, useful perhaps for temporary shelter but little more. No other medieval evidence was found in this area, or elsewhere on the rest of the site, with the exception of the early medieval smithing on the site of roundhouse E. The trench dug to evaluate the area west of trench 3 revealed features consistent with an extension of the roundhouse settlement but nothing explicitly medieval. Feature 3671 was close to an important boundary used in both the eighteenth and nineteenth centuries and possibly marking the western limit of the arable land when the roundhouse settlement was in use (see below and Fig. 83). Despite the lack of other evidence it is possible that more medieval activity might be found under the baulk to the west of trench 3, raising the archaeological potential of this area even further.

Feature 1850 lacked the charred remains of 3671 and did not have a long flue but its interpretation as a small, pit corn drier is a strong possibility. It is impossible to know whether feature 1850 was of the same date as 3671, but it seems probable. This feature seems to have been completely isolated, with no other features of any sort near by. Although not far from a nineteenth century field boundary it was within the middle of the eighteenth century field called 'Cae'r Drws' (Penrhyn Estate map MS2205, 1768, Figs 79 and 83). Ethnographic parallels were usually enclosed but there are descriptions of unenclosed driers from Wales. The grain was laid on a floor over a pit dug into a bank or hillock (Scott 1951, 203-204).

No other mid or later medieval evidence was found on the site. The majority of the field boundary ditches found could be identified with those on either the eighteenth or nineteenth century maps, but a small number of ditches in trench 1 could not be so identified (see below). These may have been the remains of pre-eighteenth century fields. However, it is probable that the eighteenth century field system preserved traces of the earlier layout. As discussed above in relation to the roundhouse settlement the corn drier 3671 probably lay on the boundary between the arable and pastureland. The fields to the east consisted of what is likely to have been originally two long broad parallel-sided fields curving around the contour and it can be seen that these long fields were later subdivided by boundaries oriented up and down the slope (Fig. 83). Such long curving fields are typical of medieval agriculture where the use of ox-teams made long fields most efficient. Such fields were usually divided into strips but there is no evidence of that here, either on the ground or in the 18<sup>th</sup> century field names. However, two of the fields had names that showed they provided part of the upkeep of the priest and this beneficial arrangement is likely to have medieval origins.

The radiocarbon dates from corn drier 3671 place it within the early 11<sup>th</sup> to early 13<sup>th</sup> century AD. This puts it within the period of the Welsh Princes, a period of relative peace and prosperity, when the economy and agriculture flourished. In fact it has been shown that this coincided with a period of climatic amelioration between about AD 1100-1300 when the upland limit for oat cultivation in the Lammermuir Hills of south-east Scotland was been identified as about 450m OD whereas by AD 1500 it had fallen to about 300m OD (Parry 1985).

## POST-MEDIEVAL FEATURES

### Introduction

Running across the whole site were traces of different phases of post-medieval field systems. These were mostly visible as boundary ditches but there were additional drainage features within the fields. Survival of the features was variable. Many of those towards the top of the ridge were very shallow and seemed to have suffered particularly from truncation. They were often discontinuous, where in places they had been entirely truncated away. The availability of estate maps of the Penrhyn Estate enabled the different phases to be identified and dated.

### Description

(Fig. 78)

At the very eastern end of trench 1 were road remains preceding the present road. The earliest phase was marked by a line of slate slabs (1535) forming a kerb or foundation layer. Over (1535) was a tarmac road (1038) with concrete kerb and white line still down the middle, which was aligned at a slightly different angle to the earlier road. Over this was a 1m thick layer of road stone with two thin layers of tarmac on top (1037), which may have been a temporary road created to divert traffic when the gas main was laid (Pavel Laszek, Transco, pers. com.).

Running north-east to south-west was a ditch (1023). This was roughly parallel to the former roads, except at the north-eastern end where it curved east and was cut by the shallow foundation cut (1588) for the earliest road. Ditch 1023 measured 1.1m wide and 0.25m deep, and was filled with brown silt. The continuation of its line could be seen in the location of trees further south-west. Running nearly north-south from near the north-eastern end of 1023 was a much slighter ditch 1034. This was about 16.5m long, 0.72m wide and 0.1m deep, and was filled by a dark grey-brown silt. About 28m to the west but almost exactly parallel ran another small ditch 1025. This was 0.8m wide and up to 0.2m deep and a length of 7.2m was exposed in the excavation.

From the eastern end of the trench a feature composed of two parallel ditches ran for 160m north-west down the hill slope. These ditches 1014 and 1016 were up to 0.86m wide and 0.18m deep but were discontinuous due to truncation. They were about 1.9m apart and were straight and parallel for all their length. The line of ditch 1014 seemed to be continued for a further 95m almost to the western end of trench 1 by ditch 1438. At its south-eastern end 1438, here recorded as 1282, curved a little to the north of the line of 1014. Although this feature was not extensively investigated it appeared that 1438 contained a recut and that 1014 may have continued along the line of an earlier ditch. A short section of ditch 1436 ran off from 1438 at right angles. It was only 14m long before being truncated but where best preserved was 1.32m wide and 0.17m deep.

These ditches were apparently cut across by an east-west orientated ditch (1040). This ran for 97m, although it was not visible for a section in the middle. It was up to 1.3m wide and 0.3m deep, and filled by brown loam. A 4m long line of stones (1117) on its southern side suggested there had been a bank with a stone revetment on this side. At its western end there were traces of a parallel ditch on its northern side, but this could not be followed for more than 11m. The alignment of ditch 1040 was continued further west but offset about 8m to the north, perhaps indicating an entrance at this point. This continuation ditch 1144 was 46m long, up to 3.6m wide and 0.22m deep. It was filled by brown silty clay, which was cut by a stone-filled French drain (1148) that ran along the same line.

At the western end of ditch 1144 was a junction of ditches from which two more ditches radiated out. These other ditches (1250 and 1301) could not be followed for more than 18m before they were truncated away. But 1250, if its line was somewhat wandering, might have continued as ditch 1500. This was up to 0.8m wide and 0.12m deep and ran for about 44m perpendicular to the double ditch feature 1014/1016.

Other ditches ran into the junction at the western end of 1144. Ditch 1139 ran south into trench 4 for 69m with a break in the middle, where it was truncated. This ditch was 0.4m wide and up to 0.3m deep and its northern end was cut by ditch 1144. It in turn cut a stone-filled drain 1143 and a parallel ditch 1141. In trench 4 ditch 1139 was recorded as 4138 and 4408. Its relationship to another north-east to south-west aligned ditch 4406 could not be established, but near its southern end 1139 seems to have acquired a short parallel ditch (4410).

An oval pit (1365) was located near the boundary junction. It measured 4m by 1.5m and was 0.4m deep with near vertical sides. The fill was a soft brown loam. A ditch 1212 apparently cutting 1144 ran towards the north-west where it seemed to continue after a gap as 1201 and to run for 68m straight down the hill slope. At its widest this ditch was 0.7m wide and 0.25m deep but it was heavily truncated for most of its length. It was apparently cut by ditch 1250 but this relationship was not investigated in detail and may not be secure.



Also in this area was a short section of a fairly broad ditch (1407), 1.3m wide and 0.3m deep, and a narrower ditch or drain (1439), 0.45m wide and 0.12m deep.

At the western end of trench 1 was a narrow very straight ditch 1839, which ran north-east to south-west for about 136m. It was 0.7m wide but only 0.15m deep.

Running south-west from the oak tree in trench 1 were a very rough line of small sub-circular features (1295, 1297, 1356, 1360, 1362, 1364, 1455 and 1457). These measured up to about 1m in diameter and 0.2m deep and were mostly filled by dark grey silt. Their irregular edges and bases suggested that they were hollows formed by trees or shrubs. In the same area was a neat circular pit (1367), 1.1m in diameter and 0.3m deep. This was disturbed on the southern side by another tree hollow (1353/1372) and its fill contained two roof slates.

Also around the oak tree were several drainage features. This area was a local linear hollow with a deposit of grey silt (1113) in its lowest points. This hollow ran south-west to north-east for about 145m, the silt being recorded in trench 2 as (2172). Towards its southern end it was cut by an irregular channel (1134) with large boulders and nineteenth-century pottery in its fill. Also cutting through the silt were two stone filled elongated features (1089 and 1186) that were assumed to be some type of drainage feature. Nearby was a brick-lined soakaway (1123), entirely filled with stones and capped by large slate slabs. This fed into a drain 1128 leading to the north-east. This drain probably fed into a pair of parallel drains (2006 and 2100), one of which (2006) was investigated and proved to be a well-built culvert lined and capped with slate slabs. It was still running when excavated. Both drains ran from south-west to north-east for at least 108m, and cut a stone-filled French drain 2102 and another associated land drain 2165.

There were many ditches and drains cutting through the area of grey silt (2172) in trench 2. These were not extensively investigated but some possibly joined in to the stone-filled French drain 1190 that ran through the same silt deposit in trench 1.

A ditch 2188, 1.15m wide and over 0.38m deep, ran south-east to north-west down the eastern side of trench 2. Its width suggests it was originally a boundary ditch but it had a ceramic land drain in its base and all the drains in the area drained into it.

The most prominent post-medieval features in trench 4 were two parallel ditches opening at their south-eastern end into a funnel shape. The parallel ditches (4089 and 4091) were up to 1.2m wide and 0.2m deep, but were entirely truncated away in places. They were about 5.6m apart and were visible for 137m but had originally continued into the next field to the west. They ran at a slight angle to the slope from east-south-east to west-north-west and curved slightly at the western end. The eastern end opened into a funnel shape defined by two ditches (4055 and 4046) that had been almost truncated away. These were up to 2.4m wide in places but no more than 0.1m deep. This funnel-shaped area was 50m long and 37m wide at the widest point. Just south-west of the house of Rhos Isaf, towards which the funnel was orientated, another ditch (4027) turned in towards the north-east at about right angles to the southern boundary of the funnel. This was partially filled by large stones and rubble. North of 4055 another smaller ditch 4053, 1.2m wide and up to 0.1m deep, ran at an angle to the larger ditch but curved towards it at its south-eastern end. At slightly curving ditch 4122, 1.5m wide and 0.25m deep crossed near the neck of the funnel.

On the same alignment as the parallel ditches in trench three were two more slight parallel ditches (3307, 3309). Ditch 3307 was 0.85m wide and 0.1m deep and continued to the north-west as a narrow ditch 3299. Ditch 3309 was broader at 1.56m wide but still only 0.1m deep. A curving drainage ditch 3330 cut across this area but it was not possible to tell if it post or pre-dated the parallel ditches. To the north-west of the end of the double ditches was a ditch with a sharp right angled corner 3700/9167. The main ditch was 1.1m wide but erosion on its north-west side had widened its upper part by another 0.8m. It was 0.57m deep and had a nearly V-shaped profile. This ditch continued to the north-east into trench 5, where it ran right across the trench, bending round several corners on the way. Where it was sectioned in trench 5 (as 5005) it was 1.77m wide and 0.82m deep with a steeper V-shaped profile. To the west of the right angled corner this ditch continued into trench 6 as ditch 6024, which ran down the slope, curving more towards the north at its north-western end to follow a slight valley in the boulder clay.

In trench 5 a ditch (5019) entered in the north-eastern corner and ran south-west for 57m then turned west, possibly aiming to take a rather winding course to ditch 5005. However, after about 20m ditch 5019 could not be traced any further. The ditch had a broad V-shaped profile, 1.9m wide and 0.5m deep. It had a ceramic land drain in its base but this was probably a re-use of an existing boundary ditch.

In the northern end of trench 3 was a ditch running towards 5005 from the south-east. This ditch 3946 was up to 1.8m wide and 0.3m deep. It became narrow to the north-east but seems to have continued into trench 5 and may have joined 5005.

Inside the corner of 3700/9167 was a ditch (3815) forming the other two sides of a rectangular enclosure. A shallow gully (9258) ran parallel to the north-western side of this enclosure. Ditch 3815 was 1m wide and 0.42m deep and unlike most of the post-medieval ditches three different fills could be distinguished.

To the south of the end of the parallel ditches (3307, 3309) was a more complex junction of field boundaries. Ditch 3396 (0.87m wide and 0.3m deep) formed a sharp right angled corner, although it could only be traced for 7m to the south-west of this corner before being lost in the fill of the Romano-British enclosure ditch. To the north-west it curved round and ran in a rather winding course almost due west for about 63m. Towards its western end it was recorded as 3986 and was 0.8m wide and 0.3m deep. This curved more towards the north just before leaving the trench and continued into trench 6 as 6091, which merged into ditch 6024 at its north-western end. There was a hint of a cobbled surface or trackway to the south of this boundary. A patch of cobbles (3522) containing three horseshoes survived in the hollow created by the end of one of the drainage gullies surrounding roundhouse C.

The eastern end of this ditch seemed to have a shallower recut in its upper fill. This recut (3355) varied from 0.4m to 1.5m wide, but was rarely over 0.2m deep. At its eastern end this also seemed to turn a right angled corner and to continue south-west parallel to 3396. At this point the ditch 3397 became larger and more clearly defined; it was 3.1m wide and 0.45m deep. Heading south-west this ditch varied in width and depth, becoming entirely truncated in places. At its smallest it was 0.6m wide and 0.25m deep. Where it reached up to 1.6m wide at the surface this was due to erosion of the upper sides on one side or the other making it wider than originally dug. This ditch ran south-west from the corner for over 100m to the trench edge. The ditch 3187 seen in the extension near roundhouse A was almost certainly part of the same ditch. A 15 m length of ditch 3425 ran roughly parallel with the main ditch for a short way. This ditch was 0.6m wide and 0.16m deep. It was filled by dark brown silt, much darker than the other ditch fills.

Just south of roundhouse F a post-medieval ditch (3906), c. 1.2m wide and up to 0.6m deep, ran downhill from the south-east to north-west, approximately perpendicularly to the main field boundary 3397. It appears to have been partially removed by an erosion event that deposited numerous stones (3908) roughly along the line of the ditch. The stones seem to have been deposited by water erosion or colluvial action, with the movement following the original line of the ditch. This deposit was similar to other collections of stones elsewhere on site that were interpreted as the result of late colluvial events. There was evidence that a natural palaeochannel (9252) underlay this area and that it had probably always channelled water to some extent. Ditches 9030, 3920 and 9041 have been described in relation to structure F in the roundhouse settlement, but may in fact have been post medieval as discussed below.

Orientated north-west to south-east close to the southern edge of trench 3 were the slight remains of a shallow ditch 3014, 1.08m wide but only 0.06m deep. This ran for about 11m and 30m further west another small section had survived. Further north in trench 3 was a low bank (3028) of stones, overlying the end of one of the Iron Age/Romano-British southern enclosure ditches. This bank was a linear spread of stones c.10.8m long and 0.7m wide but surviving to a height of only 0.1m. It ran south-east to north-west directly down slope and exactly parallel to the land drains in this area. On its north-eastern side it had a parallel ditch (3062), 1.1m wide and 0.27m deep, the fill of which contained post-medieval pottery.

There were three large pits in trench 3, two of which held large boulders and one was filled by smaller cobbles. Pit 3491 was sub-circular and steep sided, 3m in diameter and about 0.29m deep. In its centre was a rounded boulder 2m in length. Pit 3273 was an oval pit measuring 2.4m by 1.9m by 0.6m deep. Its sides were rather irregular and it was filled by the large broken fragments of a large grey-blue metamorphic boulder. The unbroken surfaces showed that it was a local glacial boulder and drilled charge holes proved that it had been broken by blasting. Pit 3186 was an oval pit with near vertical sides and a flat base measuring 2.8m by 1.8m and 1.3m in depth. Most of its fill was composed of large and medium sized rounded stones.

In trench 7 were two parallel ditches (7026 and 7028) running at a slightly different angle to the land drains and following a slight linear hollow in the boulder clay. These ditches were up to 1.6m wide, 0.13m deep and about 2m apart. The northern ditch seems to have continued at the western edge of the trench as ditch 7009. Also at this end of the trench was ditch 7034 running nearly north-south. This was 0.9m wide and 0.4m deep. Running north-south across the eastern end of trench 7 was ditch 7015, which was very straight and 1.8m wide and 0.4m deep. It had a stony primary fill mistaken when first section for the surface of a trackway. Along the southern edge of trench 7 were two ditches (7022 and 7024). Both followed a similar line but 7024 seemed to cut 7022, although their fills were very similar so the relationship was difficult to determine. Ditch 7022 was 0.8m wide and 0.35m deep and 7024 was

0.9m wide and 0.45m deep were sectioned, although as visible on the surface they both seemed to vary considerably in width.

In the north-east corner of trench 8 was a north-south aligned ditch (8001) 1.3m wide and 0.24m deep. Roughly perpendicular to this was ditch 8003 1m wide and 0.28m deep. This was a very straight ditch, which probably formed a right angle with 8007 at its western end. Ditch 8007 was a similarly straight ditch 1.6m wide and 0.28m deep. A slightly curving ditch (8009) ran close to the western boundary of the trench. This ditch was 1.4m wide and 0.5m deep. At its southern end was a broad, shallow ditch (8034) running roughly east-west and much confused by later land drains. South of this a 15m section of ditch (8011), 1.6m wide and 0.35m deep. Its fill contained pieces of slate and occasional stones. This ditch ran nearly north-south and at its southern end it seemed curve east into a wider, deeper ditch (8015), 3.2m wide and 0.9m deep. This area was in a hollow filled with a variety of natural deposits and was excavated during a period of heavy rain, so it was difficult to follow features in plan. Ditch 8015 was filled by sandy silts with numerous medium and large rounded stones, and was cut on its south-western by a smaller ditch (8013), also full of stones. Ditch 8013 may have been the continuation of a north-west to south-east aligned ditch further east. This ditch (8025) was 0.8m wide and 0.28m deep, and only visible for a length of 34m, but ditch 8013 did continue its line fairly accurately. The larger ditch (8015) may have joined to another large, curving ditch (8018) to the south-east, but to do so it must have turned an angle. Ditch 8018 was 1.9m wide but still 0.9m deep and both ditches were U-shaped in profile, but 8018 seemed to have had a channel cut into its base. This ditch curved towards the south and merged with a confluence of ditches near the southern edge of the trench. Curving off from this confluence south-west of 8018 was ditch 8021; 1.7m wide and 0.28m deep. This had a slighter ditch (8023) running parallel to it. Coming from the confluence to the east of 8018 was ditch 8027. This was a straighter ditch 1.35m wide and 0.2m deep, which ran north-east to join with ditch 8025, forming a T-shape.

### **Interpretation**

The excavated area formed part of the Penrhyn Estate and its development can be followed through the estate maps. The earliest relevant map in the Penrhyn Collection dates from 1768 (Ms S2205) (Fig. 79). This shows an enclosed landscape with fairly small fields. In 1840 a map was made of the estate (Ms S2214) (Fig. 80), which was used in 1841 as the base for the tithe map (Mss S2215 and 230). This shows the field layout changed and the fields grouped into farms. The development area falls mostly within the farm of Rhos Issa (Isaf), with some fields belonging to Cefn y Coed. Although the field pattern was different the boundaries of the farms essentially continued with little change from the eighteenth century. The field layout was redesigned again during the nineteenth century and the first OS County Series map (1889, surveyed 1887) (Fig. 82) shows a very regular plan of large fields with small triangular copses. A plan of a proposed railway to the Penrhyn quarries shows that the reorganisation had been completed by 1873 (Ms 263) (Fig. 81).

Several of the maps are sufficiently detailed to allow the identification of many of the ditches exposed during the excavation (Figs 83 and 84). The 1840 map, being more accurate, is easier to fit over the site plan and modern mapping. The earlier map has more inherent inaccuracies and there is no way that scaling or rotating the whole map will make all parts fit well. However, individual sections of the map fit the excavated ditches well enough to securely identify them. The field system in place by the early nineteenth century used several of the mid eighteenth-century boundaries, but the later nineteenth-century field system was entirely different, with only the western boundary of Viaduct Covert reflecting what had existed before. From at least the late eighteenth century a road followed roughly the line of the present A5122. It is shown on both the 1768 and 1840 maps and ditch 1023 could be the roadside ditch for either period. The line of trees shown on the modern mapping shows where this boundary continued. The lane now forming the northern boundary of the site was part of the later nineteenth-century reorganisation. The same ford was in use previously but the road ran further north then turned a right angle to run up the eastern bank of the Cegin to the ford.

### ***1768 field system***

(Figs 79 and 83)

Ditch 1282/1438 fits the 1768 map very well forming the northern boundary to a field was known as 'Cae'r Drws'. Part of the line of this boundary was re-used by the 1840 field system. Ditch 1144 seems to have marked the southern boundary of 'Cae'r Drws', with perhaps 1407 being part of the same boundary, although a little off line. On the map this boundary has a dog-leg in it, which had largely been lost on the ground although the irregular channel (1134) containing boulders and post-medieval pottery might have been related to it. The short ditch 1182 parallel to ditch 1040 at this point could also have been part of this boundary. In this area were a collection of postholes and two pits. The deep well-

defined postholes were presumably related to some sort of structure up to 3m long but its plan could not be clearly determined. Pit 1390 penetrated the present winter water table and could have been a shallow well. The stakehole in the base of pit 1412 could have been truncated by the pit and have been related to the other postholes. This would suggest that these features were not all contemporary. No artefacts were recovered from these features and although they could have belonged to any period their position at this point in the eighteenth-century field system suggests that they may be of this date. As discussed in the Assessment Report (Smith 2005) the eighteenth-century field names suggest that there may have been a dwelling here. The field name 'Cae'r Drws' (the field of the gate) was commonly used for the first field by a farmyard. The field to the south-west was 'Lletur Offeiriad' (lodging of the priest) and to the north 'Cae'r Ffynnon' (field of the spring). There was no building there by 1768, the map clearly marks other dwellings and barns, but the excavated features could be the remains of a small dwelling and farmstead of the early eighteenth century or earlier, essentially the precursor to Rhos Isaf. Whether a priest once lived here is impossible to know without further documentary evidence, but attractive to imagine.

Pit 1365 probably related to the 1768 field system, as it would have been dug out of the way close to a field boundary, in the later period it would have been in the middle of a field. It was probably to bury dead livestock. No bones were found, but the acid soil conditions may have caused the loss of all traces of bone.

Ditch 1139 seems to coincide with the field boundary running south into trench 4, forming the eastern boundary of the field called 'Lletur Offeiriad', but no other features in trench 4 could be identified on the 1768 map.

In trench 3 it is hard to make the map fit the evidence on the ground although it fits well enough in trenches 5 and 6. Ditches 5005 and 6024 were in use by this date as the northern boundary of 'Cors y Rhos'. A kink in the map boundary shows that at this period ditch 6091 was the boundary, although the proportions on the map are wrong. It is probable that the north-east field corner of 'Cors y Rhos' is rather inaccurately represented. The 1768 boundary presumably followed ditch 3396/3986 and was much less straight than shown on the map. The evidence on the ground, with the recutting of this ditch agrees that 3396/3986 was an eighteenth-century boundary. Ditch 3343 was probably the continuation of this boundary to the south-west, although some features along this line fit the nineteenth-century evidence better than the eighteenth map. It is assumed that the earlier boundary was largely cut away or remodelled by the later boundary. However, the ditch on the ground continued nearly straight to the edge of the trench and beyond. The nineteenth-century boundary is shown doing a large dog-leg, so presumably this straight continuation was eighteenth century in date.

The ditch 5019 in the north-eastern corner of trench 5 can be seen on the 1768 map forming the eastern boundary of 'Cae Gwnion', the wiggle on the ground reflecting the curvilinear nature of the boundary on the map. This boundary was re-used in the nineteenth century, though represented as being straighter than it was. Ditch 3946 does not appear on either map and may have been a drainage feature running into the main boundary ditch.

Trench 8 was the area in which the eighteenth and nineteenth-century field systems had most boundaries in common. Ditch 8001 was used in both periods and continued into trench 7 as 7034. An oak tree from this boundary still survives. Ditch 8003 seems to have been just nineteenth century but 8007 could have been in use in both periods, although the similarity of the remains suggest the surviving ditch was of nineteenth-century date, and the existing oak tree must have been on this boundary. The curving ditch 8009 dated from the nineteenth century, but ditch 8034 to the south was probably part of the eighteenth-century system.

The confusion of ditches in the south-west corner of the trench is partly due to the existence of a barn and surrounding yard here in the eighteenth century. The field to the east was called 'Cae Ysgubor' (barn field) and the barn and its yard were attached to the western boundary of this field. The 1768 map marks a building with a chimney, but the lack of windows and a door (marked on all other buildings) as well as the field name suggests that this was a barn and not a dwelling. There was a dwelling house nearby in the small field called 'Clwt' (patch).

Relating the excavated remains to the map is not simple. Ditch 8018 is almost certainly the curving eastern boundary to 'Clwt'. Ditch 8021 might be the southern boundary of this field but it would make the field very narrow compared to the proportions shown on the map. Alternatively ditches 8021 and 8023 could have run either side of a track leading to the dwelling house, the track not being marked on the 1768 map. Ditch 8015 was probably the southern boundary to the yard and feature 8011 may have been related to the foundations of the barn. This was the only feature in which slates were noted, and these were most probably from the roof of the barn. The large quantities of stones in ditches 8015 and 8018 probably originated from walls round the yard or from the barn itself, however, no worked stone or angular blocks were seen so the stone was more appropriate for field walls than a building.



Unfortunately most of the foundations of the barn had not survived and it was not possible to reconstruct its plan.

### ***1840 field system***

(Figs 80 and 84)

The double ditched boundary 1014/1016 was clearly part of the 1840 field system. The map showed that it continued along the line of ditch 1438, which was noted during investigation as having been recut, although it was not recorded in detail. Ditch 1839 at the west end of trench 1 formed the western boundary of field number 1753. The other two boundaries shown on the map within the area of trench 1 are not so easily identified but ditch 1301 may represent the east side of field 1753, with 1436 indicating the start of the continuation of the boundary to the north. The two existing oak trees must have been on the boundary forming the eastern side of fields 1752 and 1672. Tree hollows on roughly the same line probably indicate a hedge related to this boundary. Ditch 2190 may have been its continuation in trench 2, although the curve in ditch 2190 matches the eighteenth-century field boundary more closely. Ditch 4406 almost certainly represents where this boundary ran through trench 4.

Ditch 2188, although re-used as part of the land drain system, seems to have been originally a boundary ditch for the north-east side of field 1672, which it parallels so exactly.

The house of Rhos Isaf did not exist in 1768, but had been built by 1840, when there was a house and barn in the same position as the buildings today. The track from Rhos Isaf into the fields was well preserved in the archaeology. It started next to the house with a funnel-shaped entrance to guide livestock into the track, indicating that it was mainly designed as a droveway. The excavated ditches clearly defined this funnel and even a small side ditch 4053 on the north side was visible on the map. The stump of an oak tree, quite recently felled, marked the position of this tree, which had grown on the northern boundary of the droveway. The map shows some barrier across the droveway where the ditch 4122 cut across the funnel entrance. However a ditch across the track makes little sense and this ditch probably belonged to the 1768 field system and was completely infilled by the time the track was in use. The curve in the track is shown on the map and it demonstrates that the slight double ditches in trench 3 were part of the same feature.

The corner of ditch 3700/9167 can be clearly seen on the map as the south-east corner of field 1770. Where it continued to the west its line is also very clear, with the curve seen on the ground exactly followed on the map. The boundary can also be seen where it continued to the north-east into trench 5. The map shows it as straighter than on the ground, although the wiggles may reflect its eighteenth-century origins. The rectangular enclosure inside the corner of 3700/9167 seemed to respect the main ditch and was probably in use at the same time, even though it is not shown on the map.

The map shows a sharp right angled corner where the boundary from the south-west met the droveway in the north-west corner of field 1755. This can be identified as ditch 3355/3397, with the earlier ditch 3396/3986 presumably belonging to the eighteenth-century system. The map shows this boundary curving north-west to join the field corner represented by ditches 9167 and 3700. On the ground ditch 3355/3397 continued to the west along the line of the earlier ditch. Presumably the layout indicated on the map was a later variation, lost on the ground. From the field corner the map shows the boundary continuing to the south-west. This was seen as ditch 3397, and even a slight kink in the boundary could be recognised on the ground. South of this kink the map and the archaeological evidence diverge; the boundary on the map curves to the west, while the ditch on the ground continued straight. It is assumed that the straight ditch was the eighteenth-century boundary, a shallow gully (3425) possibly indicating where this was straight where the 19<sup>th</sup> version kinked. The curving nineteenth-century boundary may be represented by ditches near the Iron Age structures F and G. These ditches (3920, 9030, and 9041) were initially assumed to be Iron Age and have been described in that section above but they fit the map evidence well. The odd dog-leg in ditch 9030 was difficult to explain in relation to the Iron Age activity but matches the map evidence closely. There was no dating evidence from these ditches and their relationship with the adjacent postholes was only assumed. It seems probable that they were post-medieval and not Iron Age. Ditch 3902 may be shown on the map as the dashed boundary running to the west, although the ditch on the ground continued east was well.

The southern boundary of field 1755 seems to have been represented by 3014, which had only survived in short sections.

Two of the three subdivisions shown as dashed lines in field 1769 were visible on the ground. Ditch 7015 ran north-south across the field and the double ditched feature (7026, 7028) marked the subdivision at approximate right angles. This was continued further west by 7009. The southern boundary of this field in the nineteenth century was marked by ditches 7022 and 7024, the curve at the western end of which exactly matched that on the map.

As described above most of the trench 8 boundaries followed ones already in use by 1768, although, as there was no trace of recutting of these ditches it appears that those surviving were mostly in their nineteenth-century form. This was clearest in the case of 8007, which was so straight and similar to ditch 8003. The latter was only used in the nineteenth century, and 8007 must have also been nineteenth century in date, despite an earlier boundary being shown along roughly the same line on the earlier map. The existing oak trees on the line of 8007 and 8001 probably also date from the early nineteenth century. The eastern branch 8027 of the confluence of ditches on the southern side of the trench was nineteenth century as was the ditch 8025 running across its northern end.

All the surviving oak trees on the site were of a similar age and could be allocated to nineteenth-century field boundaries or boundaries re-used at this time. They were probably originally planted at the same time to be timber trees growing within the hedges. The 1889 map shows all the existing trees and a few more that have been lost since that date. Most of the extra trees mark the boundary 5005 in trench 5, but there is also one by the droveway in trench 3.

### ***1889 field system***

(Fig. 82)

Considerable work was put into reordering the field system in the late nineteenth century. It was laid out with precision and new hawthorn hedges were planted, but the timber trees were retained isolated within the new fields. Some of the original slate fences from this period still survived on the southern boundary of the site. Perhaps most impressive were the miles of ceramic land drains laid across the site. These were densest towards the lower, western end of the site, in places only 3.5m apart. But their fills were not always easy to distinguish from the natural deposits and more may have been present at the higher, eastern end of the site than were recorded. Certainly they were present where there were local drainage problems. In places there were intercutting land drains indicating different phases of drainage but the vast majority were neatly related to each other and clearly laid out as a single event. There were also earlier drainage features as represented by stone-filled French drains that seemed to be more ad hoc solutions to specific problems and must have pre-dated the main land drain event. In the case of 2102 both the regular land drains and the slate-lined culvert 2006 cut this French drain. The fine slate-lined culvert in trench 2 may have been created to channel a pre-existing stream, although there was no evidence of a stream channel other than the broad, shallow band of silt.

There seems to have been a deliberate attempt to remove some of the larger boulders from the level of the plough. The boulder in pit 3273 was blasted into pieces before these were buried. This blasting suggests a nineteenth-century date for this activity and that it was related to the Penrhyn Estate improvement of the land in the late nineteenth century. The estate, which also owned the Bethesda slate quarry, would have had easy access to gun powder and men with the expertise to use it. Although pit 3491 was located exactly on the line of the enclosure ditch around roundhouse A it is assumed to be part of the same activity as 3273. The pit seemed to have been deliberately dug to hold the boulder and it is unlikely that such effort would have been expended at other periods to bury a boulder. Although much deeper it seems probable that pit 3186 was dug to bury the stones within it and reduce the number of larger stones in the ploughsoil in this area.

### ***Other features***

Several of the ditches cannot be identified on either map and some of these could be earlier than the mid eighteenth century. Ditch 1040 is a problem because on excavation it appeared to cut ditch 1014. Where it met 1040 ditch 1014 was less than 0.1m deep and it is probable that post-depositional processes caused the soil changes that gave the illusion of 1040 cutting 1014. The former ditch did not fit with the 1840 field system and is likely to have been older than it. Ditch 1040 is not shown on the 1768 map either but it seems to continue the line of the eastern side of the dog-leg in the boundary at this point and may represent an earlier version of this field altered by 1768. The two parallel ditches 1034 and 1025 probably fit better as sub-divisions within this field than as parts of the later field systems. Ditches 1250 and 1349/1500 were not shown on either map and may be earlier, possibly related to ditch 1201. The bank (3028) and ditch (3062) in trench 3 are not shown on the maps but their alignment with the land drains suggests a late date, as does the presence of nineteenth-century pottery in the ditch fill.

### ***Finds***

There were relatively few finds from the post-medieval features but they can be used to comment on the interpretations arising from comparisons with the map evidence. Pottery from the deposit overlying the slate road bedding (1535) suggest this earliest excavated phase dated to the mid-late nineteenth century and was probably part of the road represented on the 1840 map. It is possible that the

artefactual evidence may provide a more accurate date for the double ditched boundary 1014/1016 running across trench 1. The map evidence is quite clear that the eastern end at least of this boundary was in existence by 1840 but not in 1768. As well as two iron objects the boundary produced eighteenth-century pottery and two coins. One coin was a George III penny dated 1797, but somewhat worn. The other was not very clear but possibly a George III penny of the 1806-7 issue. If the pottery had been in use for a generation before being thrown out an early nineteenth-century date might be suggested for the deposition of these objects in the ditch. However all could have been in use well into the nineteenth century and perhaps can refine the date no more than early nineteenth century sometime before 1840.

The brick-lined soakaway (1123) might be expected to be related to improvement and reorganisation of the field system in the late nineteenth century but sherds of pottery from a clayey deposit sealing it dated from the early nineteenth century. They may, however, not have been discarded until later in the century, so again they do not necessarily improve the precision of the date.

Ditch 1144, which seemed most likely to belong to the 1768 field system, contained a sherd of a Cistercian Ware cup made between the late fifteenth to the early seventeenth century, perhaps supporting its existence from at least the early eighteenth century if not the seventeenth. The late seventeenth to eighteenth-century pottery from ditch 1250 suggests that this should have been part of the eighteenth-century field system, although it was not shown on the map. Perhaps the boundary had gone out of use by 1768. Eighteenth-century pottery from ditch 1407 can also be used to support the suggestion that this was part of the eighteenth-century field system, although as demonstrated above by 1014/1016 eighteenth-century pottery can be found in demonstrably nineteenth-century features. In the case of ditch 1407 the number of sherds (12 from two vessels) suggests that they were not residual, and the fact that they were coarse ware may indicate that they were not carefully curated for generations. Ditch 1439, next to 1407, contained 13 sherds of eighteenth-century pottery, so it is very likely that these features dated from the eighteenth century or earlier. The alignment of these ditches does not closely follow that of the northern boundary to 'Llettur Offeiriad', but the map could be in error here. Alternatively they may have been either drainage features or another field boundary that was out of use by 1768.

In trench 3 there were not enough finds to help date the post-medieval ditches. Ditch 3397, which is argued from the map evidence and stratigraphy to be nineteenth century produced eighteenth-century pottery, but as it cut a presumed eighteenth-century ditch this is not surprising. This field corner, where the droveway entered the fields produced a small but interesting collection of metal artefacts. From the ploughsoil directly over ditch 3396 came a copper token halfpenny from the Parys Mines Company, Anglesey (SF370), dated to 1788. Nearby was a 95g amorphous lump of waste lead (SF368) and a bronze buckle of possibly Georgian date (SF587).

A ditch (4046) defining the funnel entrance to the droveway in trench 4 contained a late nineteenth to twentieth-century potsherd, probably representing the date it was finally infilled. The ditches in trench 8 produced no finds that aid their dating, but 8001 did contain a small Mesolithic-style flint core.

A sherd of late nineteenth-century stoneware from a land drain may support the assumption that they were constructed at the same time that the new field boundaries were laid out.

## **Miscellaneous features**

### ***Tree hollows and burnt patches***

(Figs 5 and 6)

Over much of the eastern end of the site, but particularly concentrated in the south-east corner, were amorphous features of varying sizes and depths. Their fills were of loose, dark silt or loam and generally contained numerous stones. Many of these features were investigated but the irregular shape in plan and particularly the irregular bases of these features indicated that they were caused by the roots of trees or shrubs. Some of the largest may have been tree throw holes caused by the roots being pulled out of the ground as a tree is blown over, but most had undisturbed root holes and were caused by the action of the tree or shrub's growing roots. The density of stones in these features might be due to the action of the roots causing a sorting of the substrate or from clearance activities where stones are collected and dumped around growing trees.

Another class of feature found very commonly across the site was the burnt patch. These were usually areas of burnt sub-soil, red or orange in colour and generally small, although some did exceed 2m across. The sub-soil was in places fired into hard lumps and the effect of the heating could extend down 0.2m from the existing surface. It is assumed these features were caused by burning on the ground surface, although how the heat had penetrated so deeply into the sub-soil is not clear. Occasionally intense heating effects were seen 0.4m below the exposed surface, e.g. 1098. It is assumed that in these cases animal burrows drew the heat of the fire into the ground. Other burnt

features consisted mainly of patches of charcoal, some of which clearly preserved the shape of roots and these are assumed to have been trees or shrubs that have been burnt down, the charcoal then becoming incorporated into the rootholes. This burning activity was more common towards the higher eastern end of the site but was found all over the site. It is assumed that much of it represents the burning of gorse and other shrubs on rough pasture and much of it may have dated to the late nineteenth century when the area was improved and the field layout redesigned. Some could be much older but without radiocarbon dating each patch this is impossible to determine. The concentration of the both the burnt patches and tree hollows towards the eastern end of the site suggests tree or shrub growth on the drier ground of the ridge.

#### *Possible peri-glacial features*

There were several large hollows or pits that were difficult to understand as anthropogenic features but were also hard to explain through geological processes. Feature 4182 was about 5m in diameter and over 1.1m deep. Its upper fill appeared to be a deliberate dump of large stones, but the lower fills were eroded silt and shale, with what resembled a relict soil horizon in the base. The conditions in which a soil could form and then considerable erosion of the bedrock occur were not obvious but the general character of the deposits suggested the feature had filled in under peri-glacial conditions. The final dump of stones may have been deliberate, taking advantage of the existing hollow. Pit 1013 measured 2.5m by 1.2m and was 0.4m deep. It seemed to be quite regular in shape with steep sides and a flat base but the sides were diffuse and hard to identify. The fill had lenses of gravel and stones and was much more mineralised than the genuine archaeological features. It is probable that this was the product of frost sorting or other periglacial effects on the silt sub-soil.

Feature 2028 was a perfect circle 2.5m in diameter with clearly defined sides but its gravel and clay fill was too hard to dig by hand. This was in the boulder clay and is assumed again to be some alteration or variation in this deposit. There was a similar feature in the shale further west, 3106, which was 3m across and well defined, but its loose shale fill appeared to be completely natural.



## A SUMMARY: PARC BRYN CEGIN AND ITS LANDSCAPE

### Parc Bryn Cegin

(Figs 5 and 6)

The radiocarbon chronology has converted the isolated features of Parc Bryn Cegin into landscapes. This section provides a site-wide summary of the archaeology following the landscape changes.

The Mesolithic presence on site was slight and fleeting. The small, widely dispersed scatter of Mesolithic artefacts indicates little beyond hunters occasionally crossing the site. The pollen core at Llyn Cororion indicated a temporary forest clearance event involving fire showing that Mesolithic people were already altering the forests (Watkins 1990). However, their settlements in the area have not yet been identified and the two Llandygai excavations can only demonstrate an ephemeral presence at this period.

In the Early Neolithic the rectangular timber building was used between 3760-3700 cal BC and 3670-3620 cal BC. A similar building lay 500m to the north, but it cannot be proved whether these were contemporary. Probably during the life of the Parc Bryn Cegin timber building an earth oven (6033) was used 430m away on the lower part of the site. This was situated on a low, dry knoll in a sheltered location not far from the river; an ideal site for occupation. Further up slope was another earth oven (3133), possibly contemporary with the building or used slightly later. There may also have been activity up on the ridge top, or just over the eastern side, where it would be more sheltered. Similar, temporary occupation continued after the timber building went out of use, with an earth oven (1259) less than 100m to the south-east of the building and a small pit (3146) on the slope to the west.

It has been argued above that the earth ovens can be tentatively taken as indicators of settlement and represent occupation sites of a different nature to the timber building; ephemeral sites with slight structures, whose remains no longer survive. Their continuation after the timber building went out of use suggests they were not necessarily satellite sites to the building, but functioned independently of it. Three ovens and a pit do not make a settlement system, but they hint at a range of short-term settlement activity scattered around the landscape in suitable, habitable corners, both contemporary with and continuing later than the impressive timber building up on the ridge.

The Mid Neolithic Peterborough Ware pit groups are also indicators of settlement in the general locality but their proximity to that settlement is unknown, whether on this hillslope overlooking the contemporary henges or further away. Apparently contemporary with the Peterborough Ware pits was burnt mound 6094. This appeared no different to later examples and was located on low ground 370m from henge B and only 30m from two Peterborough ware pits (6034 and 6072). The dates from pit 6072 are very similar to those from mound 6094, but the large calibration errors mean that it is impossible to say whether these features were exactly contemporary. The dry knoll used by the earlier earth oven was reoccupied and focus on this site continued into the later Neolithic with the Grooved ware pits in Pit Group VI. The other Grooved ware pits (Pit Group VIII) reused the site of the Early Neolithic timber building, perhaps indicating a remembrance of its location.

Although there is a significant chronological gap between the first burnt mound and the rest this gap is largely filled by the Grooved ware pits, so activity on the site was in a general sense continuous. The pit digging activity, however, could represent one or two days in a period of over 200 years. The burnt mound tradition at Parc Bryn Cegin seems to have flowered at the end of the Neolithic. Mounds 7035 and 6010 at the western end of the site, mound 4199 in the middle and the largest mound on site, 2176 at the eastern end, all date from the end of the Neolithic period. The eastern group of mounds show a succession from this period through into the mid Bronze Age. As the latest dates from mounds on the site are unreliable there is no significant evidence for burnt mound activity later than the 12<sup>th</sup> century BC.

It seems that there were still earth ovens in use in the Bronze Age. Although the disparate dates on feature 3314 make its dating difficult, the best preserved of these features (1072) was Bronze Age in date. These may indicate temporary settlement fairly close to the burnt mounds; most clearly demonstrated by the postholes and pits near the fire pit or earth oven 1230. Although no clear plan could be recognised in the scatter of postholes there was some type of small structure here, but whether this was a domestic settlement or a specific activity site is unclear.

Feature 7055, in the lower lying western end of the site, also dates to this period. It clearly involved hot stone technology but the stakeholes round the base of the pit suggest a different function to the majority of the burnt mounds. Activity in the Bronze Age was therefore extensive across the site, and not restricted to classic burnt mounds. Some temporary settlement is likely and the range of activities was much wider than just cooking in boiling water. In fact the activities may have extended to the

funerary if the barb and tanged arrowhead found in trench 4 did indicate the site of a former cremation burial and cairn (4112).

There was then a hiatus in activity on the site, although continued agricultural use of the area would seem probable. The site was occupied again in the Mid Iron Age when the ring-groove roundhouse (E) was built. The location of this was similar to that of the Early Neolithic building; on the north-west facing slope not far from the top of the ridge, in quite an exposed position not conveniently close to water. Had the possible cairn less than 20m up the slope influenced its location or was it important to be close to the better land towards the top of the ridge? The later settlement adopted a more sheltered position further down the slope. The main settlement seems to have been preceded by activity possibly in the first century BC involving a timber structure and possible industrial activity. The main phase of settlement was probably not occupied before the first century AD. Unfortunately roundhouse A, with its two phases, did not provide suitable material for radiocarbon dating, so an earlier origin might still be possible.

The settlement was certainly occupied in the first and second centuries AD and perhaps into the third century. Contact with the wider Roman world is evidenced by the presence of Roman pottery and the seal box. There was also glass bead making taking place somewhere on site, probably for trade.

After the third century AD settlement must have moved elsewhere. The early medieval cemetery found on the Industrial Estate site and another found recently by aerial photography (see below) suggest there may have been a movement closer to the present location of Llandygai village. The site, however, was not totally abandoned, as in the sixth or seventh century AD smithing took place on what was the site of roundhouse E. This seems to have been an isolated site dedicated to metal-working. Why it was here and whether it hints at settlement in the vicinity is not clear.

It is probable that the site was under fields throughout the medieval period, although no medieval field system was found. A small number of ditches seem to predate the eighteenth century map, and boundaries on this map hint at earlier field systems. It does seem very likely that the upper part of the site was arable land by the twelfth century as a corn drier of this date was found. The eighteenth century field system probably retained traces of the medieval fields, which in turn may have incorporated at least the eroded remains of the roundhouse settlement as a boundary marker between the arable and pastureland. The continuity and consistency of agricultural use may have been considerable, broken only when the whole area was converted to improved grassland in the later nineteenth century.

### **The land between the rivers**

(Fig. 76 and table 10)

Parc Bryn Cegin is large enough to reveal something of the prehistoric landscape within its boundaries but it can be more clearly understood when compared to the topography and archaeological evidence of the surrounding area. The site is located in the parish of Llandygai, which lies between the rivers Ogwen and Cegin. Along with the parish of Llanllechid, which runs up to the mountain summits on the eastern side of the Ogwen, this makes an obvious geographical and economic unit. The boundaries are defined by rivers and watersheds and include coastal, lowland and upland zones. This area might, therefore, have been perceived as a unit over a very long period of time.

The township of Cororion (Creuwriion) on which the parish of Llandygai was based (Carr 1977) is mentioned in the Mabinogion (Jones and Jones 1949, 58), and its western boundary was also the cantref boundary (RCAHMW 1956). This boundary runs along the summits of the north-south ridge to the west of Nant Ffrancon. The ridge, reaching over 900m in altitude, presents a prominent division in the landscape with a major pass through the mountains on its eastern side formed by the valleys of the Ogwen and the Llugwy. The forested landscape of prehistory will have done little to reduce the impact of the mountains and the rivers would have been even more important to guide the traveller through the trees. It is therefore not unreasonable to speculate that this may have been seen as a significant boundary from antiquity.

Travel north-south would have been restricted by the mountains, through which Nant Ffrancon provided a pass. This route was chosen by Telford for his London to Holyhead road, but had probably been used since at least the medieval period, and possibly by the Romans (Trinder 2003, Williams-Jones 1977, Waddelove 1999, Hopewell 2005, 19). There is no evidence for an even earlier routeway, such as the standing stones that mark the Bwlch y Ddeufaen route further east, but a prehistoric route down Nant Ffrancon seems likely.

This narrow strip of land between a major natural boundary and a significant routeway may have had importance from the Neolithic period onwards. The only Neolithic tombs identified in this part of Arfon lie between the two rivers. Unfortunately both are uncertain sites. The supposed tomb at Sling is about 3.5km to the south of the site. It is now largely collapsed and consists of what is interpreted as a

large capstone propped on a single stone. Lynch (1969, 148) was unable to classify it and the large slab looks as if it was abandoned in the process of removal from the bedrock rather than part of a finished but dilapidated tomb. About 3km to the north of the Parc Bryn Cegin a tomb apparently once existed near the mouth of the Afon Ogwen on Traeth Lafan (Williams 1806). Williams (1806, 206) says that 'At the entrance to the first weir in the sands which belongs to the proprietors of Penrhyn, there was formerly a large cromlech'. This was still there, although collapsed in 1805. The stones were limestone, so proving that this was not a natural formation, as there is no limestone on the southern side of the Straits. If this was a genuine tomb it may still exist buried under the sands.

With so little firm information about other aspects of Early Neolithic life it is difficult to place the two timber buildings within a meaningful context. Parc Bryn Cegin has produced evidence hinting at other, more transitory settlement in the Early Neolithic but there is not yet sufficient evidence to identify the extent or distribution of this activity. A number of polished stone axes have been recovered from the coastal lowlands, but these could belong to the later Neolithic. Did the two impressive timber structures mark the land between the rivers out as special or where they part of the ordinary range of settlements to be found across the Arfon plain and beyond? A great deal more work is necessary before starting to answer these questions.

It is probably even harder to establish whether the presence of the buildings influenced the location of the henge complex. Henges elsewhere were built over earlier monuments (Barclay 2005, 93), but there were usually large monuments such as cursuses (Gibson 1999b, 135). The natural features of the landscape would have been reason enough for the location of the complex, even if the existence of the earlier buildings had been completely forgotten. The henge complex was on a meeting of natural routeways, east-west along the Straits and the coastal plain and north-south through Nant Ffrancon. Several authors have linked henges elsewhere with routeways (e.g. Harding 2003, 90-97, Loveday 1998), and it may have been these routes that were the greatest influence on the location of the henges at Llandygai.

Both henges and cursuses are often in close proximity to water and in low-lying locations (Gibson 1999b, 132; Harding 2003, 54). Cursuses are closely related to topography and tend to lie on the gravel terraces of major rivers with one end terminating close to the river or a tributary (Harding and Barclay 1999, 5). At Llandygai the cursus, although on fairly flat land, is not on a river terrace and is some distance from the rivers, but, unlike the alignments of the other monuments, it seems to be as close to perpendicular as possible to the line of the ridge between the two rivers. The position of a contemporary large circular feature (site D, Lynch 2001, 81) emphasised this line across the ridge, which perhaps referenced the two rivers.

In general it seems that contemporary settlement avoided both henges and cursuses (Harding 1999, 32; 2003, 61). Around Woodhenge and Durrington Walls the density of flint scatters increased at about 1.6 km from the monuments, suggesting most settlement was restricted to this zone. However, there were dense scatters no more than *c.* 0.5 km from the Thornborough henges (Harding 2003), so the 'excluded space' (ibid, 61) around these monuments seems to have been variable. If the pit groups in Parc Bryn Cegin represent settlement they were at about the same distance from the henges (between 460-700m from the nearest henge) as the settlement at Thornborough. The exception is Pit Group VI, which at *c.* 370m from henge B, might be considered a little close. Assuming an unwooded landscape the intervisibility of the pit groups and the henges may indicate a link between them, perhaps representing private ritual associated with the public ritual in the henges. From the present evidence it might be suggested that mid and late Neolithic settlement, or at least more pit groups, might be successfully sought to the north within Parc Penrhyn about 500m or more from henge A.

The ceremonial complex retained its importance into the Bronze Age as a round barrow of this date was excavated near henge B. Some activity may have been continuing within henge B and a cremation burial in henge A dated to the Bronze Age. Circular features identified in the adjacent field to the east are also likely to be round barrows (Lynch 2001), and others may have existed that have been levelled by agriculture. As discussed above there may have been a Bronze Age funerary cairn on Parc Bryn Cegin, almost completely obliterated by agricultural improvements. Carnedd Howel (PRN 30), a particularly large cairn about 1km to the south of the site, is located on the top of the ridge and its size could mark the continued importance of the land between the rivers. Other large cairns sit on the hill and mountain summits marking the watersheds later used to define the parishes of Llandygai and Llanllechid.

Bronze Age settlements are very rare in north-west Wales, and the Parc Bryn Cegin excavations have not identified a clearly defined settlement. A scatter of finds, including bronze axes and moulds, on the lowlands near the site implies activity here, possibly workshops in the valley bottoms, close to water (Lynch 1990, 1992 and 1994). The number of burnt mounds on the present site suggests that they may have been very common within this area and indicate considerable activity, possibly including slight

temporary settlements. More settled occupation might have occurred on the drier, flatter ridge top not investigated by the present project. It could be postulated that the presence of Carnedd Howel and the barrows close to the henge complex indicate that the land between the rivers remained a special zone and settlements may have been beyond this area, with only temporary aggregation sites and their associated burnt mounds within it.

Settlements from the Early or Mid Iron Age are rare but the ring-grooved roundhouse at Parc Bryn Cegin helps to fill this gap. It is probable that the settlement in Llandygai henge A formed a focus for unenclosed, scattered settlements, one of which was roundhouse E. By the later Iron Age the landscape was extensively occupied. Parc Bryn Cegin demonstrates that these sites can be found in more intensively farmed area, and recent aerial photographs by RCAHMW hint at a possibly more substantial enclosed settlement in Penrhyn Park (Driver 2006) (PRN 403359, 403397).

Many of the roundhouse settlements, including that at Parc Bryn Cegin, continued into the Roman period. The site lies close to various possible routes of Roman roads (Hopewell 2005). The road along the coast to Segontium (Caernarfon) was probably located about 250m to the south of the site. The northern end of a route proposed by Waddelove (1999, 87-88) through Nant Ffrancon follows the old A5 near Llandygai and then on the line of a terrace into Penrhyn Park. He suggests that this road was heading for a fort defending a port at the mouth of the Ogwen or Cegin. A Roman fort in Penrhyn Park has been suggested by others because of its intermediary position between Caerhun and Caernarfon (Lynch 1994, 9). Waddelove (1999, 101) notes the well defended position of the promontory between the rivers with two good harbours, and in a good position to control crossings to Anglesey. A cropmark initially identified as a fort is most probably a natural feature (PRN 2370), and no other evidence has yet been found for it, although the likely location for a fort would mean that much of it might be obscured by Penrhyn Castle. The work at Parc Bryn Cegin may provide some support for the possibility of a fort as the Roman pottery assemblage and the seal box suggest a closer association with a military establishment than the proximity to the road can explain.

The presence of a Roman fort may have influenced settlement in the medieval period. Settlement of this period was notable by its absence from Parc Bryn Cegin but there was clearly an early medieval presence in the area because of the cemetery on Houlder's site. This has been consolidated by recent aerial photographs of a square barrow cemetery (PRN 404666) just over 200m from the excavated one. Square barrow cemeteries in some places developed from Roman cemeteries, and a still functioning Roman road might have encouraged medieval settlement along its line. Aerial photographs of a platform house and ridge and furrow near the village of Llandygai and the fourteenth century church indicate a later medieval village here. Whether the early medieval village was in the same location is not known but the cemeteries suggest that it was not far away. The early medieval smithing site found on Parc Bryn Cegin was also unlikely to be too far from the settlement focus.

In the adjacent valley the monastery of Saint Deiniol was founded in the sixth century AD and by the tenth century it was a settlement of importance and developed into a cathedral city in the twelfth century (Longley 1994). However, the focus of earlier settlement in the area may have been not far from Llandygai on the land between the rivers, which had been of importance for millennia.



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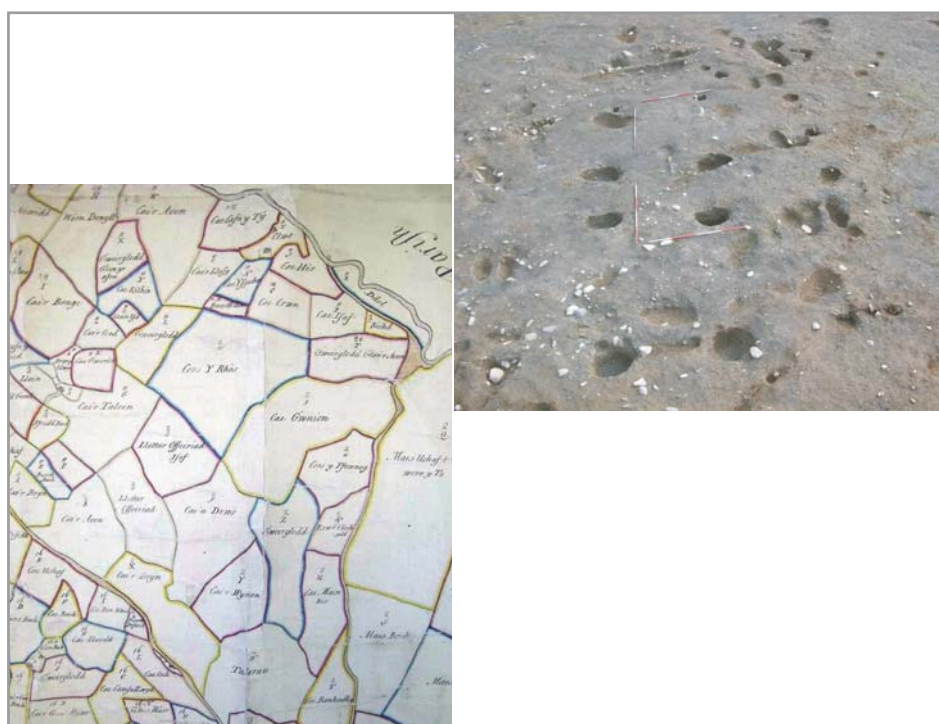
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# Recent Excavations at Llandygai, near Bangor, North Wales

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## Full excavation report Volume II: illustrations and tables

GAT Project No. G1857  
Report No. 764  
December 2008



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Site code: G1857

Volume II: illustrations and tables

Prepared for JacobsGibbs on behalf of  
the Welsh Assembly Government

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Jane Kenney

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Table 8: Summary of rectangular Neolithic buildings in Britain and Ireland

Table 9: References for sites in table 8 and other related sites

Table 10: Archaeological sites around Parc Bryn Cegin as shown in Fig. 76



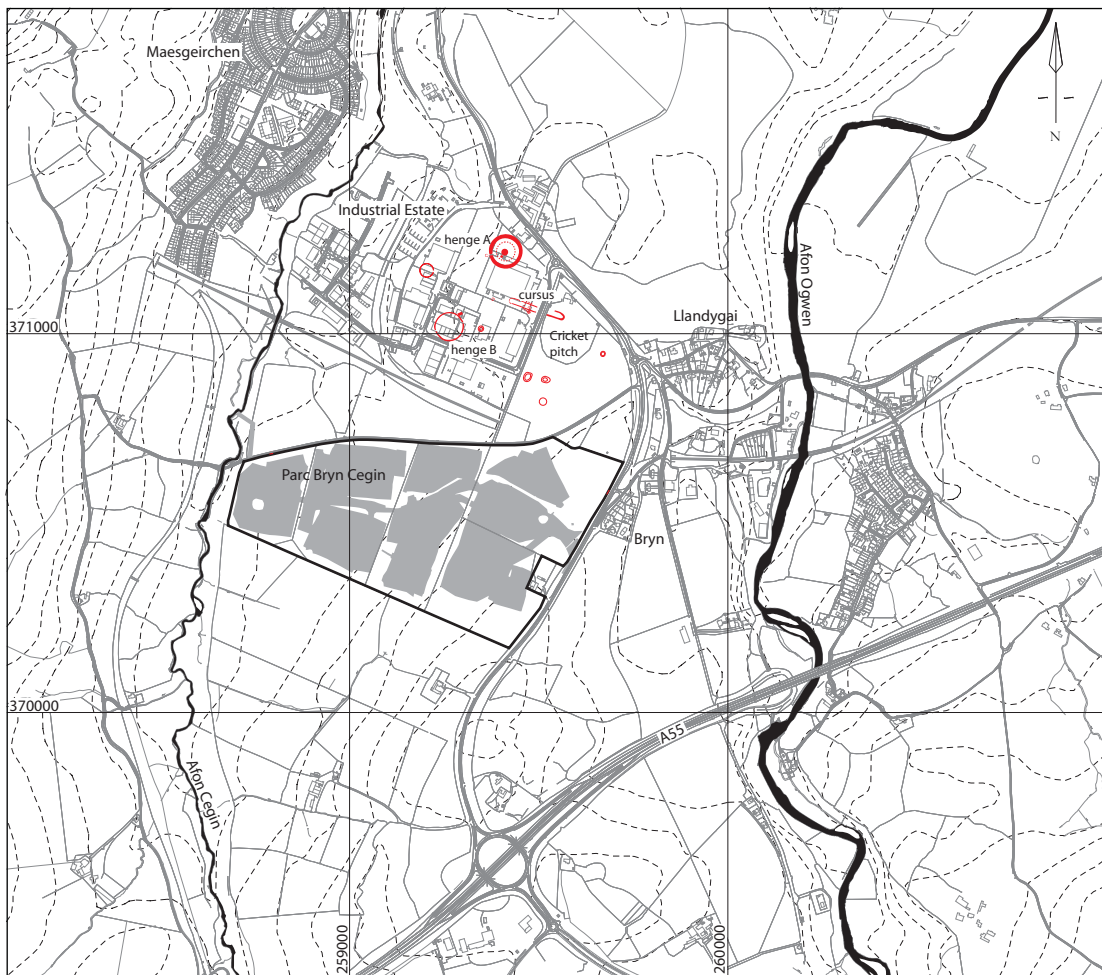
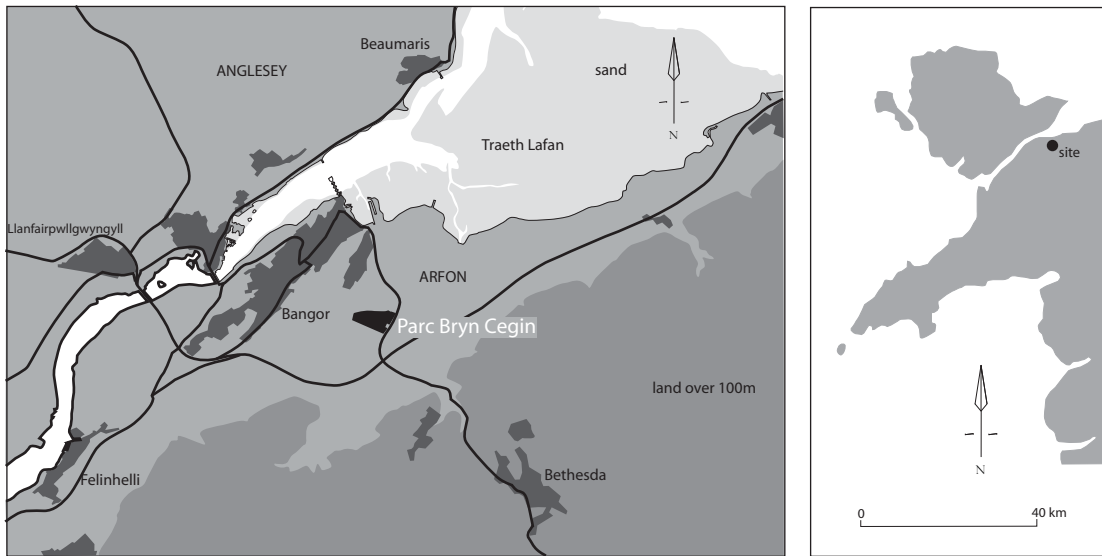


Fig. 1: Location of Parc Bryn Cegin (hengages and related features dug by Christopher Houlder shown in red)



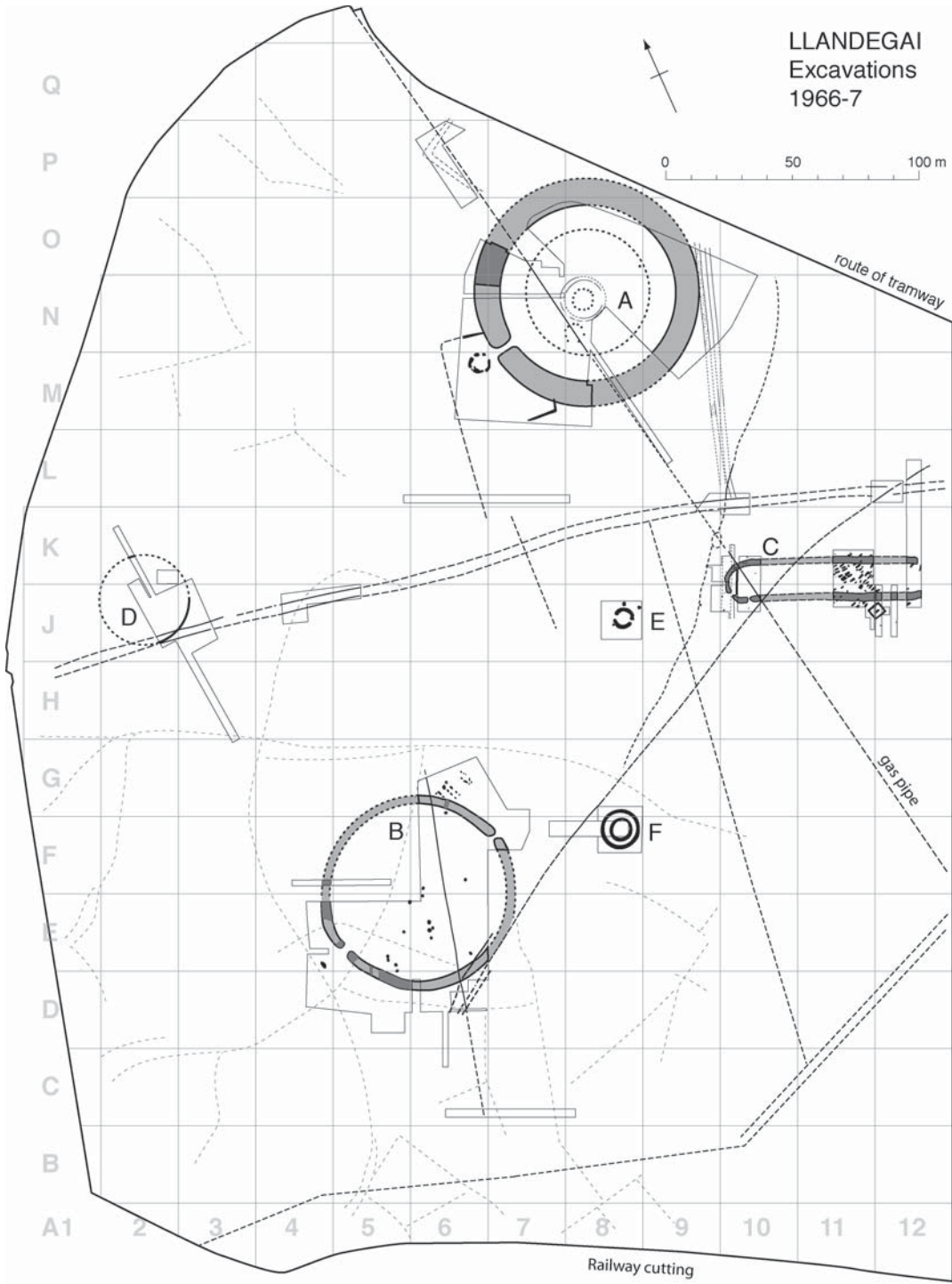
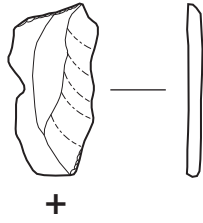
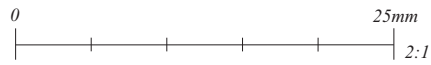
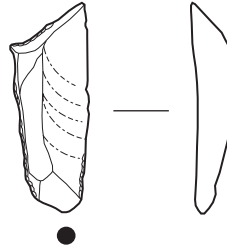


Fig 3. Plan of the excavations carried out at Llandygai by Christopher Houlder in 1966-67 (reproduced by kind permission of David Longley)

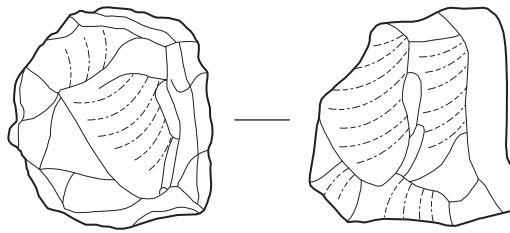
SF979.2.  
From pit 6034 in Pit Group VI



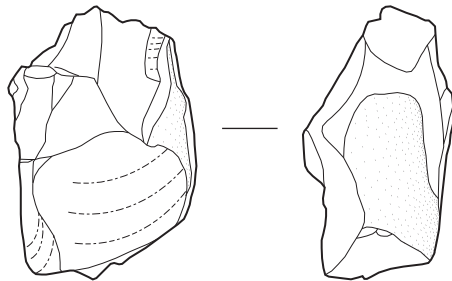
SF1228.  
From posthole 9437



SF701.  
From natural fissure 4312



SF693.  
Unstratified from trench 8



- |   |                                    |
|---|------------------------------------|
| + | Position of bulb, present          |
| ● | Position of bulb, removed          |
| ○ | Probable position of bulb, present |

Figure 4. Mesolithic worked flint: blade cores from near roundhouse E (SF 701) and trench 8 (SF 693); microliths from pit group VI (SF 979.2) and from a posthole in the roundhouse settlement (SF 1228)

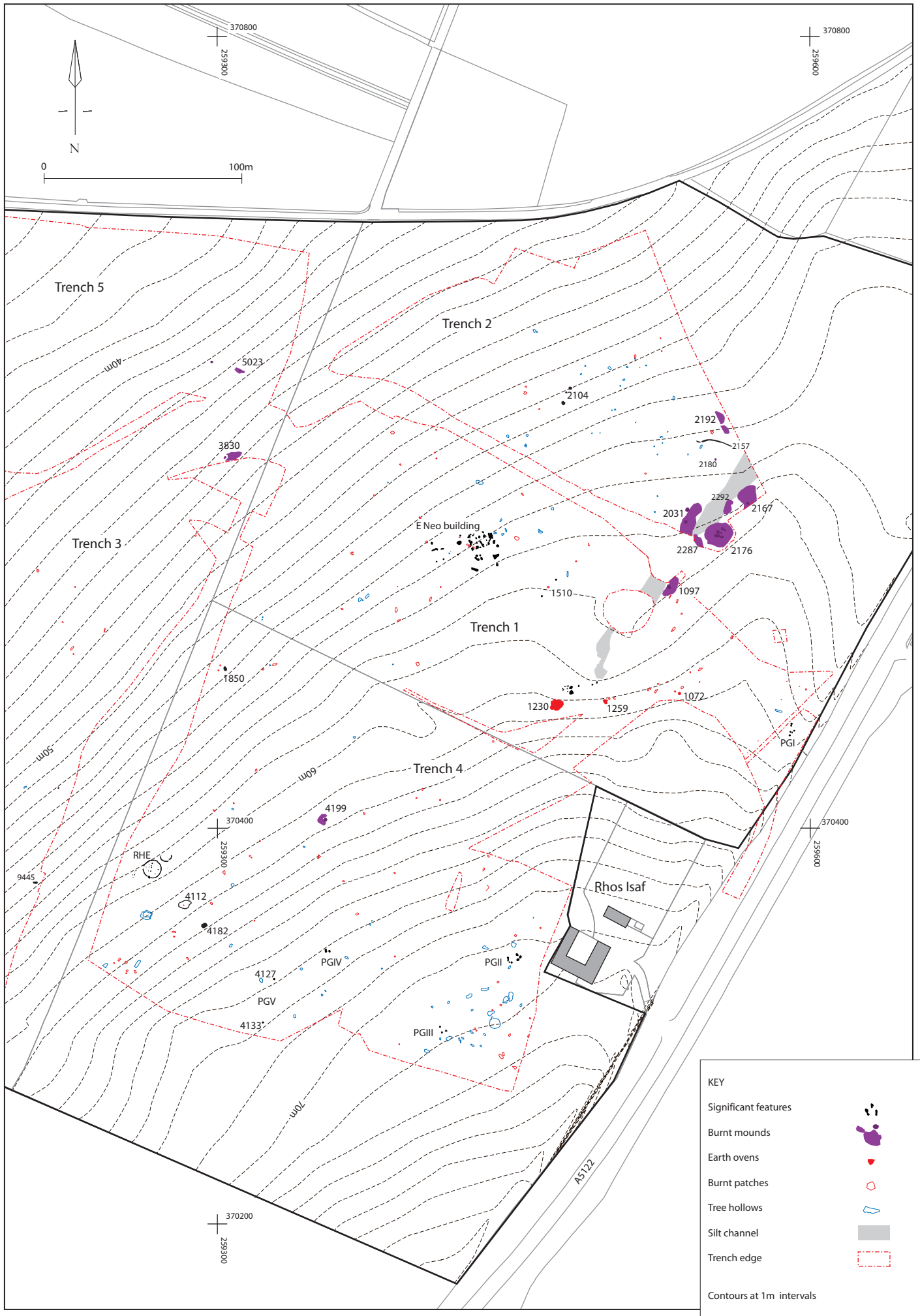


Fig 5. Prehistoric and Romano-British features in the eastern half of the site



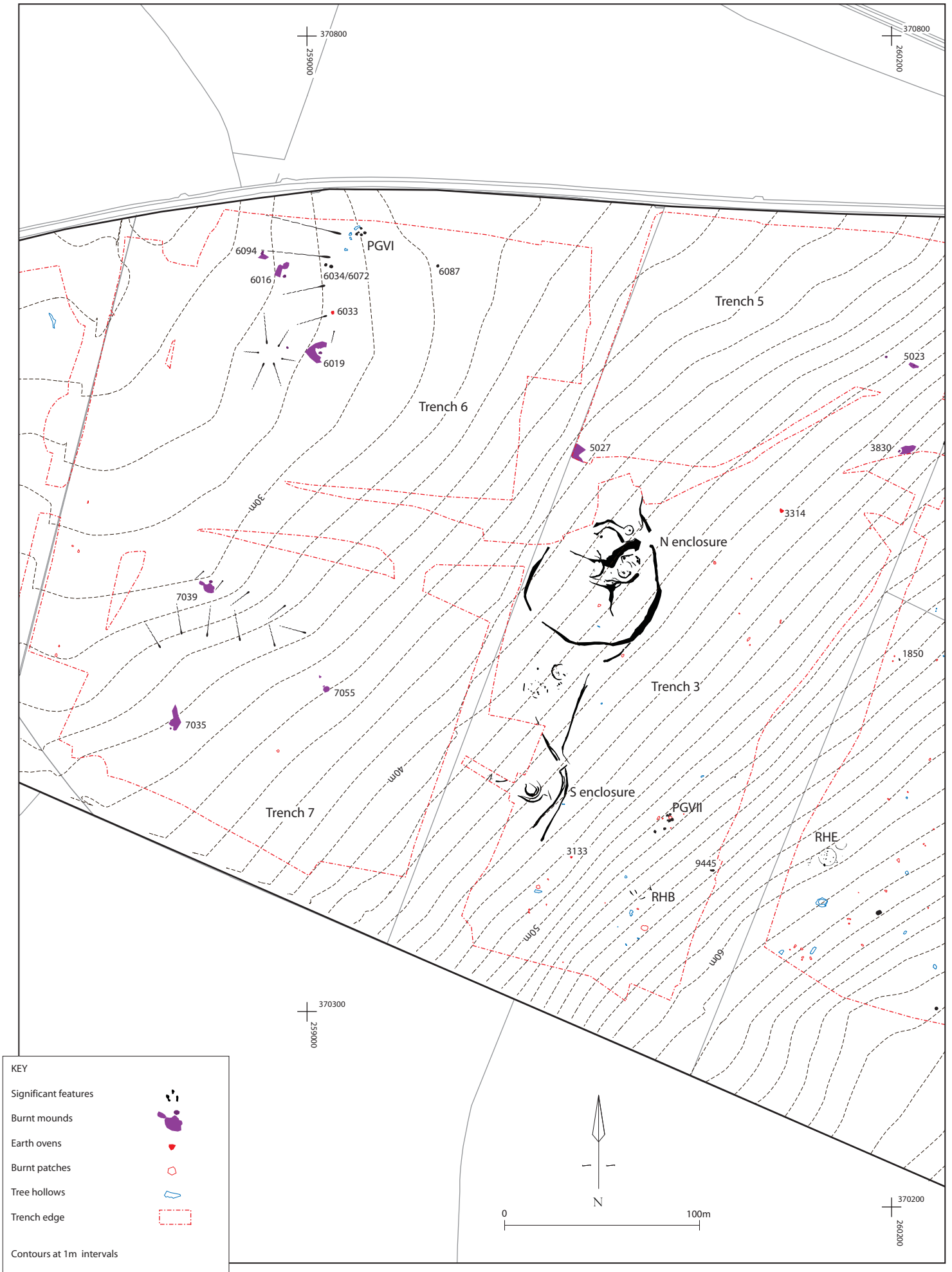


Fig 6. Prehistoric and Romano-British features in the western half of the site

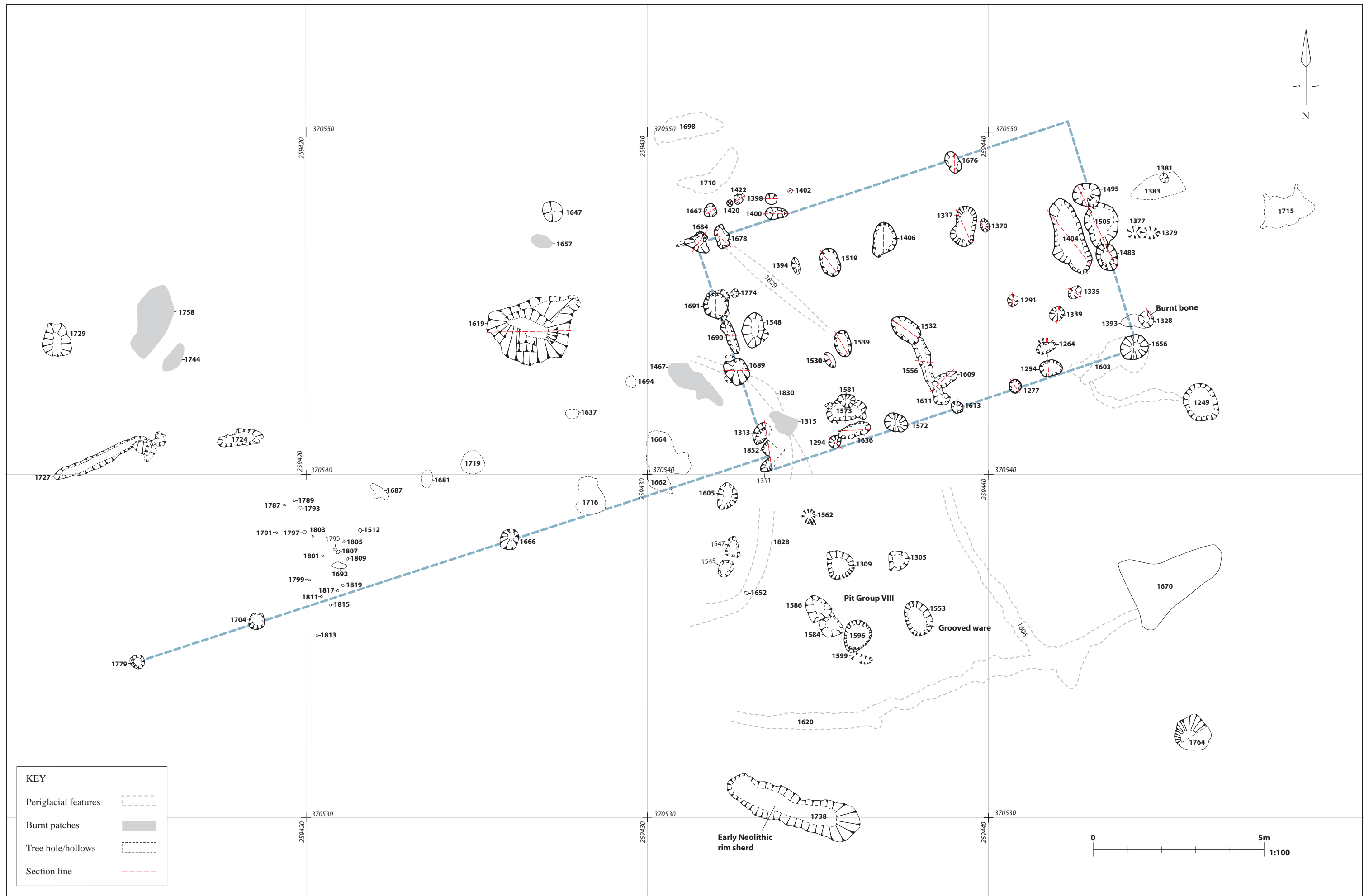
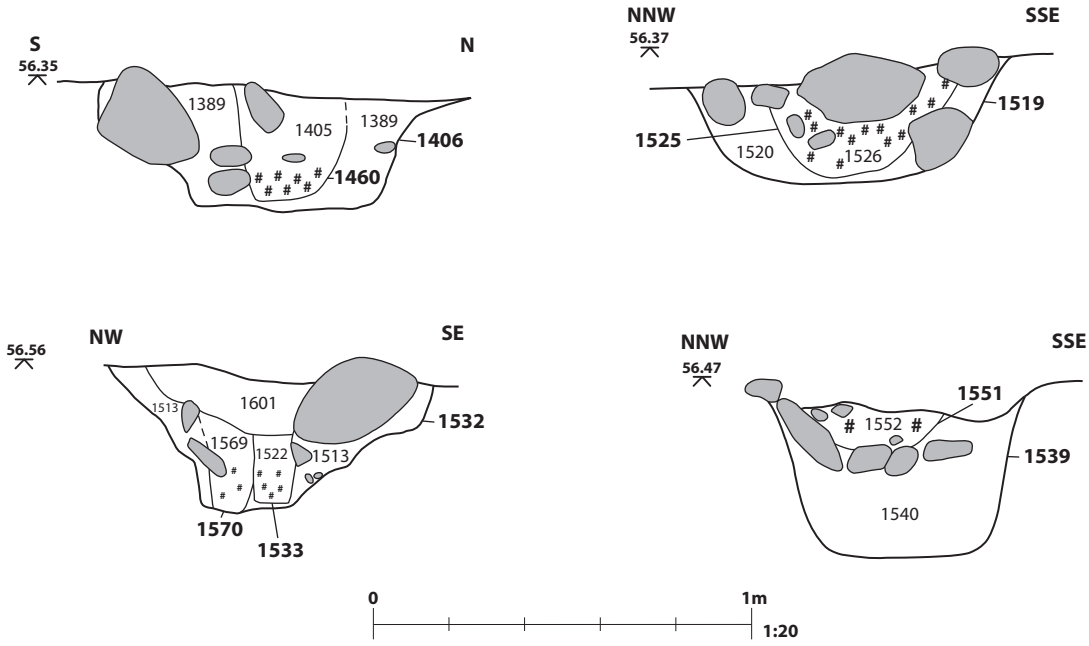


Figure 7. Plan of Early Neolithic building and surrounding features in trench 1



**Aisle Posts**



**Gable Posts and Gable Slots**

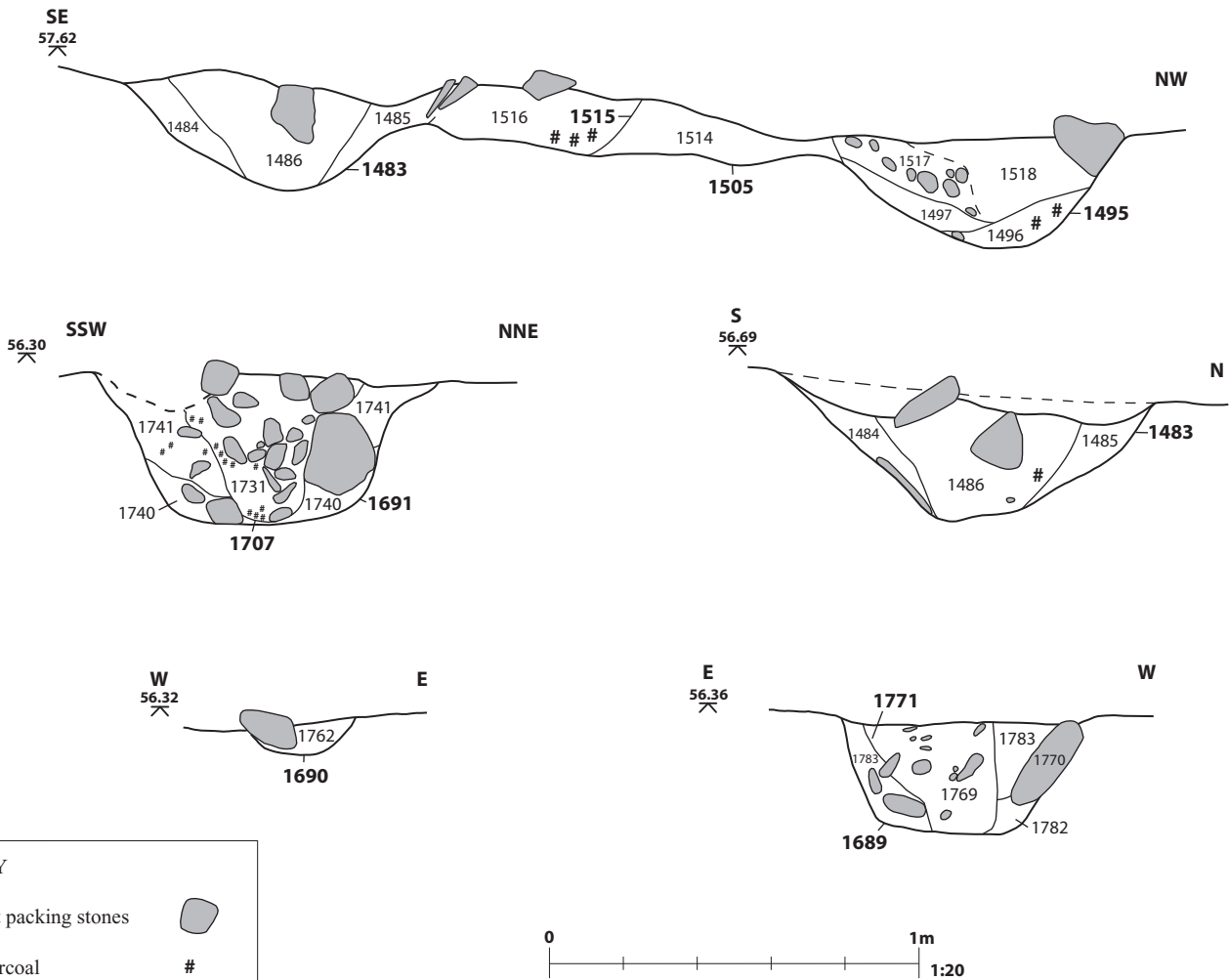
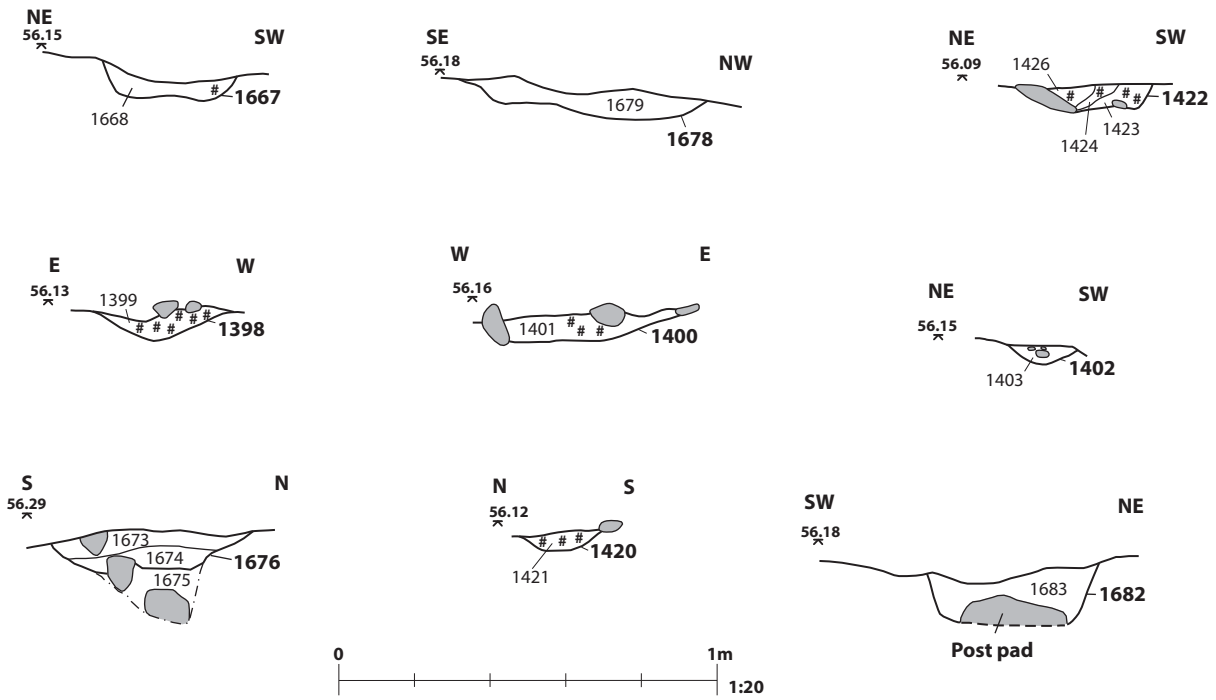


Figure 9. Sections of aisle and gable end postholes in the Early Neolithic Building

North wall



South wall

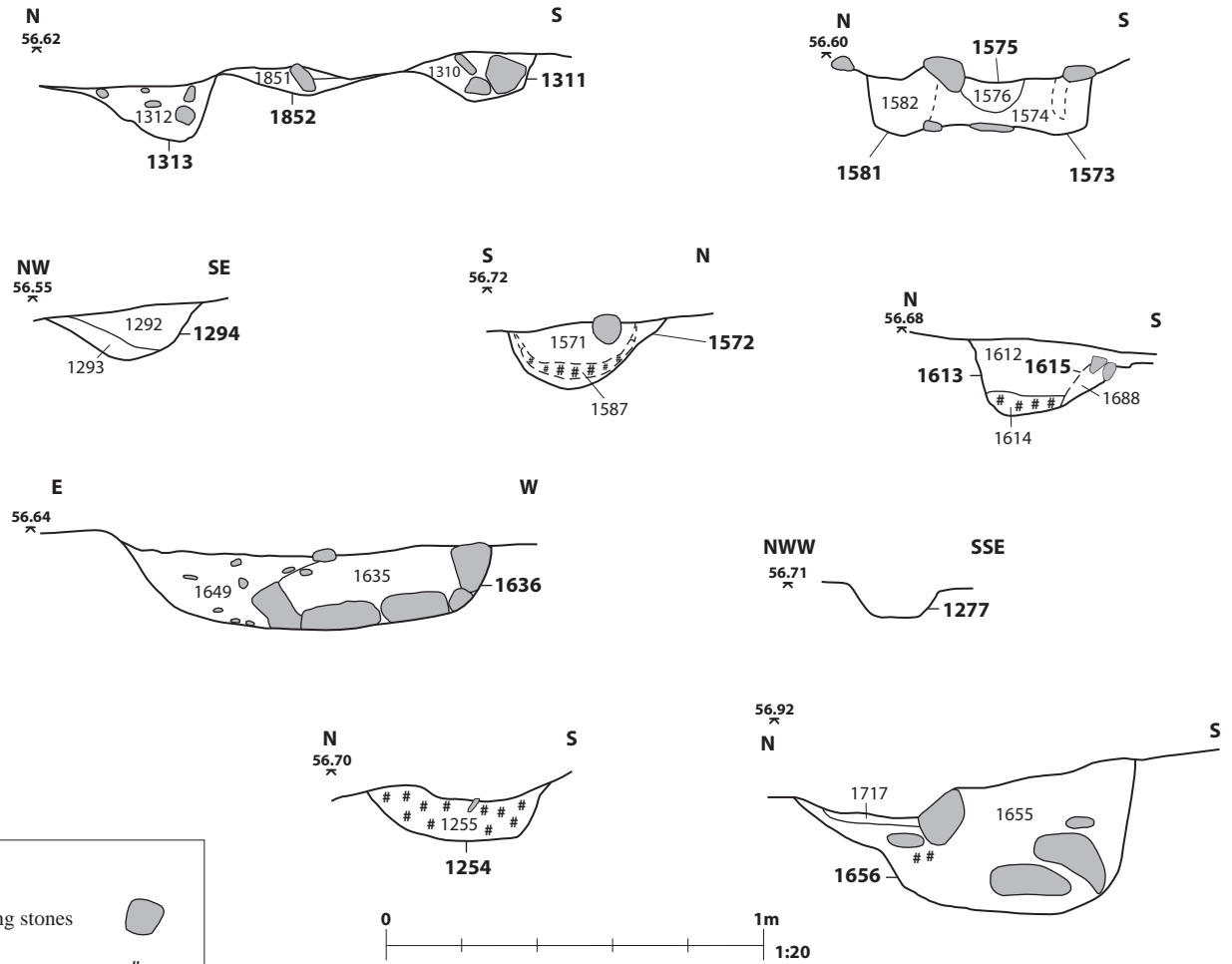
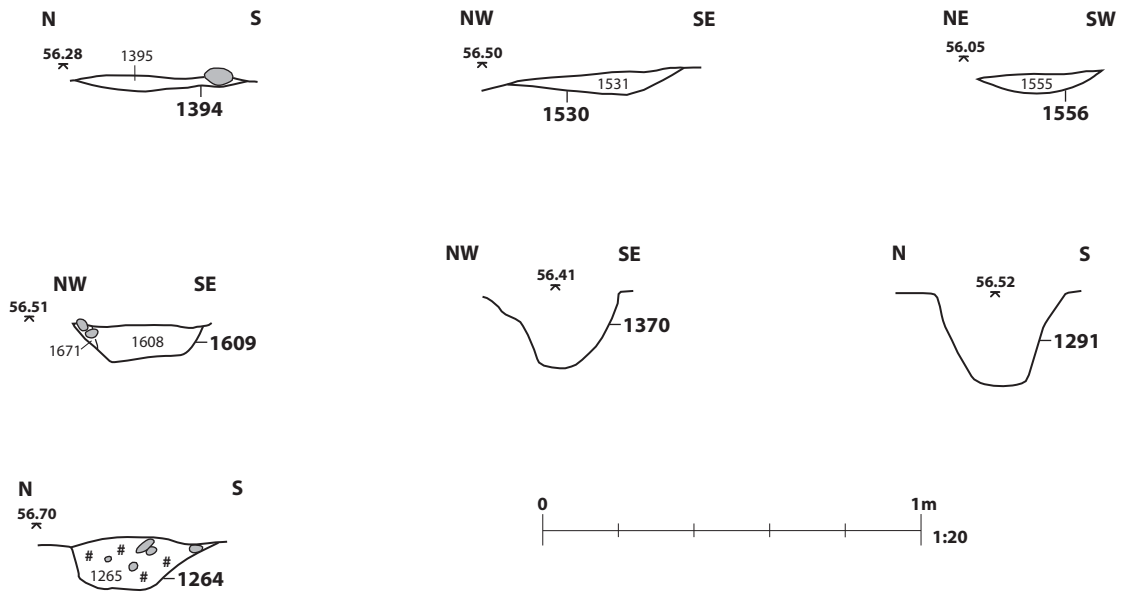


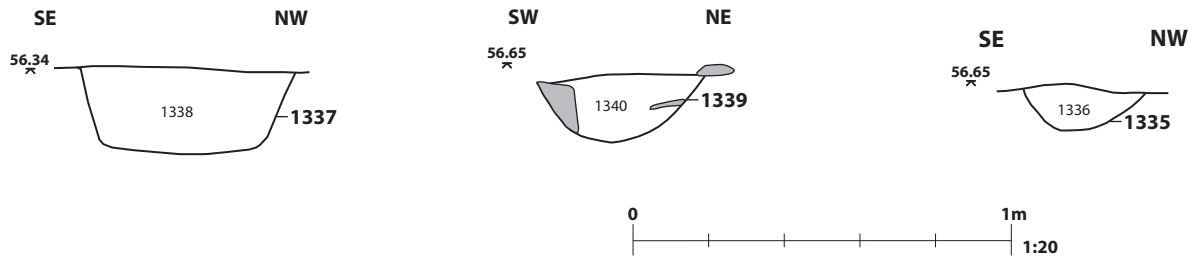
Figure 10. Sections of postholes along south and north walls of the Neolithic building



**Partitions**



**Other internal features**



**Post trenches**

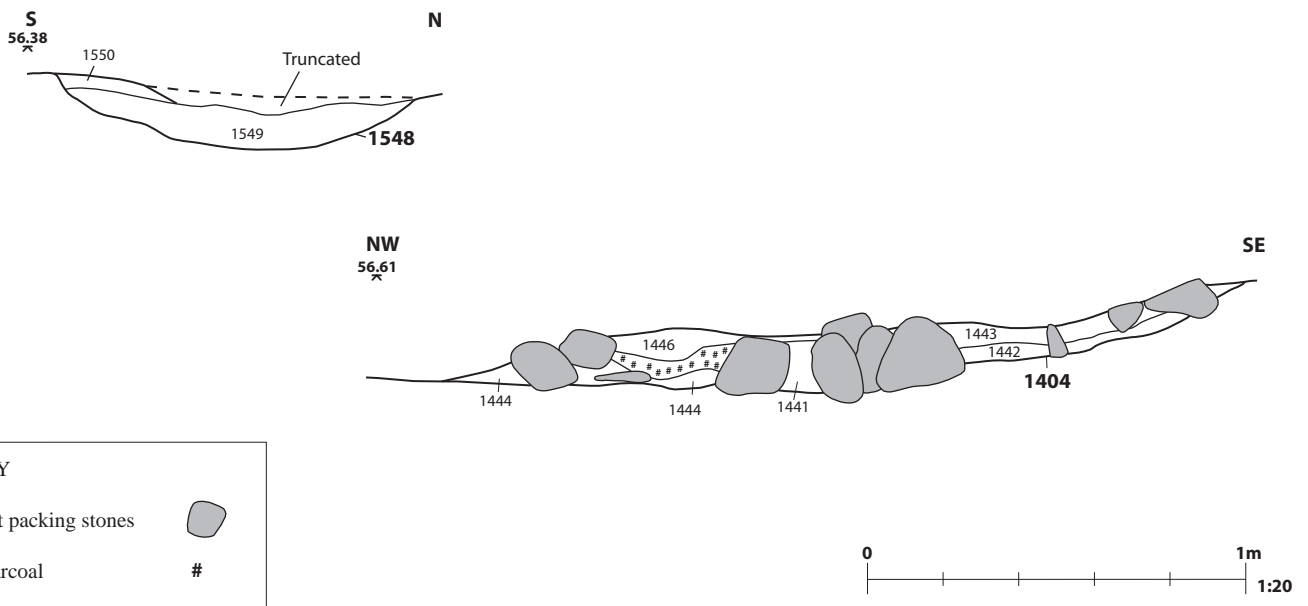
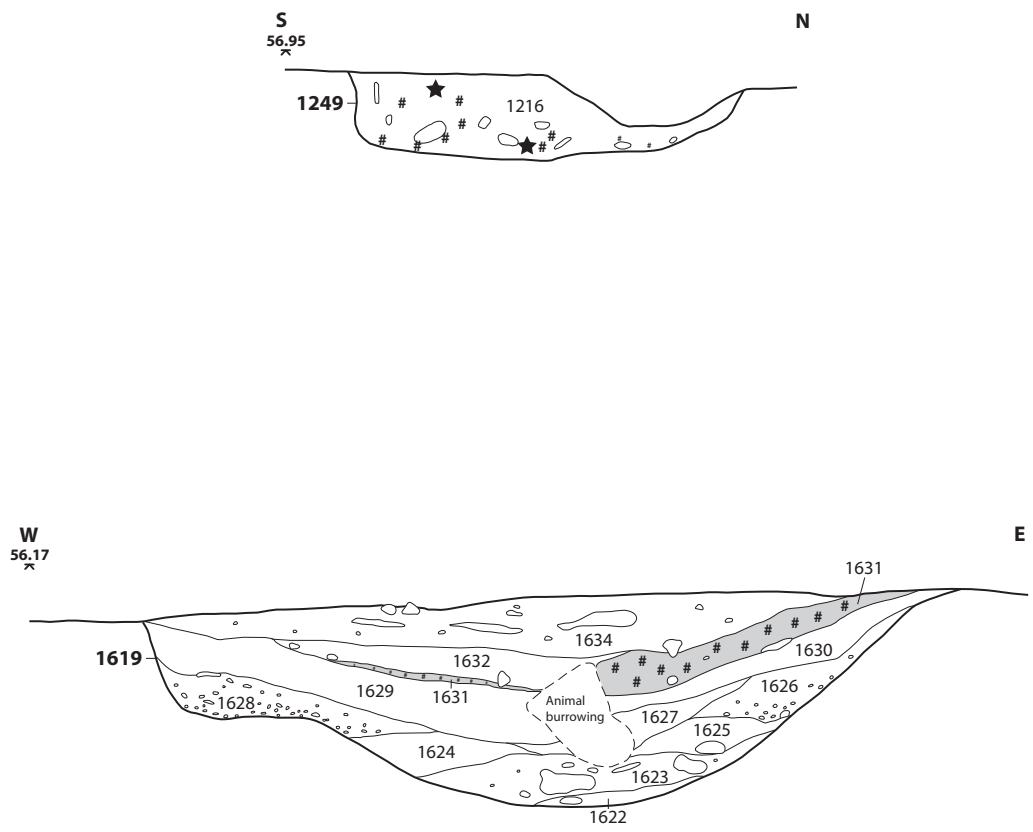


Figure 11. Sections of internal partitions and other internal features in the Early Neolithic building



KEY	
Neolithic pottery	★
Charcoal	#
Charcoal rich	<span style="border: 1px solid black; padding: 2px;"># #</span>

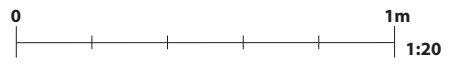


Figure 12. Sections of pits 1249 and 1619

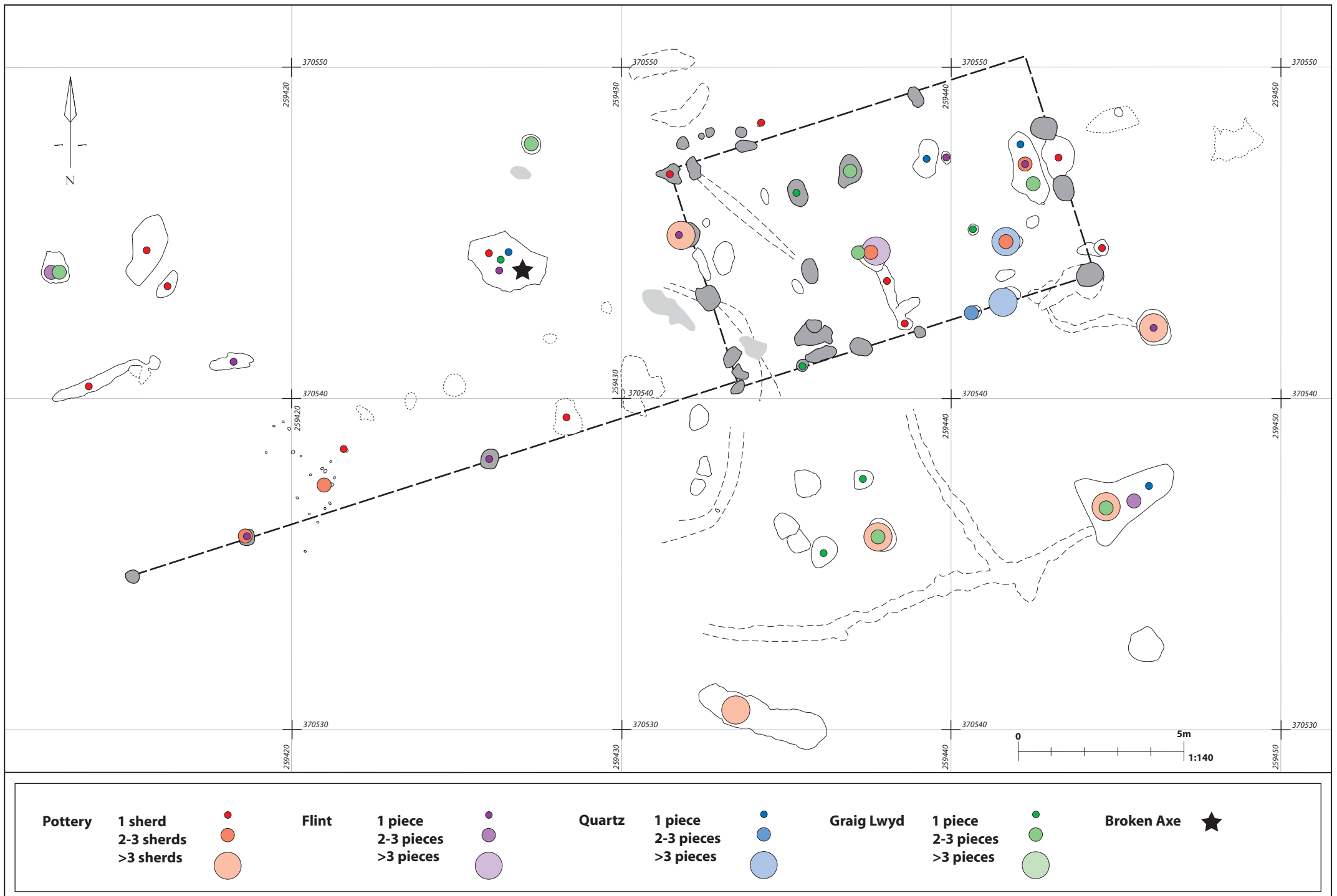
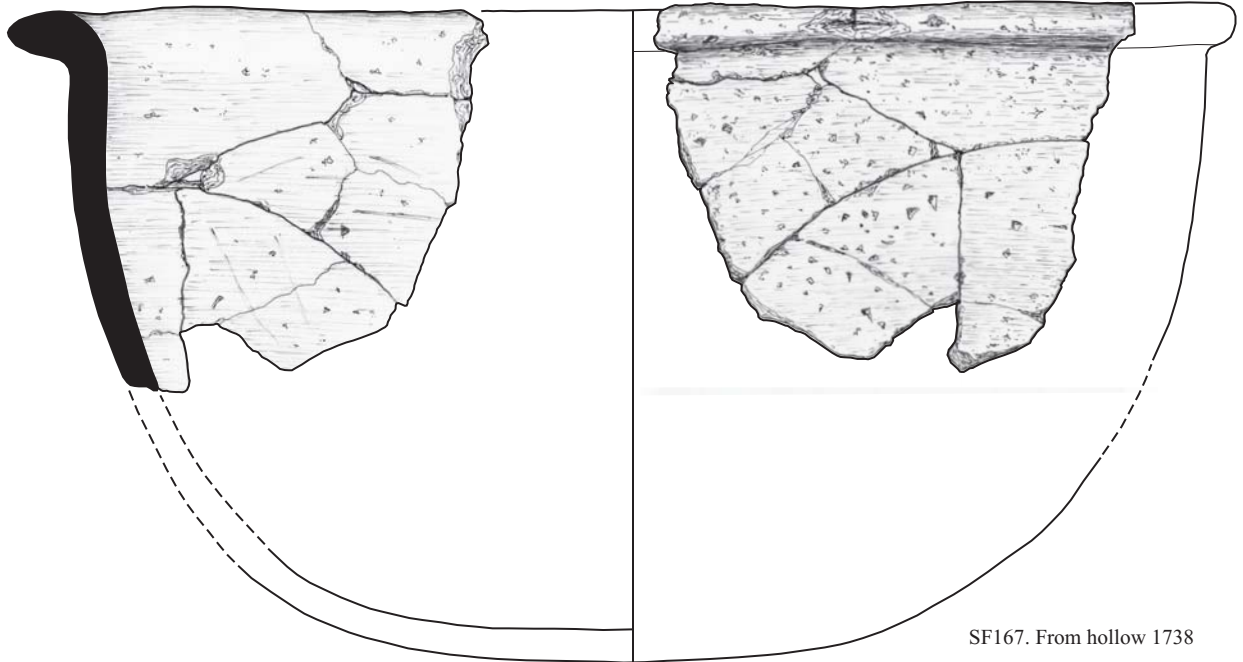
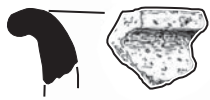


Figure 13. Distribution of finds over Early Neolithic building plan.



SF167. From hollow 1738



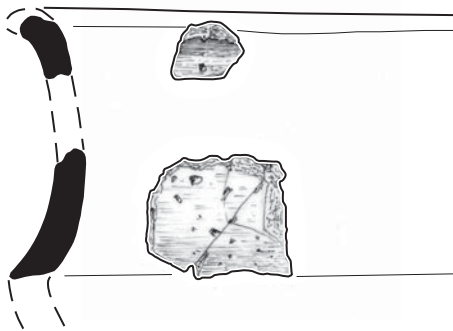
SF 79. From post trench 1404



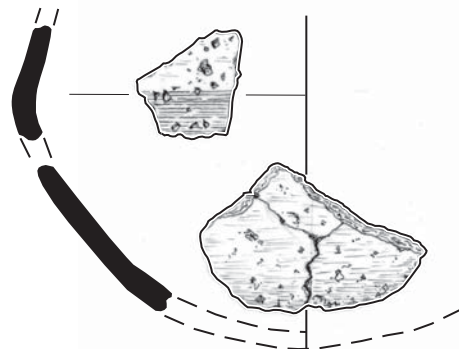
Four sherds forming part of SF130. From OGS 1670



SF179. From burnt area 1744



SF84 and 77. From post hole 1406



SF149 from OGS 1670 and SF134 from an animal burrow 22m to the west

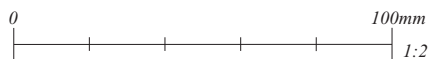


Figure 14. Pottery from Early Neolithic Building and surrounding area, all Irish Sea vesicular ware

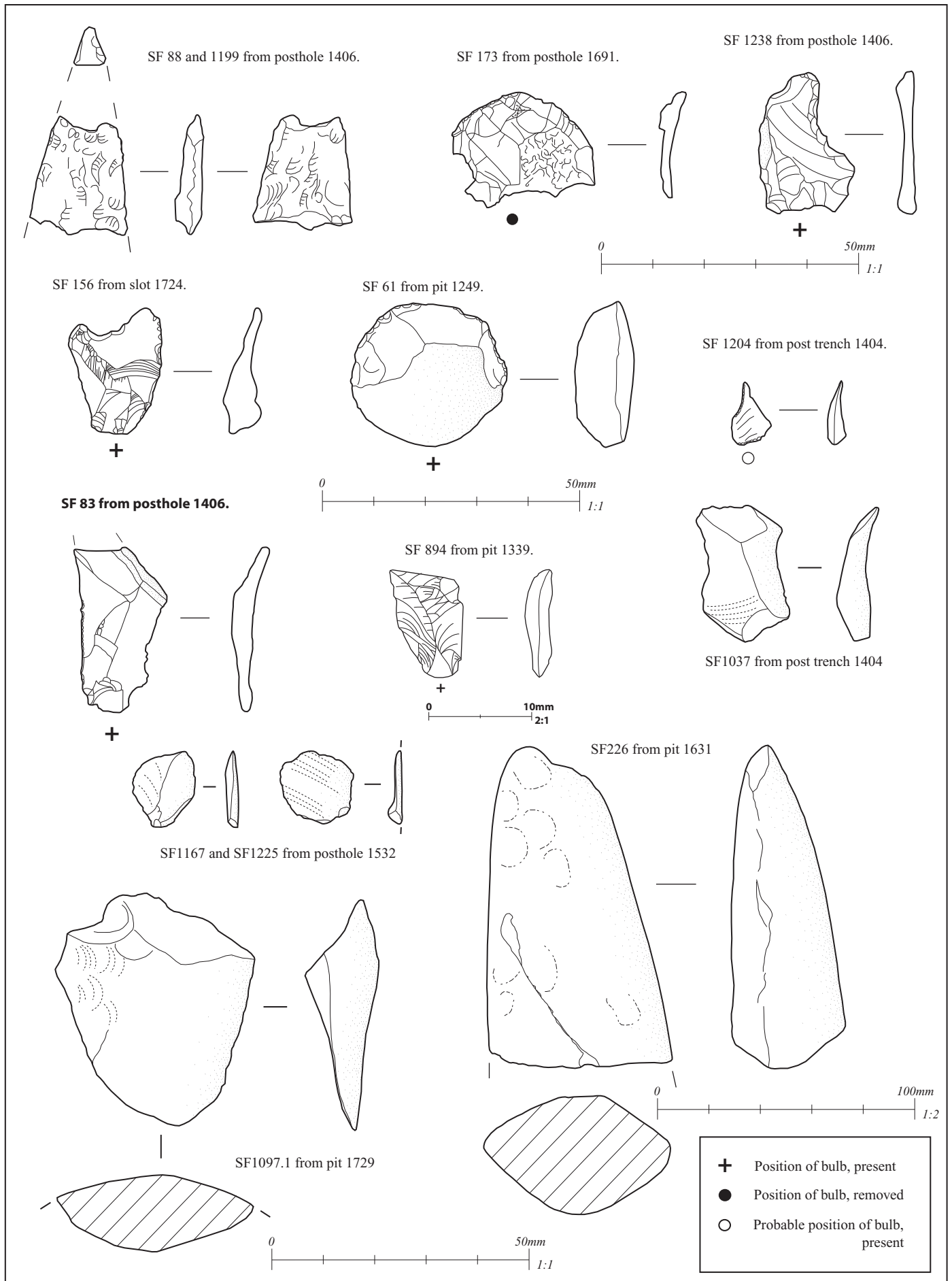
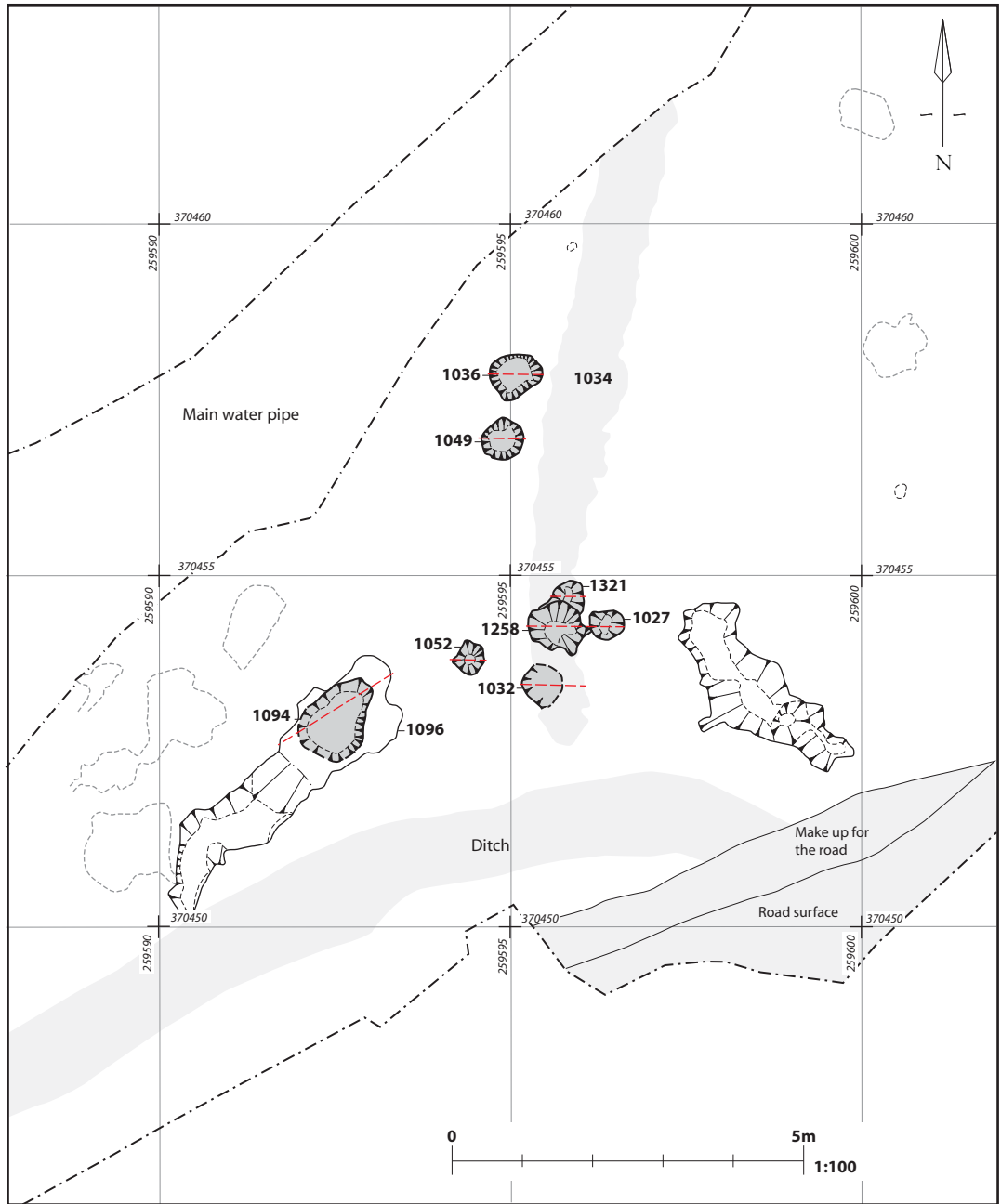


Figure 15. Lithic artefacts from the Early Neolithic Building and surrounding area. Flint: SF88 (arrowhead), SF173 (burnt scraper), SF1238 (spokeshave), SF156 (concave scraper), SF61 (burnt scraper), SF1204 (piercer), and SF83 (hafted blade). Graig Lwyd: SF1037, SF1167, SF1225 (reduction flakes with polish), SF1097.1 (polished axe fragment). Crystal quartz: SF894 (retouched flake).








KEY	
Pit Group I	
Animal burrows	
Section line	

Figure 16. Plan of Pit Group I in trench 1 (see Fig. 5 for location).

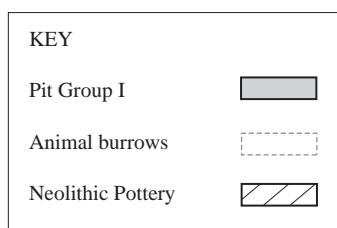
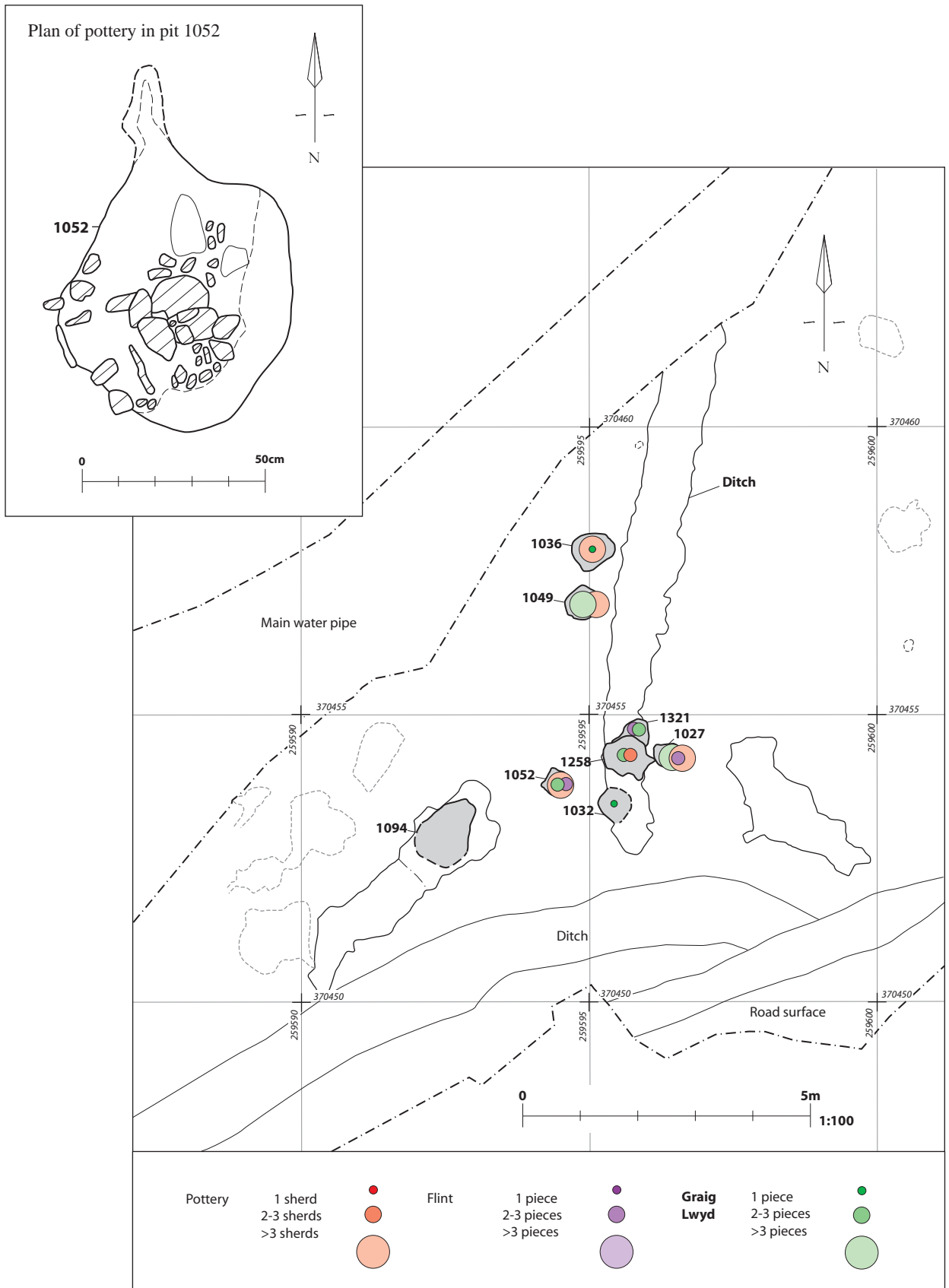
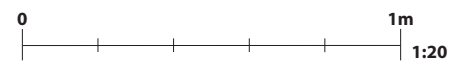
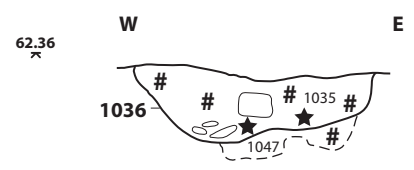
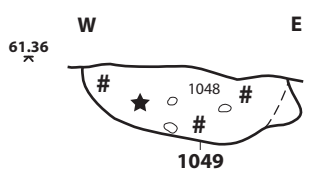
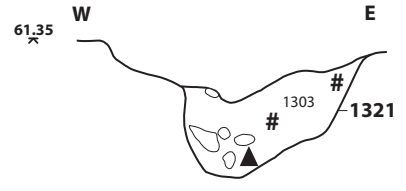
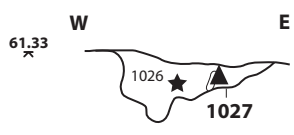
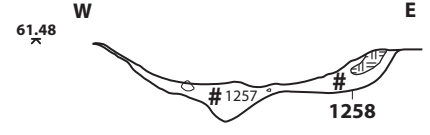
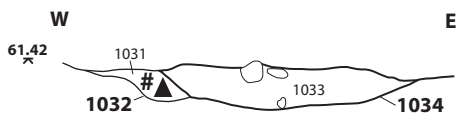
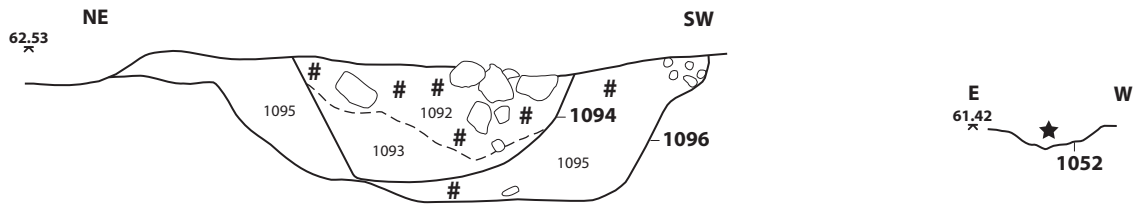


Figure 17. Distribution of finds in Pit Group I.



KEY	
Neolithic pottery	★
Graig Lwyd	▲
Charcoal	#

Figure 18. Sections of Pit Group I

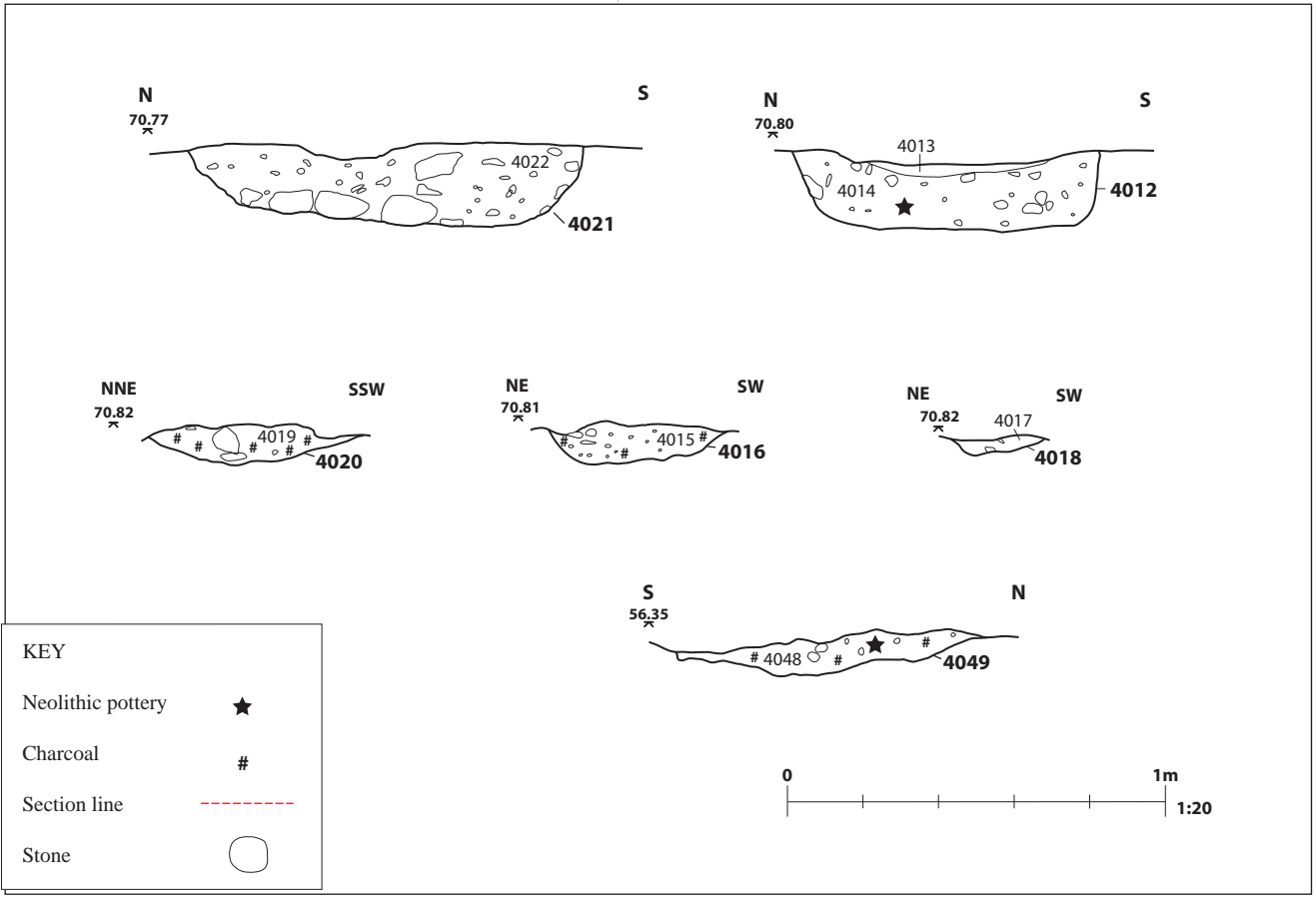
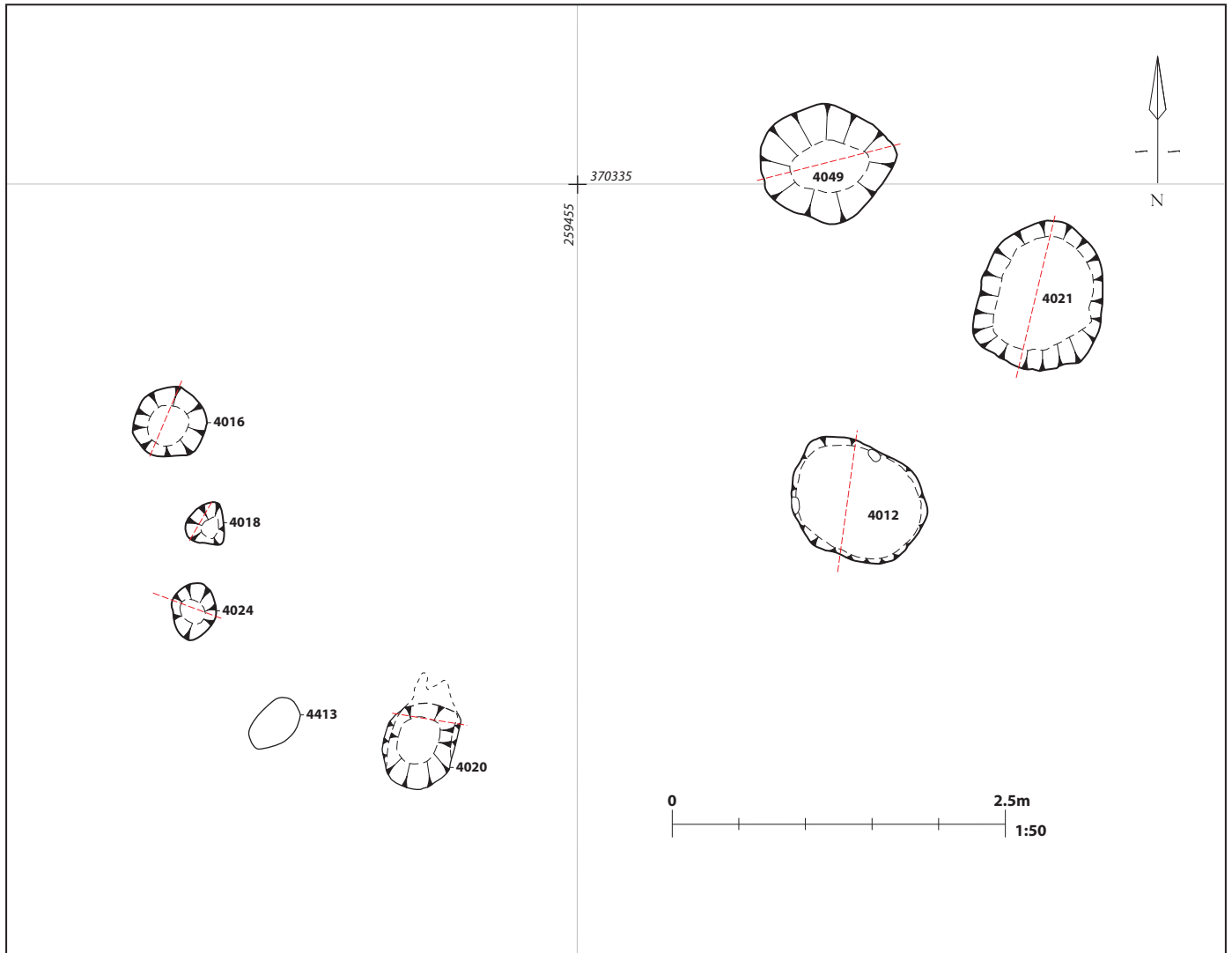


Figure 19. Plan and sections of Pit Group II in trench 4 (for location see Fig. 5)

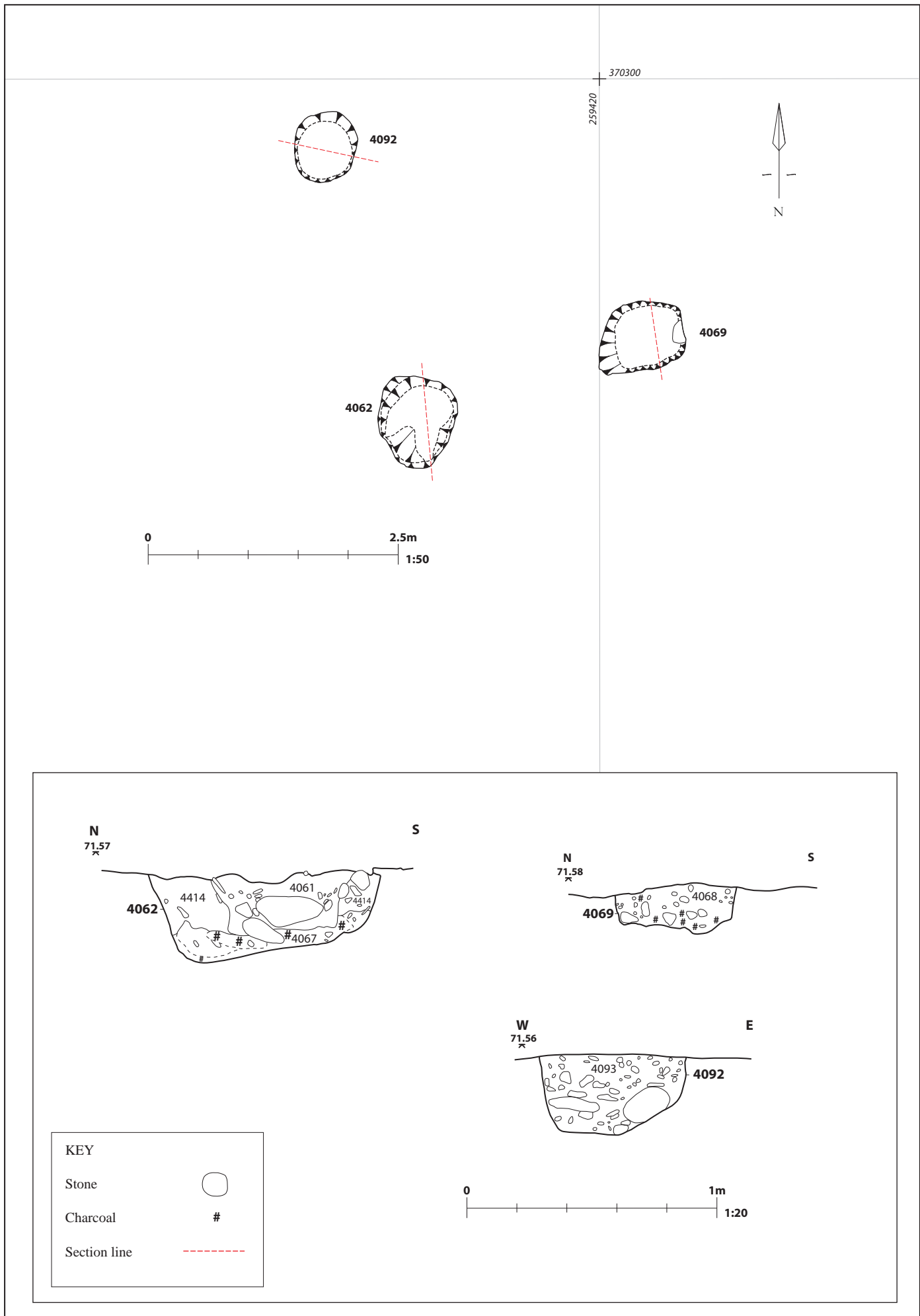


Figure 20. Plan and sections of Pit Group III in trench 4 (for location see Fig. 5)



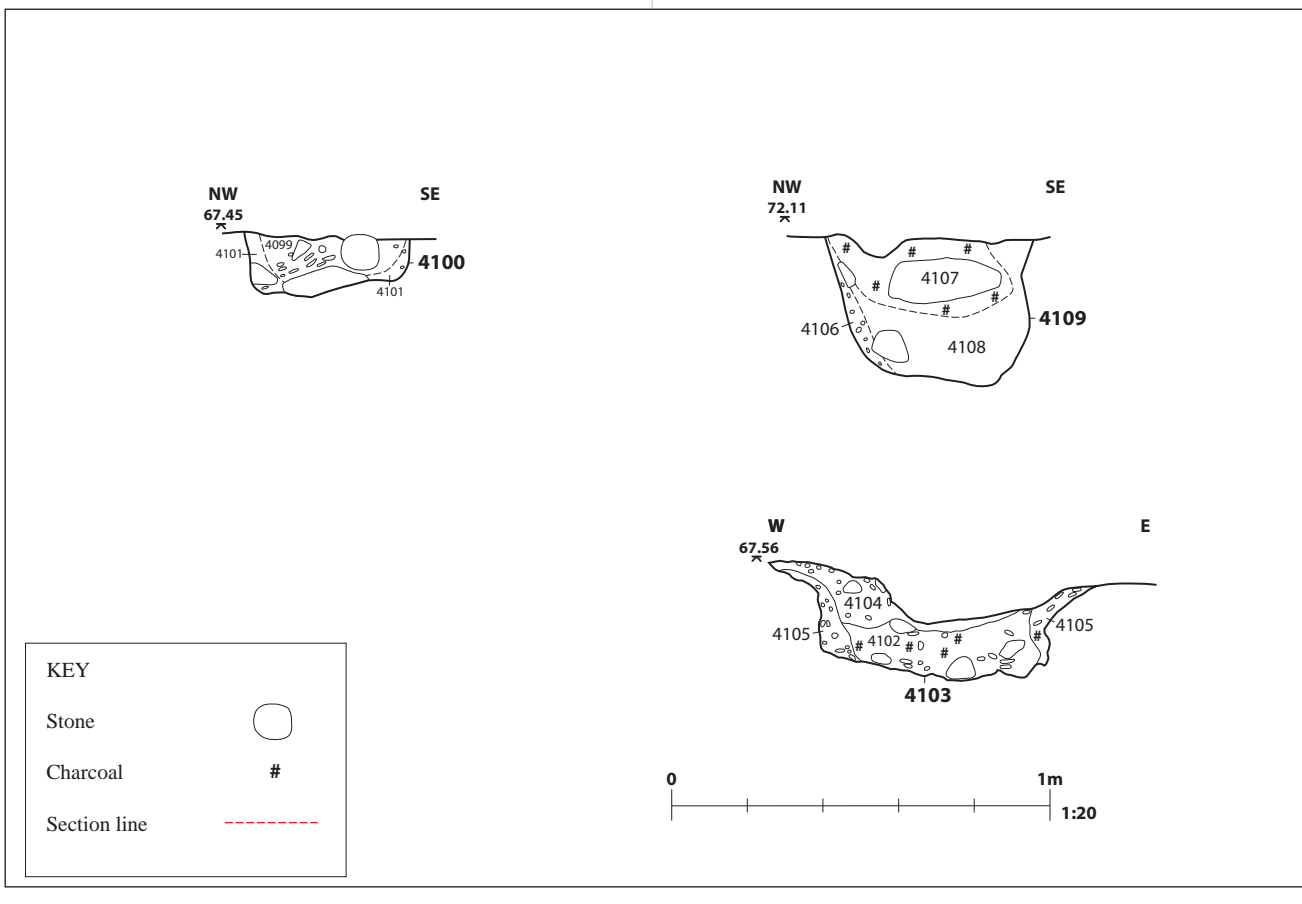
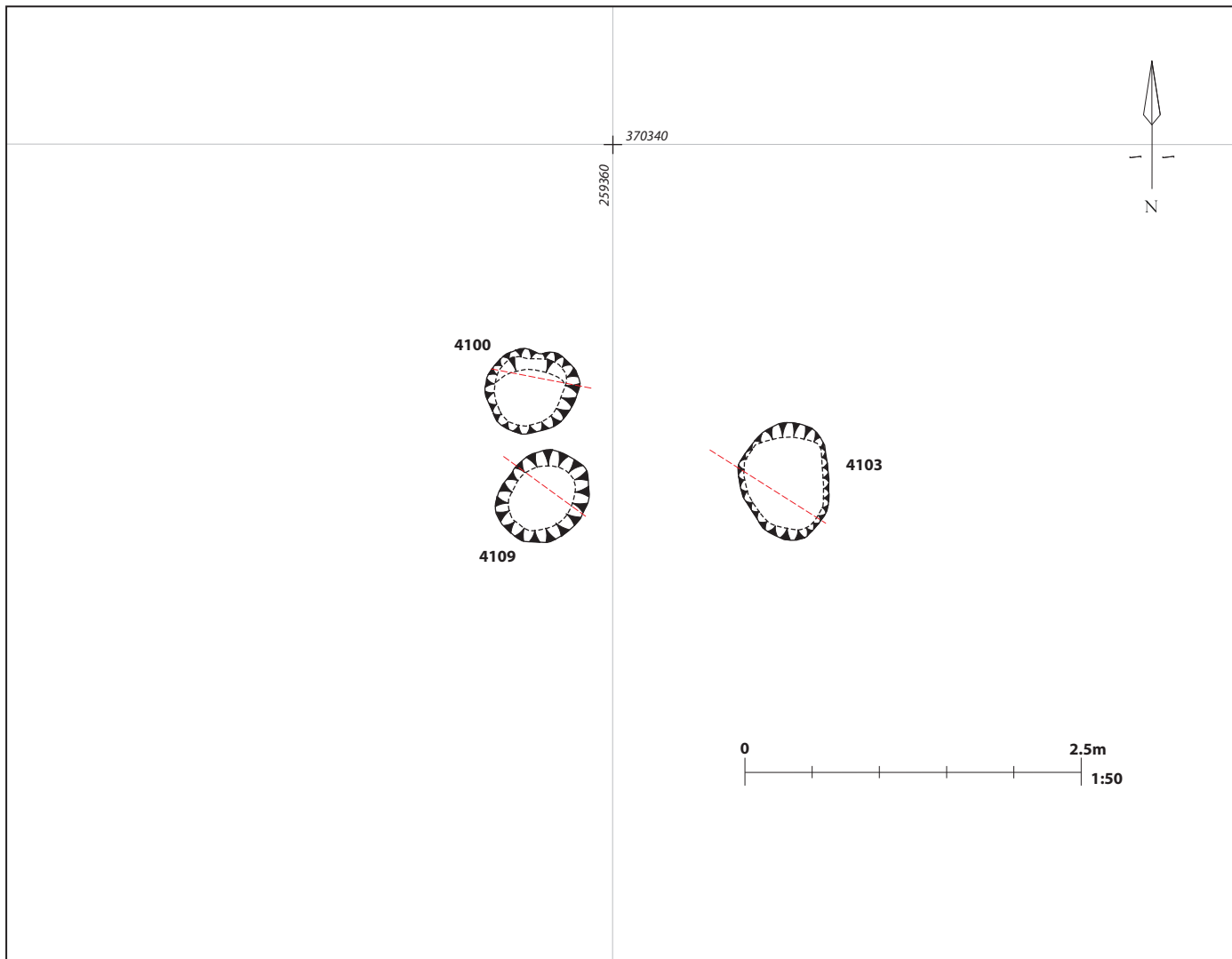


Figure 21. Plan and sections of Pit Group IV in trench 4 (for location see Fig. 5)

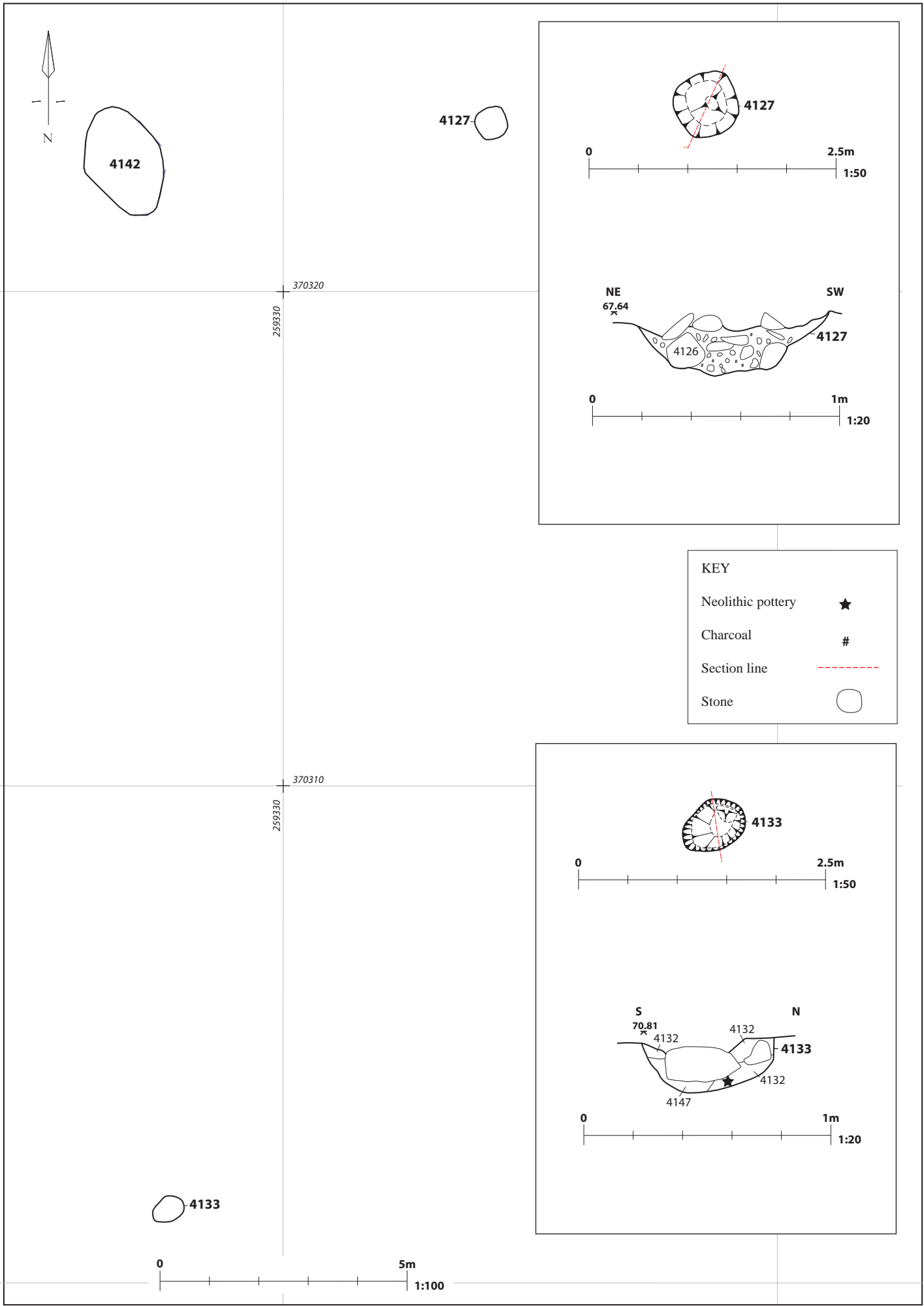


Figure 22. Plan and sections of Pit Group V in trench 4 (for location see Fig. 5)

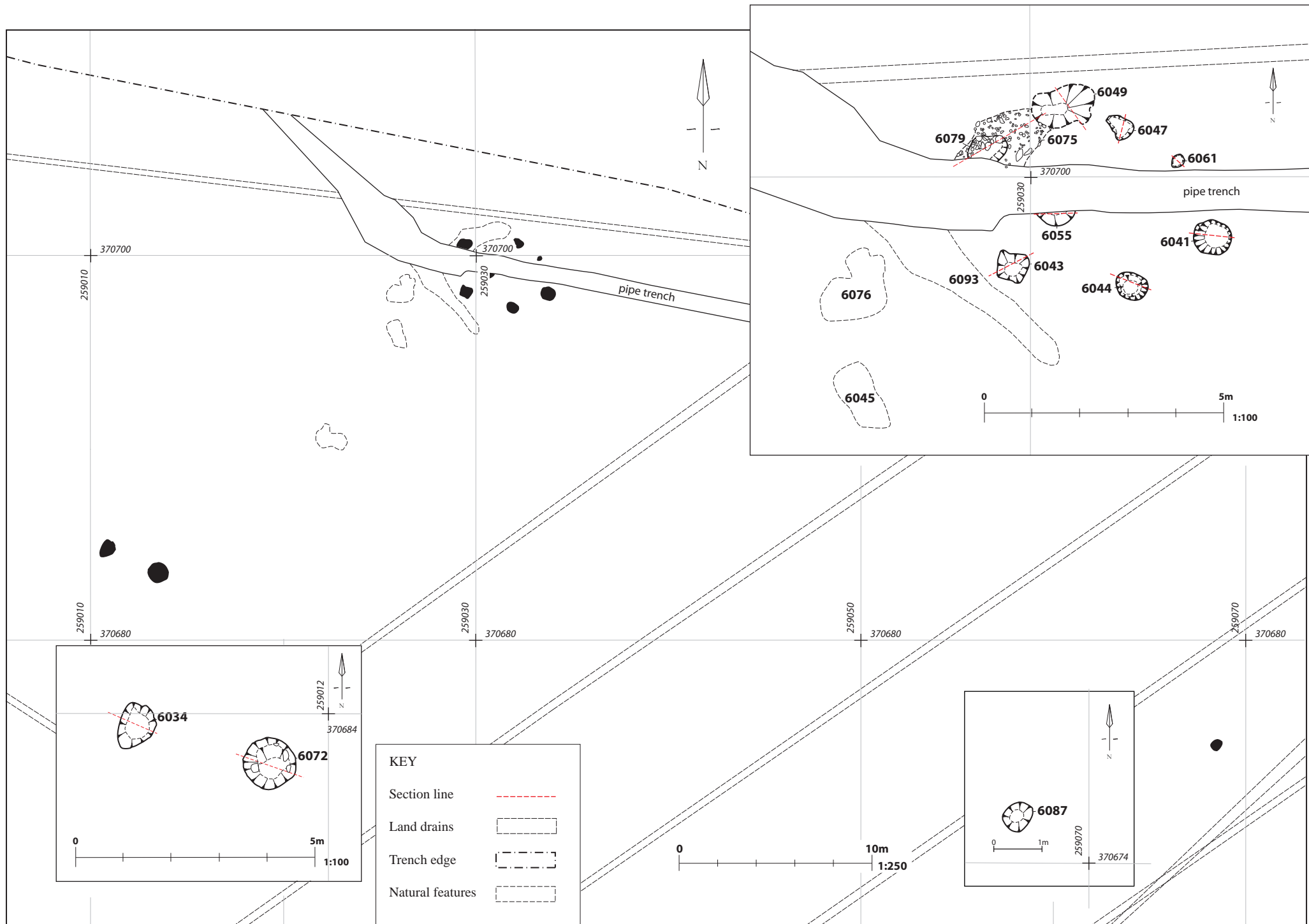


Figure 23. Plan of Pit Group VI in trench 6 (for location see Fig. 6)

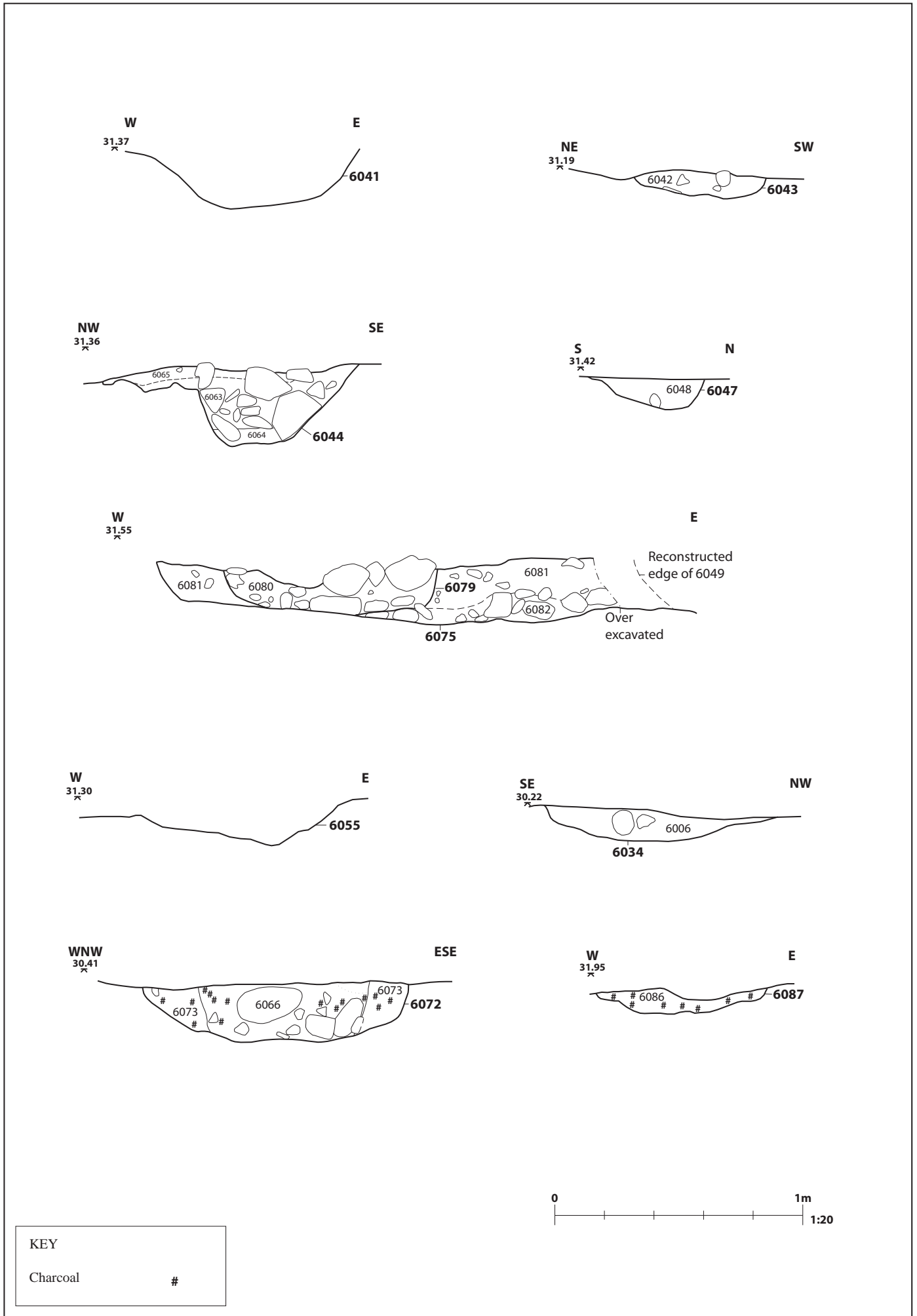


Figure 24. Sections of pit group VI

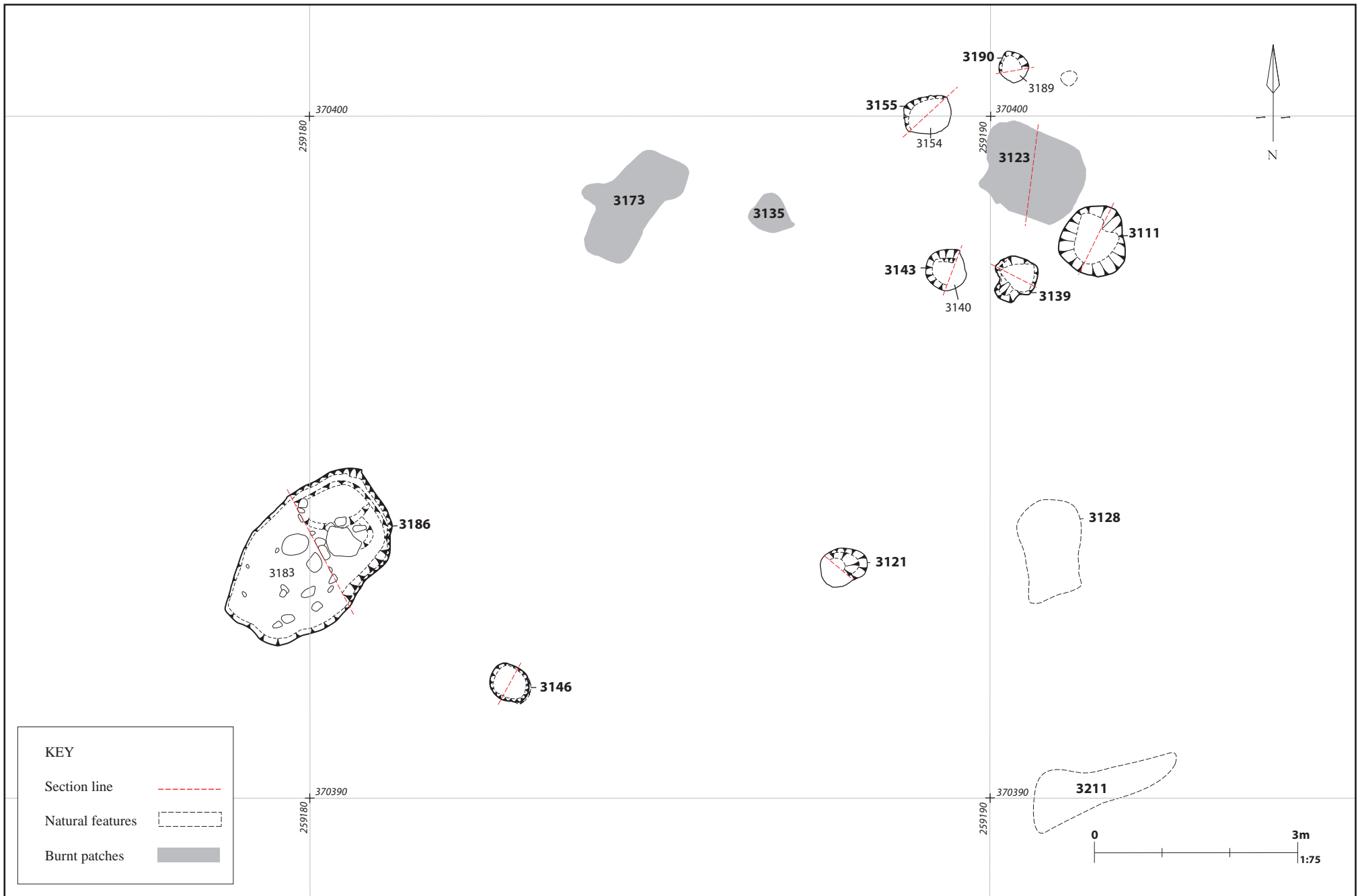
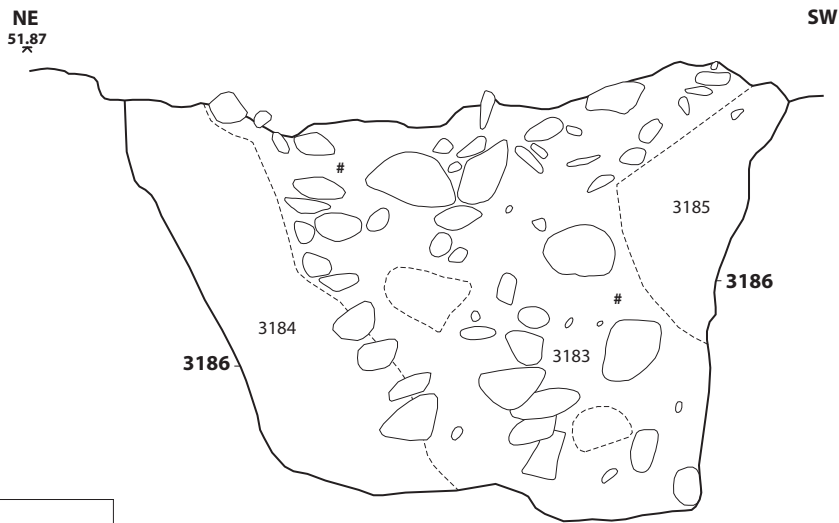
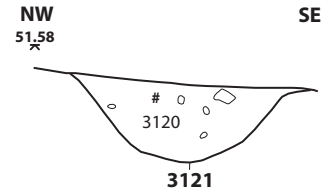
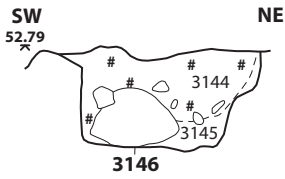
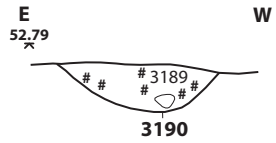
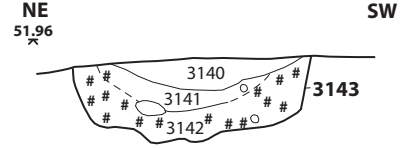
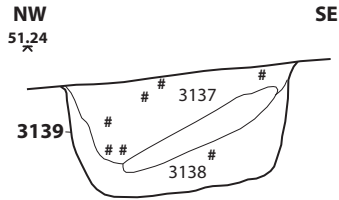
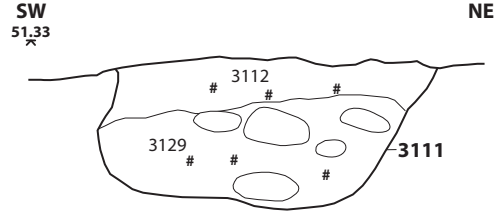
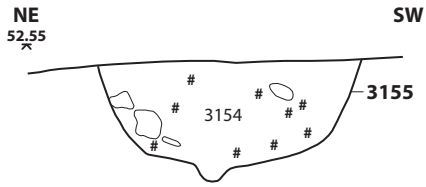




Figure 25. Plan of Pit Group VII in trench 3 (for location see Fig. 6)





**KEY**

Stone 

Charcoal 

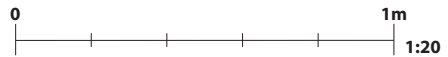


Figure 26. Sections of pits in Pit Group VII and the large post-medieval pit 3186

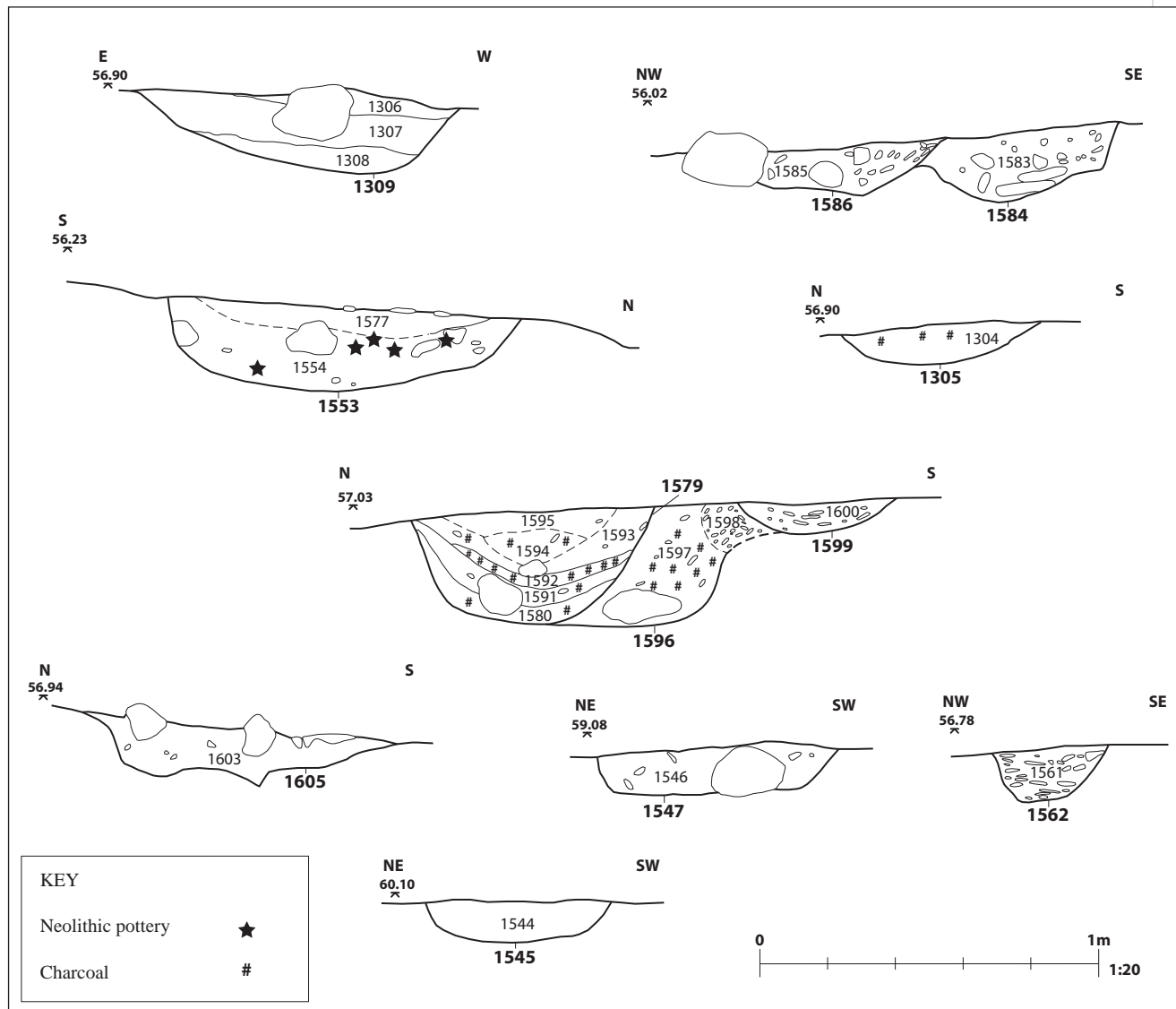
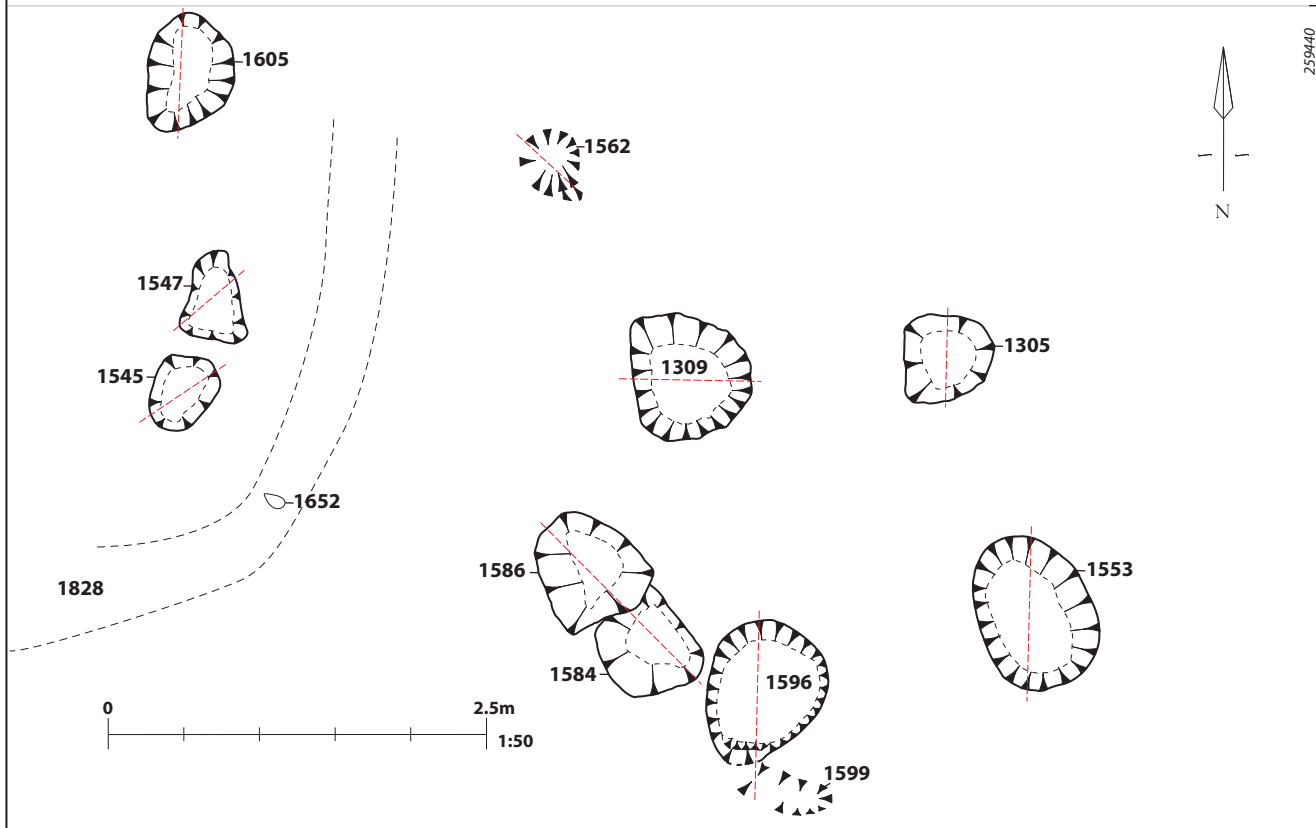


Figure 27. Plan and sections of Pit Group VIII

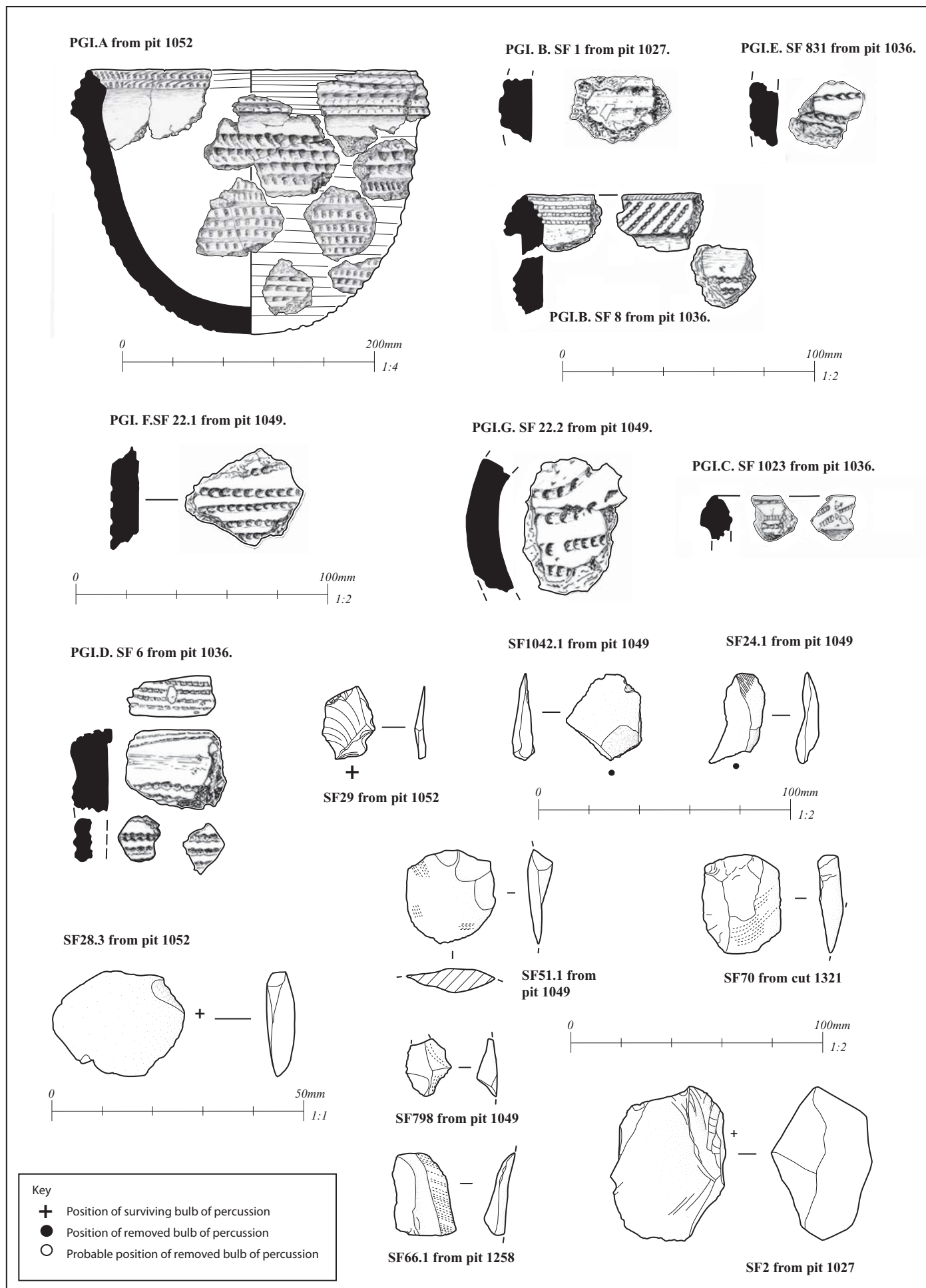
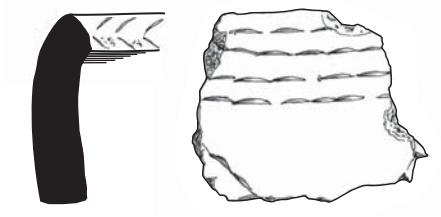
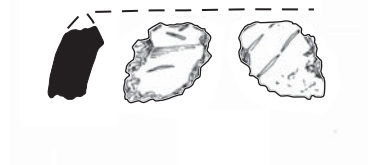


Figure 28. Finds from Pit Group I. Mortlake pottery: PGI.A-F. Graig Lwyd: SF24.1, SF28.3, SF51.1, SF66.1, SF798 and SF1042.1 (reduction flakes with polish), SF 2 (a possible axe sharpening tranchet flake), SF70 (polished axe fragment). Flint: SF 29 (flint flake with microlithic truncation).

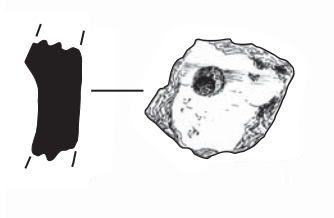
PGII.A.SF 494 from pit 4021.



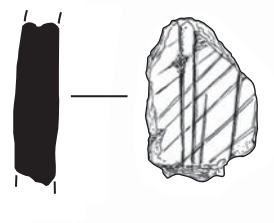
PGII.B. SF 490 from pit 4012.



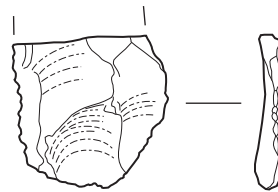
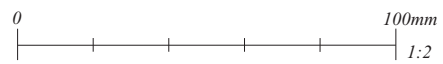
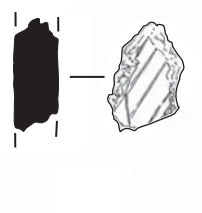
PGII.C. SF 706.1 from pit 4012.



PGII. D.SF 706.1 from pit 4012.



PGII.D. SF 490 from pit 4012.



+

SF1096 from pit 4012



- + Position of bulb, present
- Position of bulb, removed
- Probable position of bulb, present

Figure 29. Finds from Pit Group II. Fengate pottery: vessels PGII.A-D. Flint: broken serrated blade (SF1096)

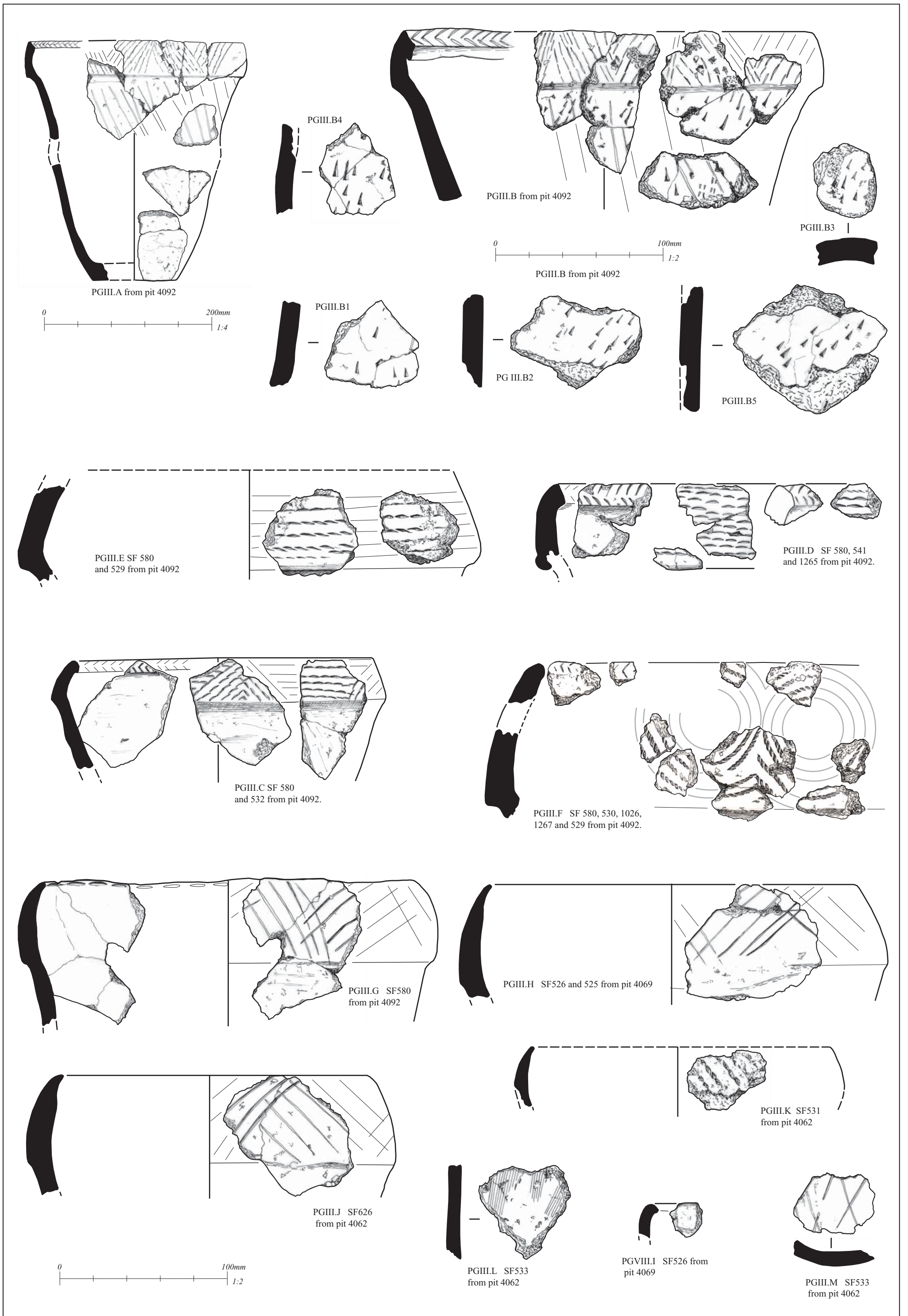
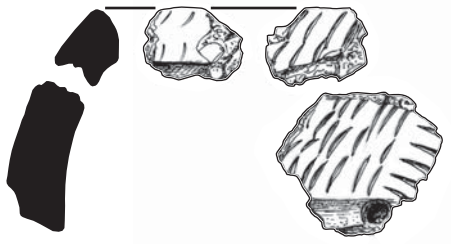


Figure 30. Finds from Pit Group III (all illustrated sherds are from Fengate vessels)



PGIV.A. SF 703 from pit 4103.



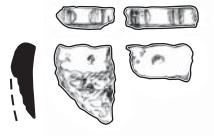
PGIV.A. SF 703 from pit 4103.



PGIV.A. SF 703 from pit 4103.



PGIV.B. SF 1003 from pit 4103.



PGIV.C. SF 543 from pit 4103.



SF 1252 from pit 4109.

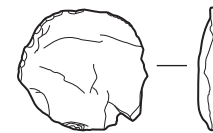
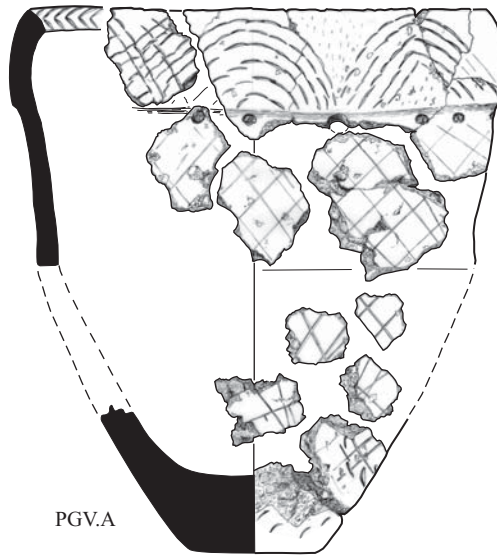
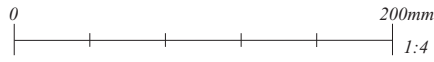


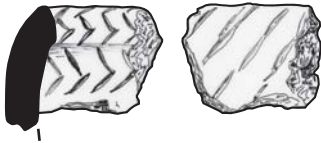
Figure 31. Finds from Pit Group IV. Fengate ware: PGIV.A-C. Flint: SF1252 (scraper).



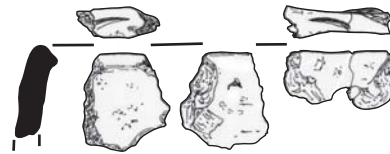
PGV.A



PGV.B SF 565



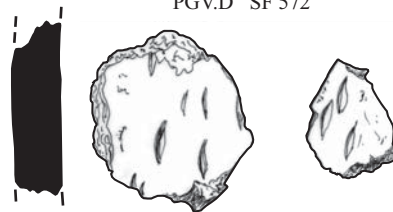
PGV.C SF 570 and 590



PGV.D SF 568



PGV.D SF 572

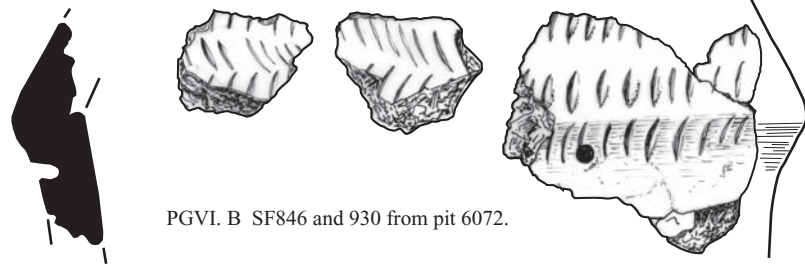
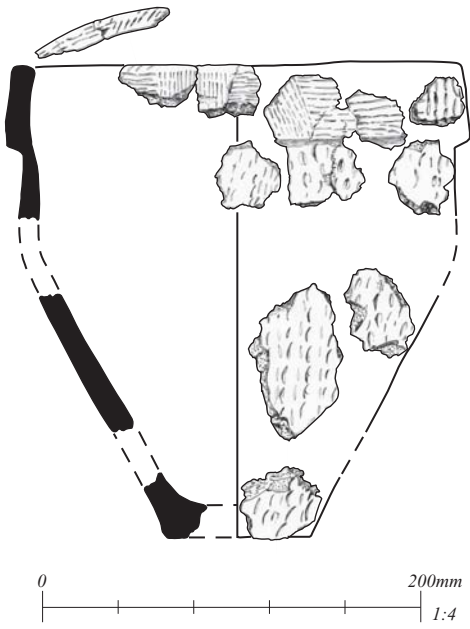


PGV.E SF 558



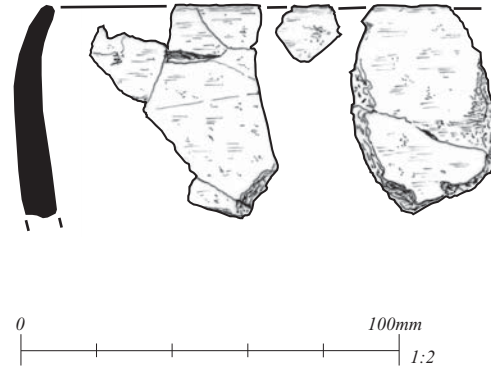
Figure 32. Finds from Pit Group V (all illustrated sherds are Fengate ware and are from pit 4133).

PGVI. A from pit 6034.



PGVI. B SF846 and 930 from pit 6072.

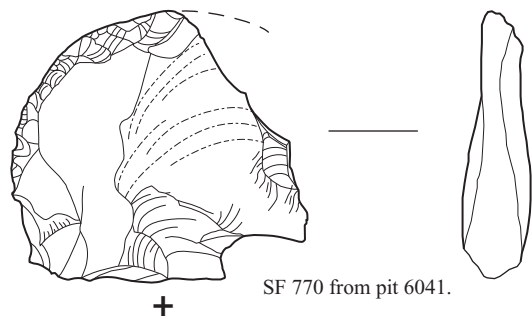
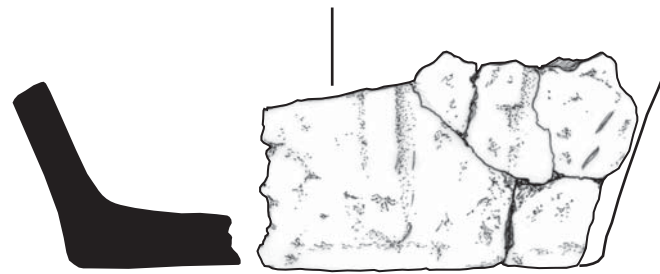
PGVI. C SF774 and 776 from pit 6041.



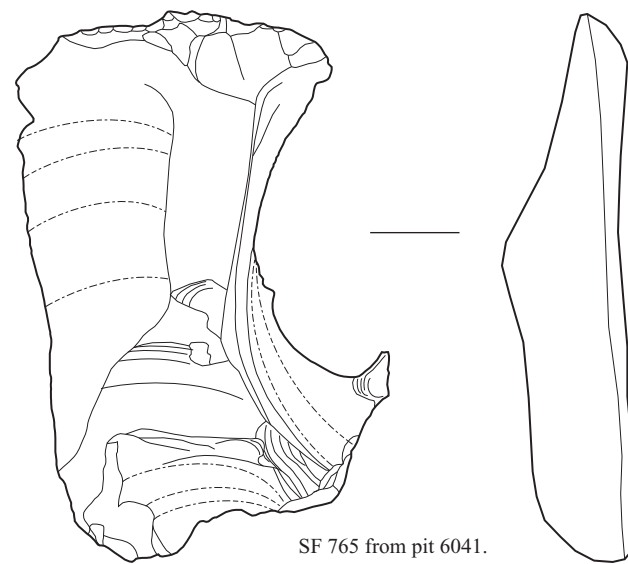
PGVI. E SF776 from pit 6041.



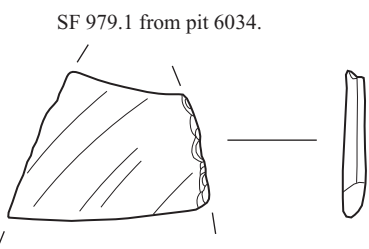
PGVI. D SF 773 from pit 6041.



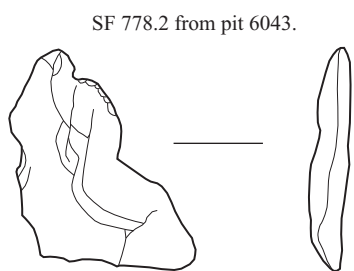
SF 770 from pit 6041.



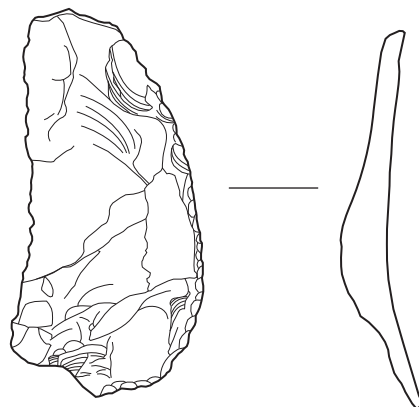
SF 765 from pit 6041.



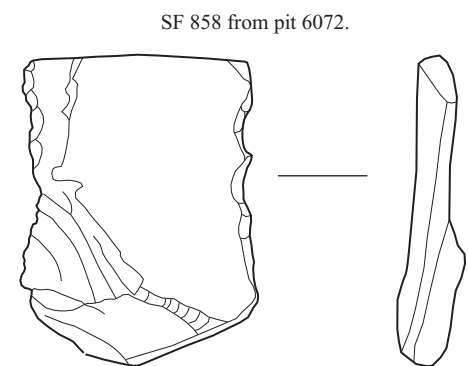
SF 979.1 from pit 6034.



SF 778.2 from pit 6043.



SF 781 from pit 6041.



SF 858 from pit 6072.



Key  
 + Position of surviving bulb of percussion  
 ● Position of removed bulb of percussion  
 ○ Probable position of removed bulb of percussion

Figure 33. Finds from Pit Group VI. Vessels PGVI.A and B follow the Fengate tradition, whereas PGVI.C-E appear to be Grooved ware. Flint: SF765 (scraper/cutting tool), SF770 (scraper), SF778.2 (spurred piece), SF781 (backed serrated knife), SF858 (large flake) and SF979.1 (flake with retouch),

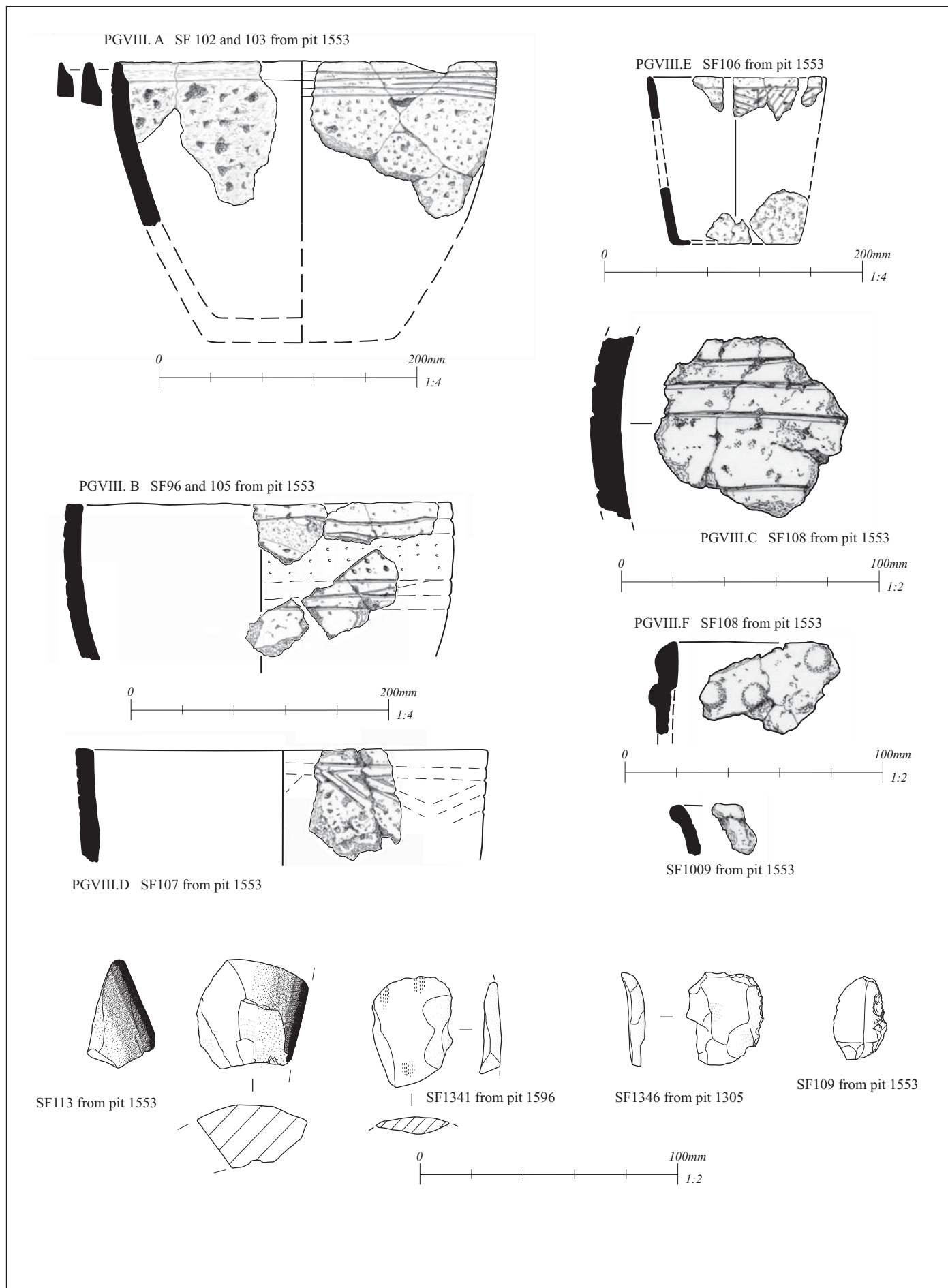


Figure 34. Finds from Pit Group VIII. Grooved Ware: vessels PGVIII.A-E. Sherd with pellets: PGVIII.F. Early Neolithic pottery: SF1009 (rim sherd). Graig Lwyd stone: SF113 (polished axe fragment) and SF1341 (flake with polished surface). Stone of unknown source: SF109 and SF1346 (both with slight retouch).

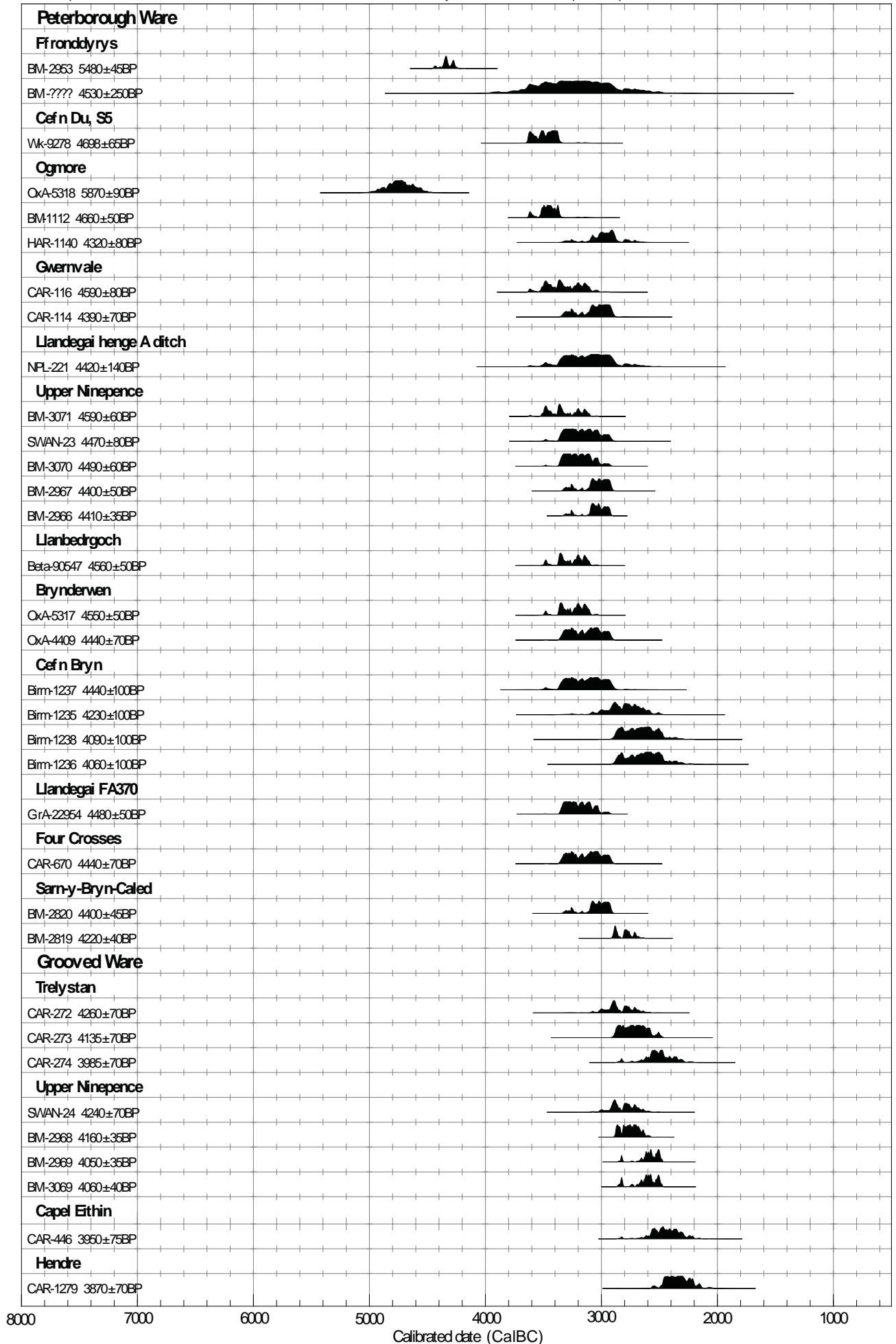


Fig 35. Radiocarbon dates from contexts associated with Mid and Late Neolithic pottery in Wales



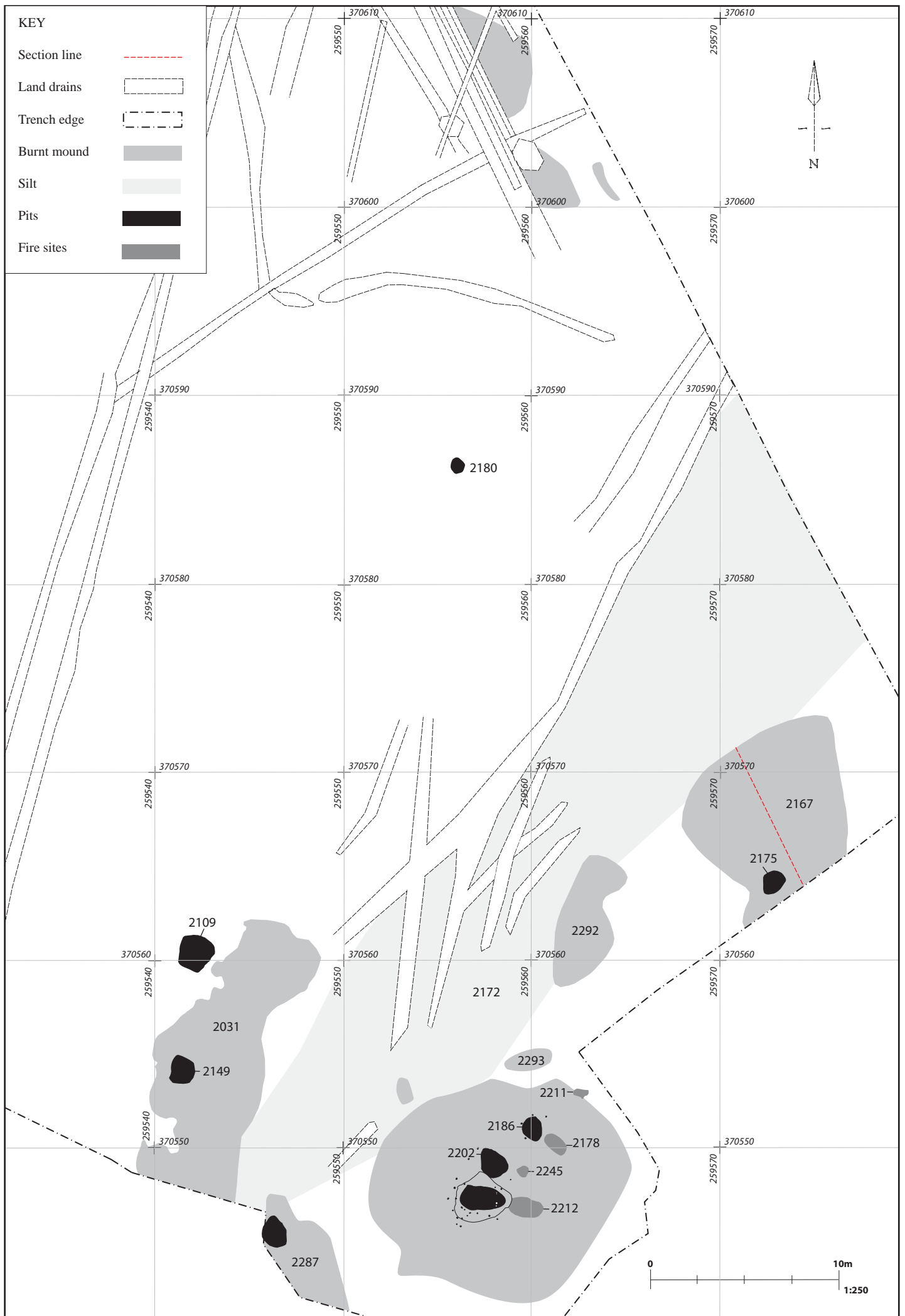


Figure 36. Plan of burnt mounds in trench 2

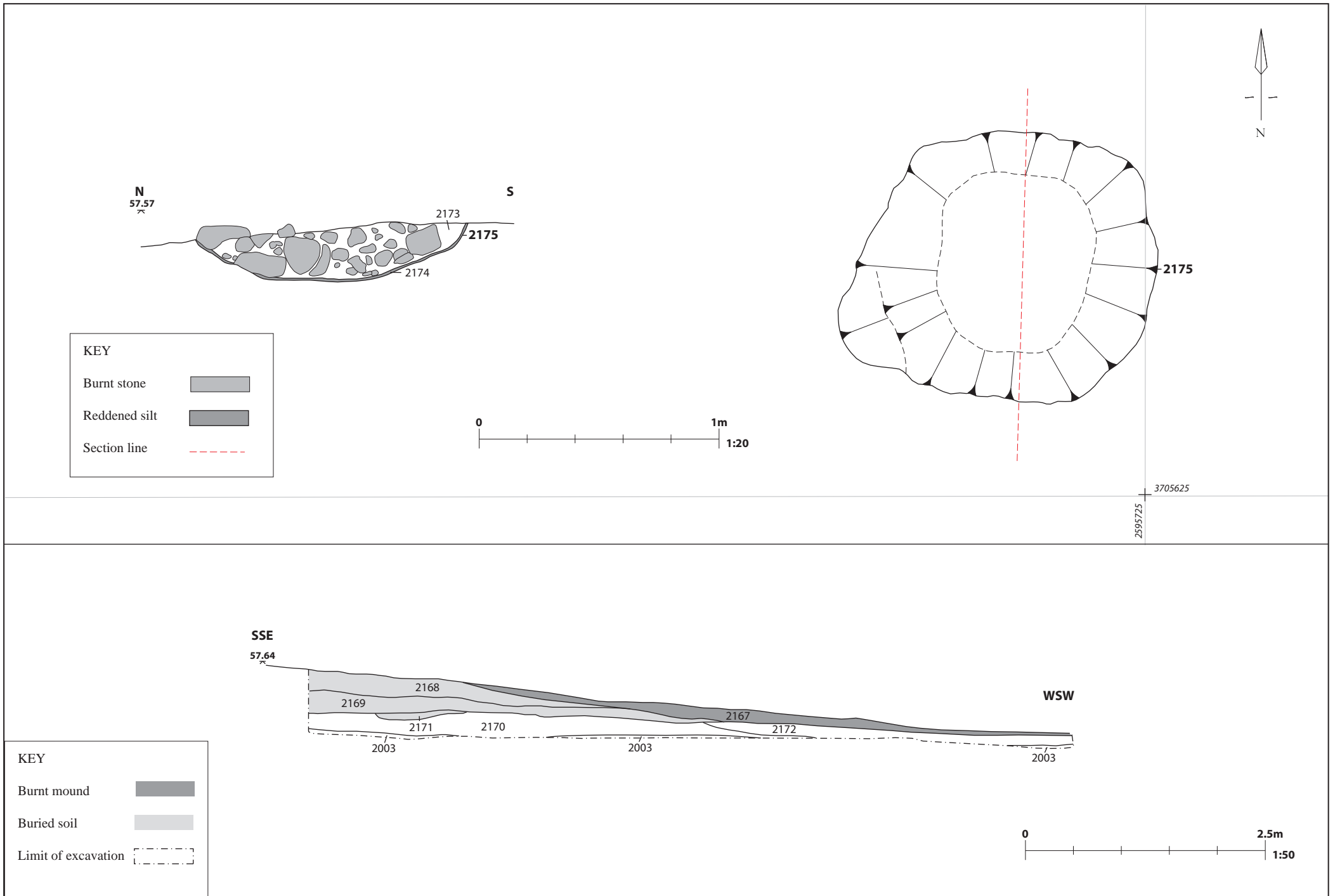
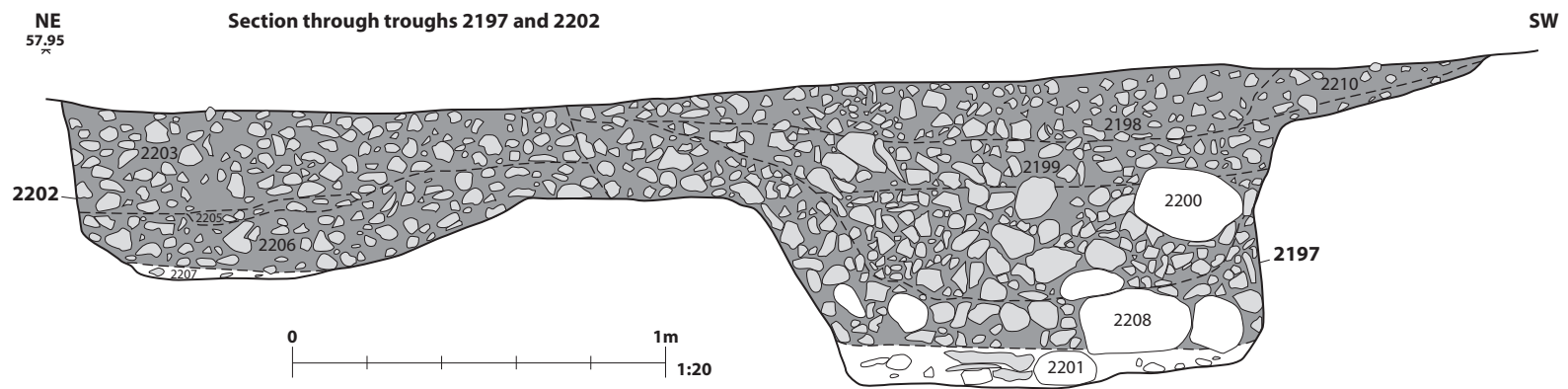
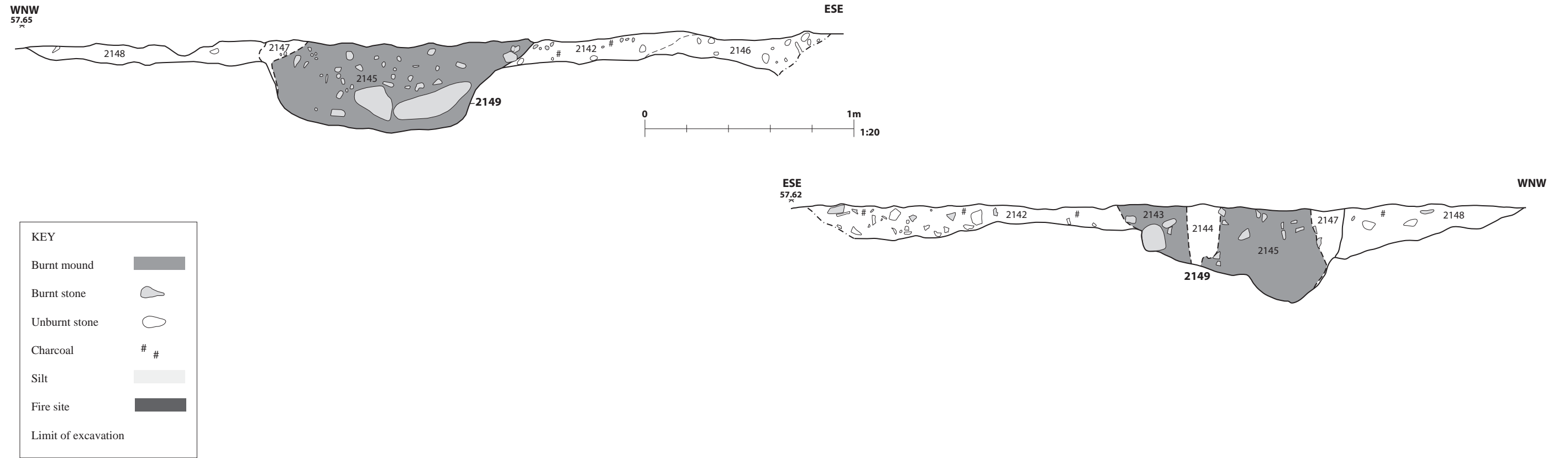


Figure 37. Plan and section of pit 2175 and section of mound 2167 in trench 2 (for location of section see Fig. 36)



Figure 38. Plan of burnt mounds 2031, 2176 and 2287 in trench 2 (for location see Fig. 5)

Sections through trough 2149 in burnt mound 2031



Section across burnt mound 2176

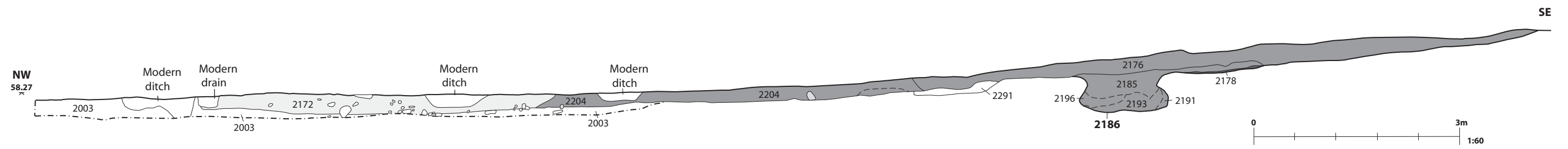


Figure 39. Sections of burnt mounds 2031 and 2176 (for locations of sections see Fig. 38)

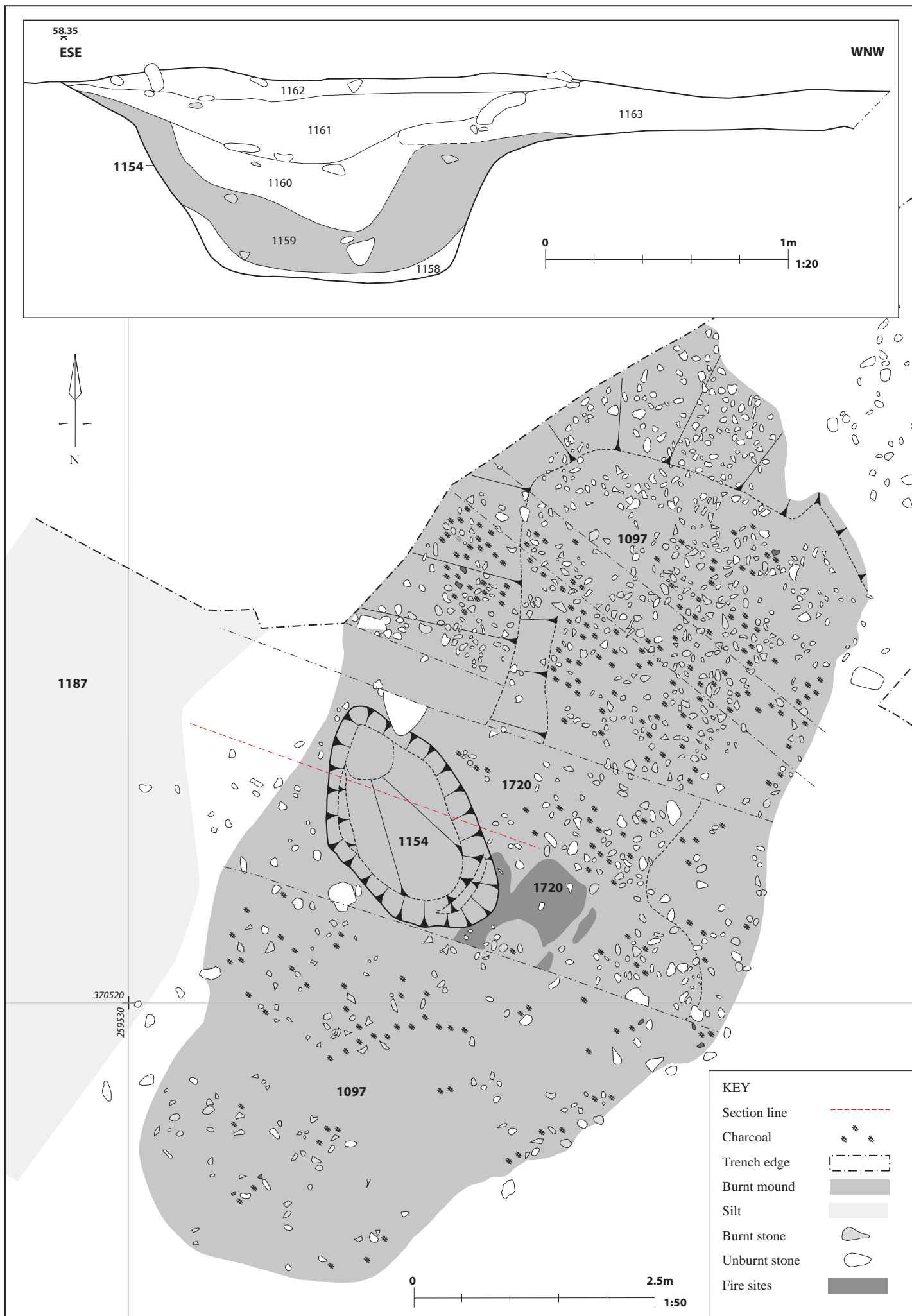


Figure 40. Plan and sections of burnt mound 1097 in trench 1 (for location see Fig. 5)



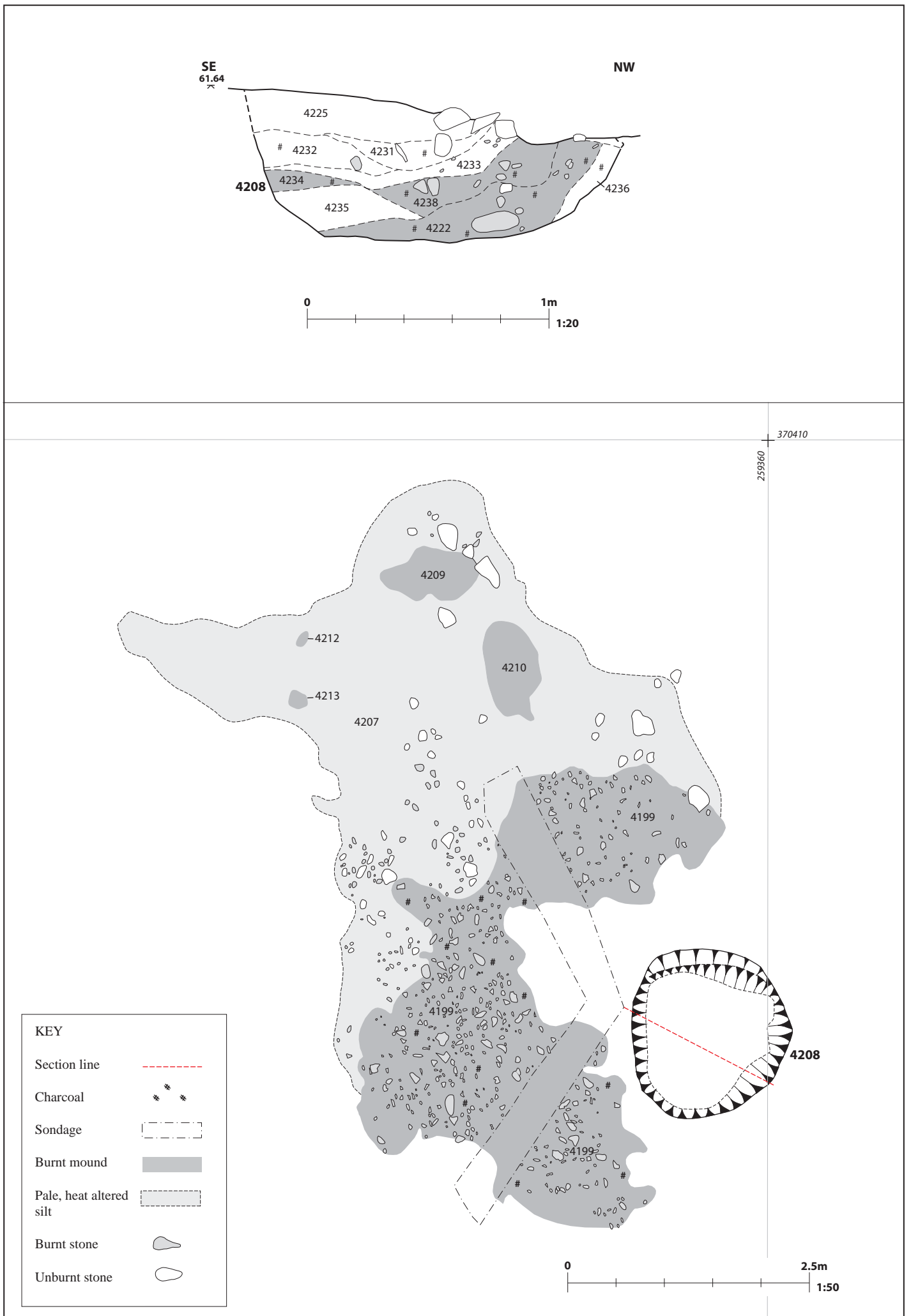


Figure 41. Plan and section of burnt mound 4199 in trench 4 (for location see Fig. 5)

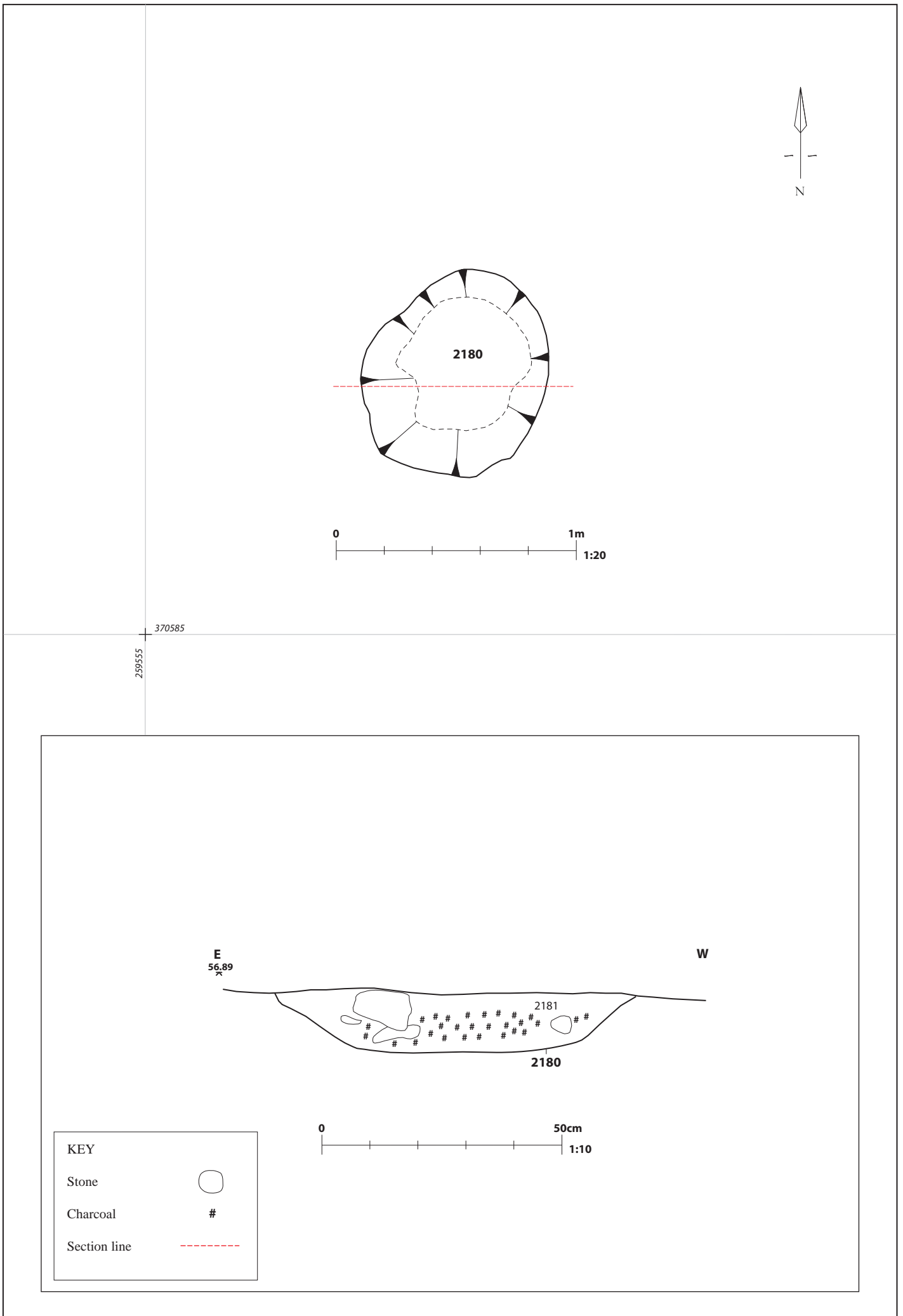


Figure 42. Plan and section of pit 2180 in trench 2 (for location see Fig. 36)

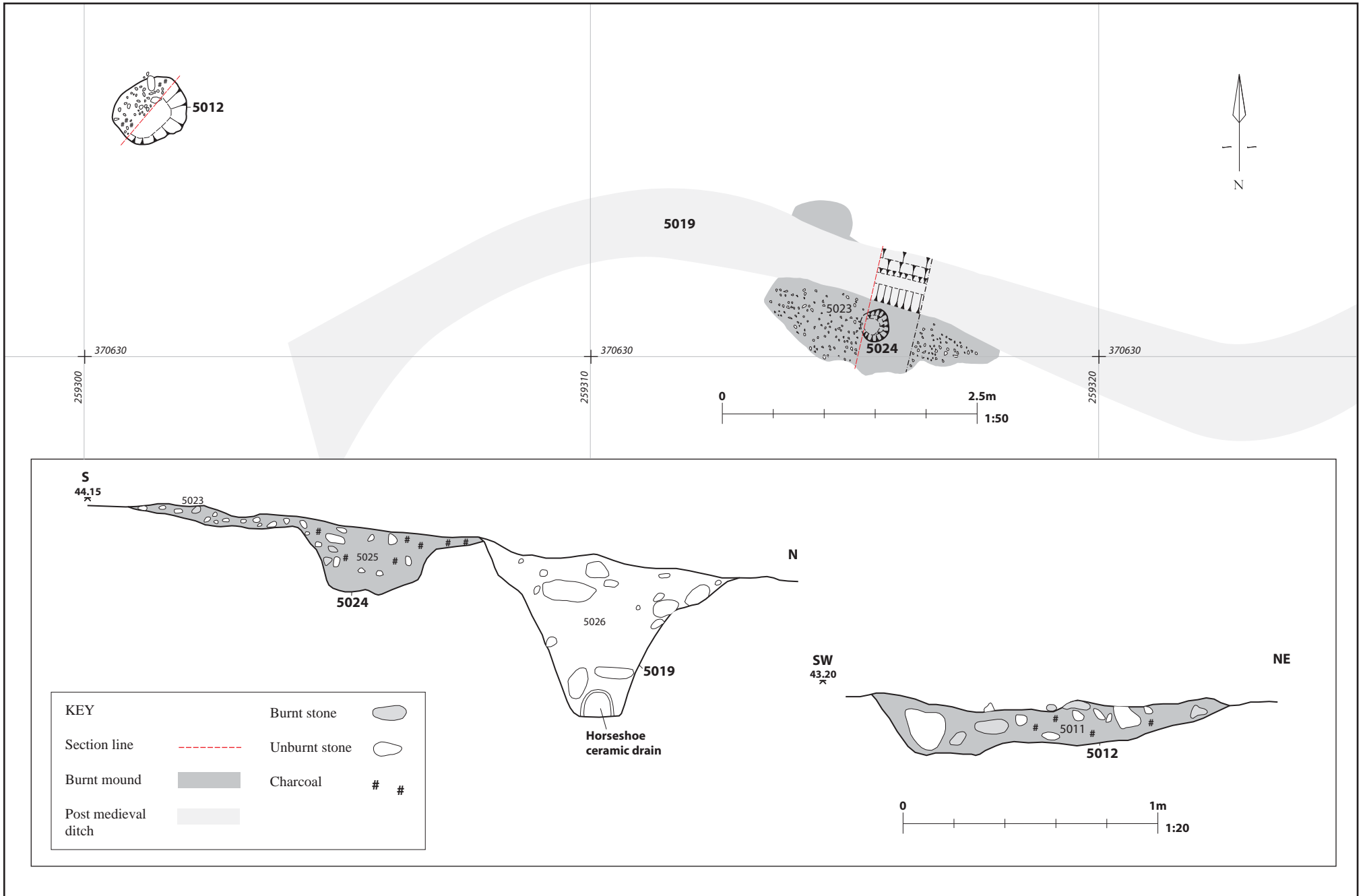


Figure 43. Plan and section of burnt mound 5023 in trench 5 (for location see Fig. 6)



Figure 44. Plan of burnt mound 3830 in trench 3 (for location see Fig. 6)

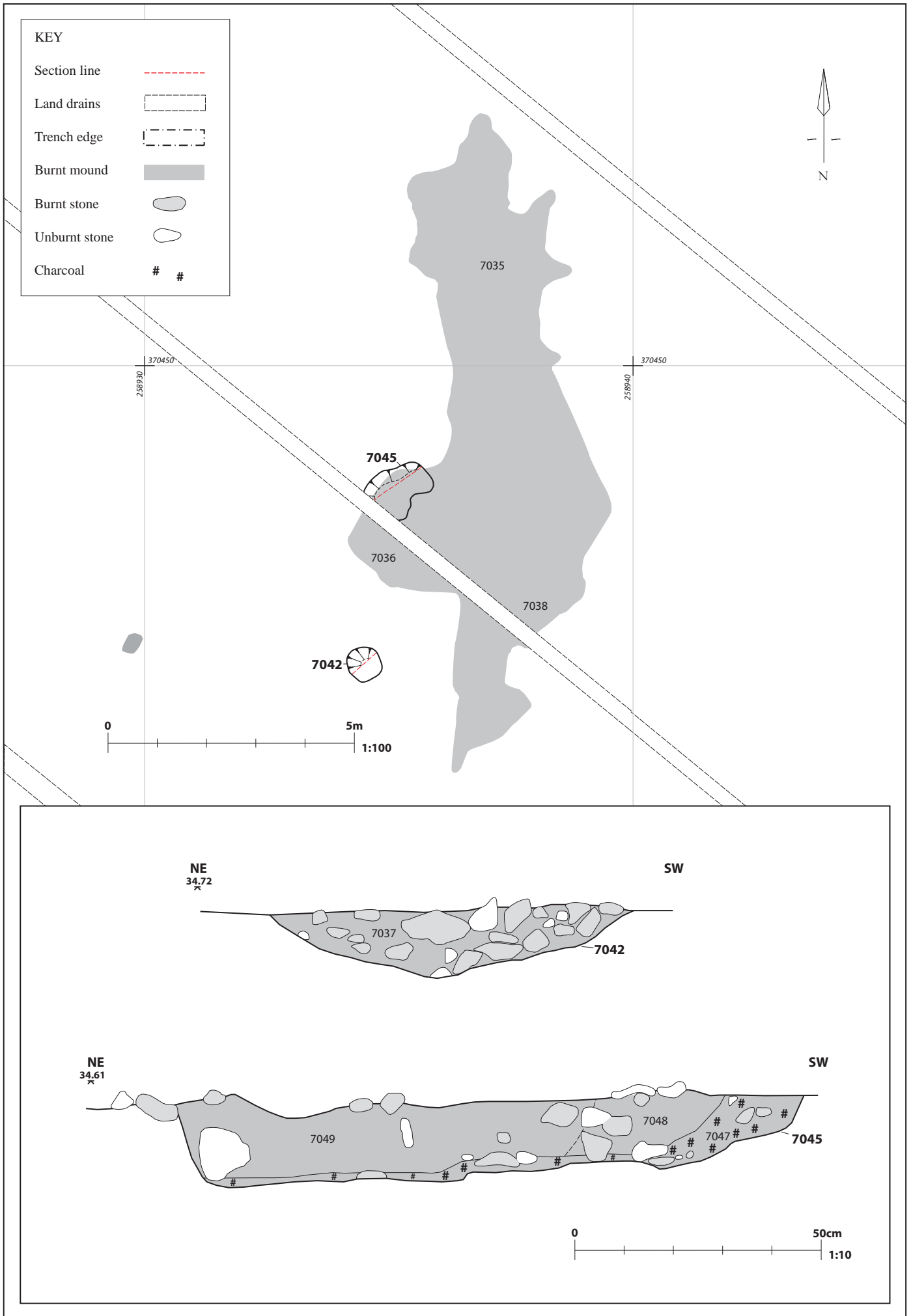


Figure 45. Plan and section of burnt mound 7035 in trench 7 (for location see Fig. 6)



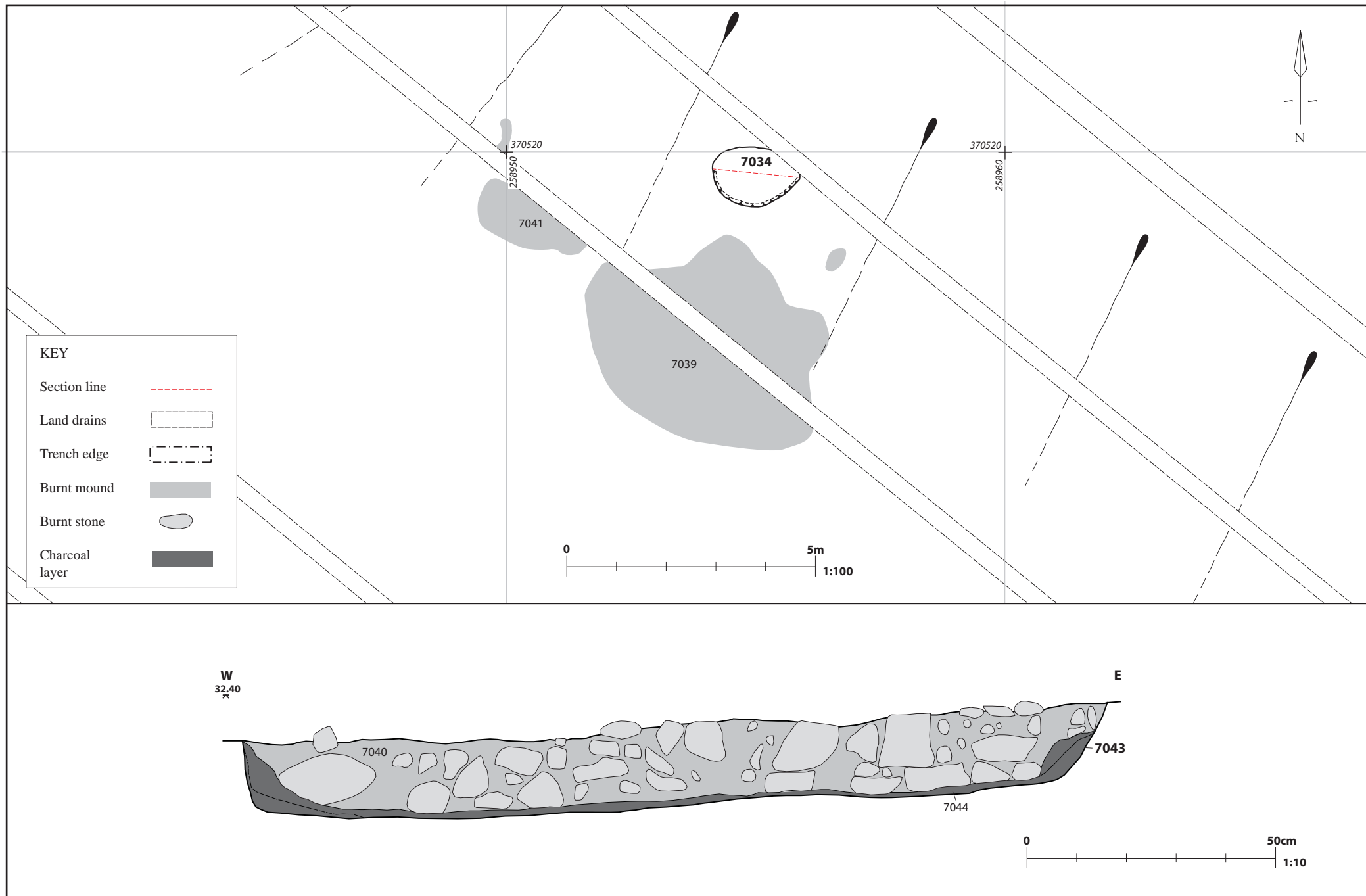


Figure 46. Plan and section of burnt mound 7039 in trench 7 (for location see Fig. 6)

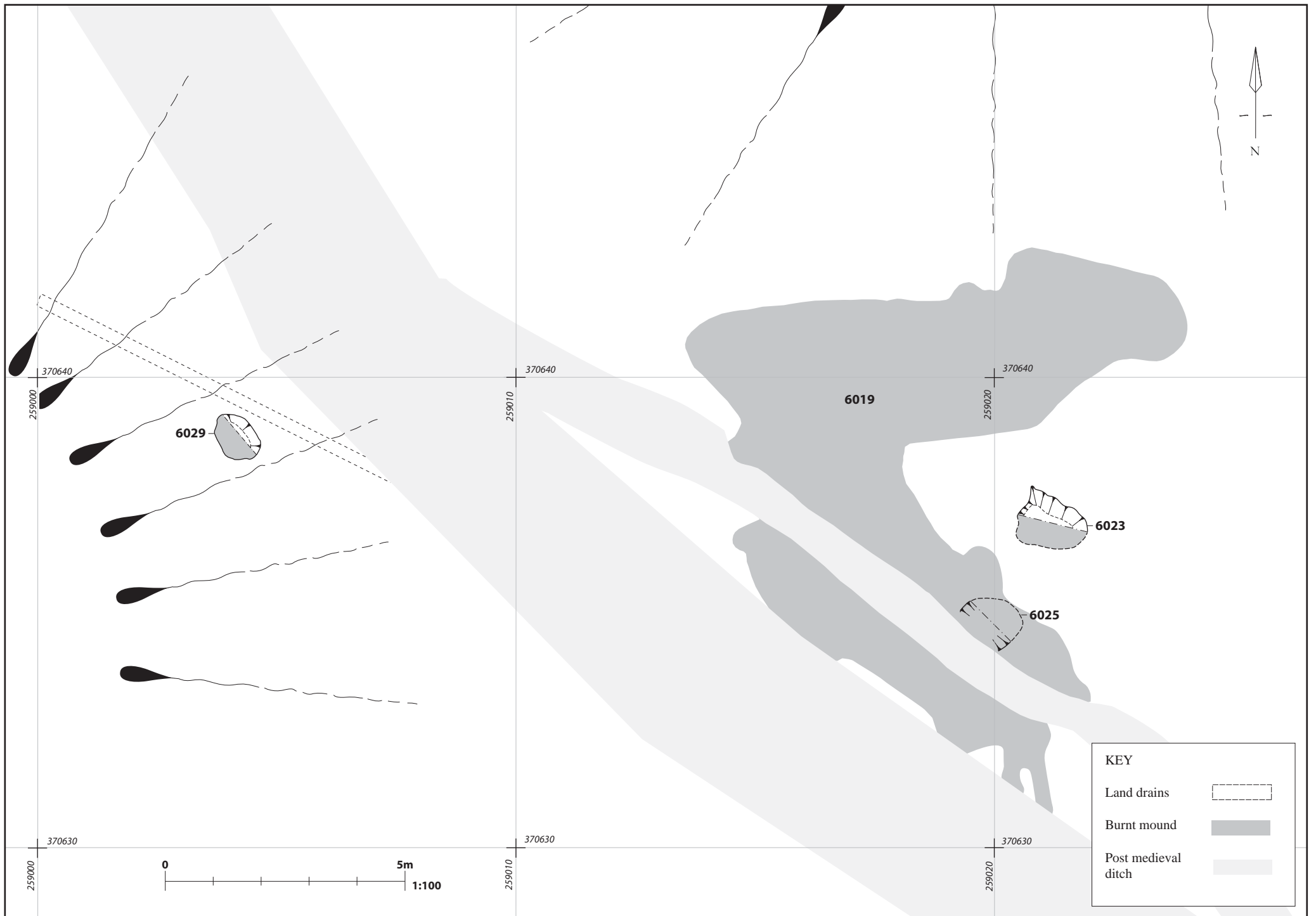


Figure 47. Plan of burnt mound 6019 in trench 6 (for location see Fig. 6)

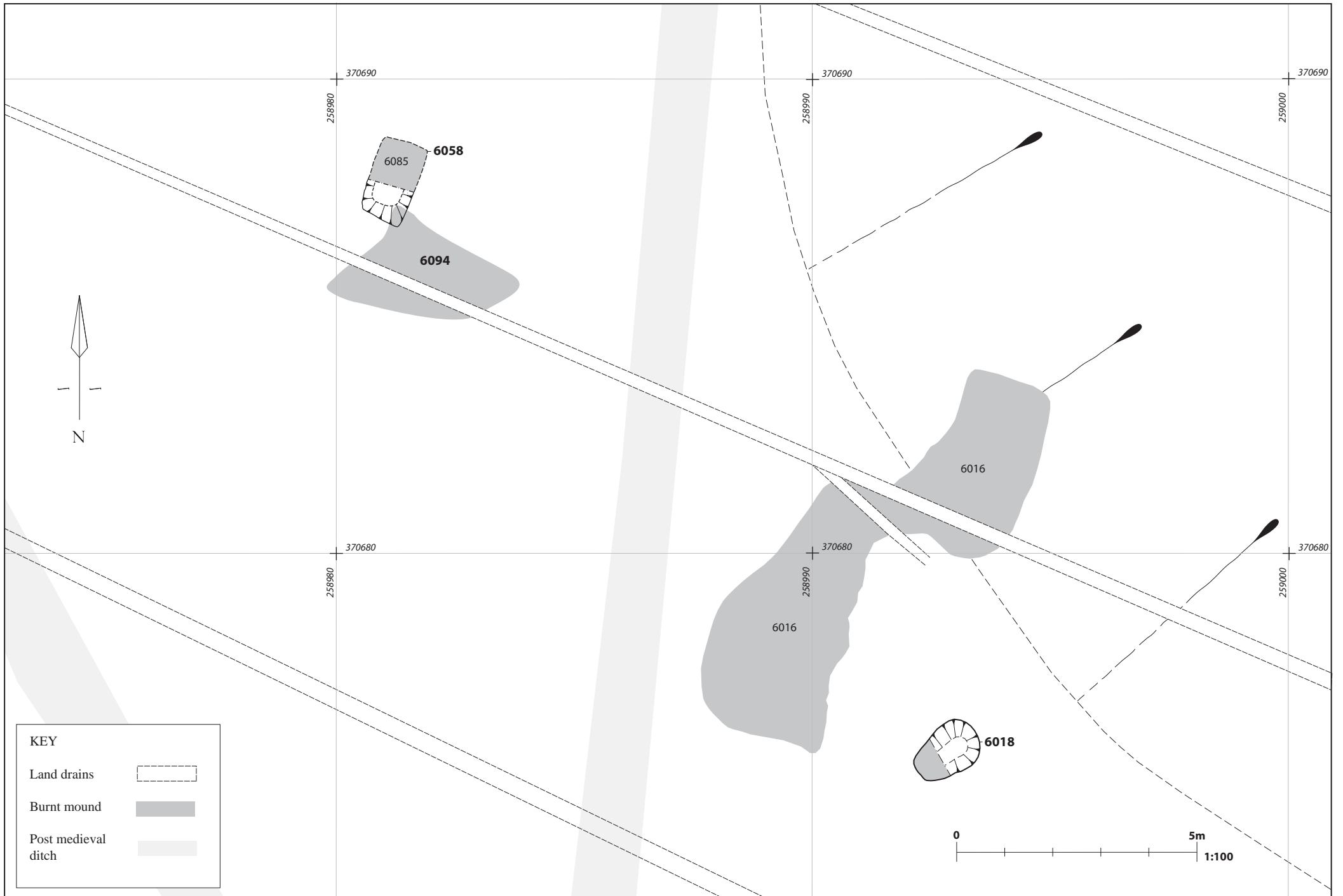


Figure 48. Plan of burnt mounds 6016 and 6094 in trench 6 (for location see Fig. 6)

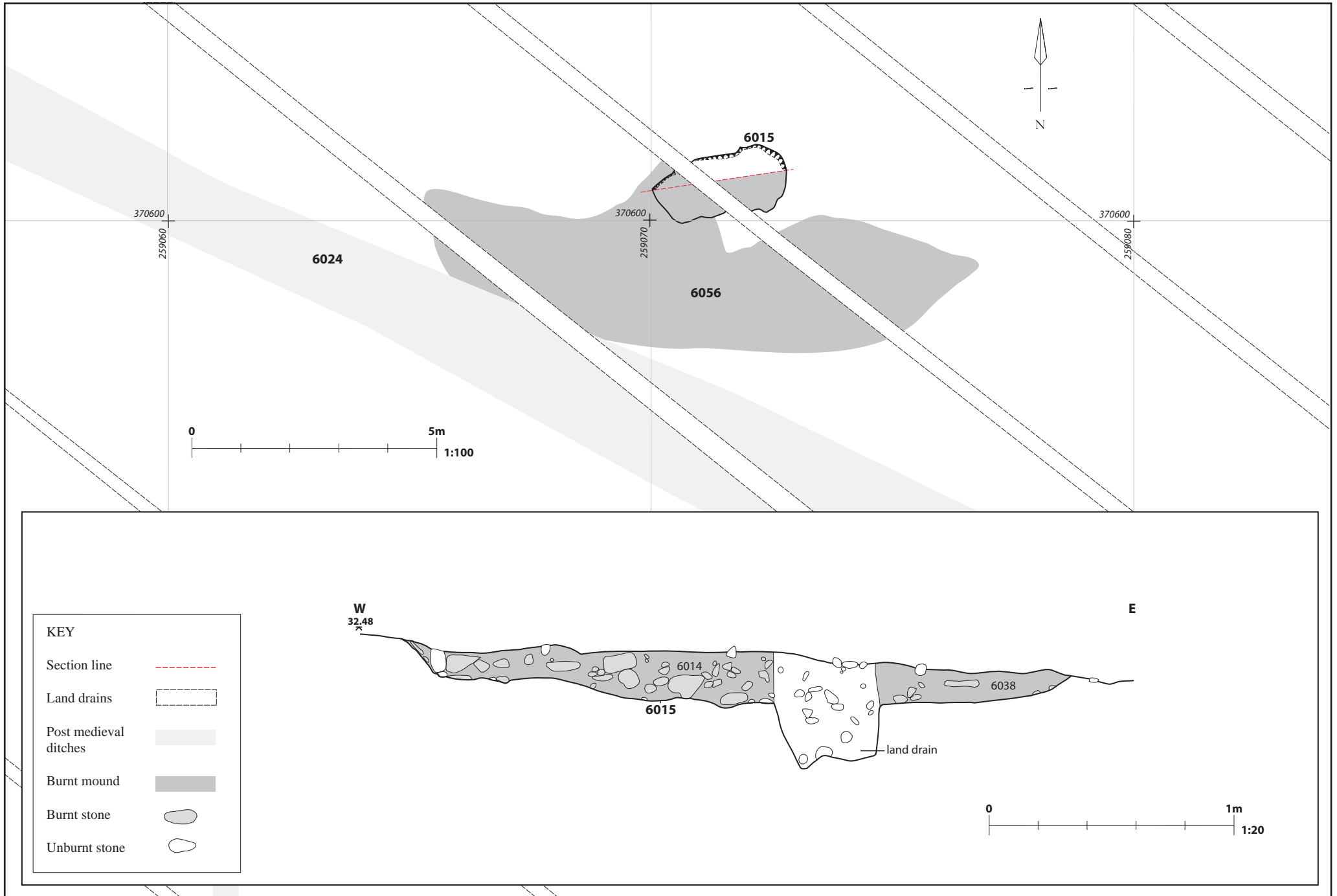


Figure 49. Plan and section of burnt mound 6056 in trench 6 (for location see Fig. 6)

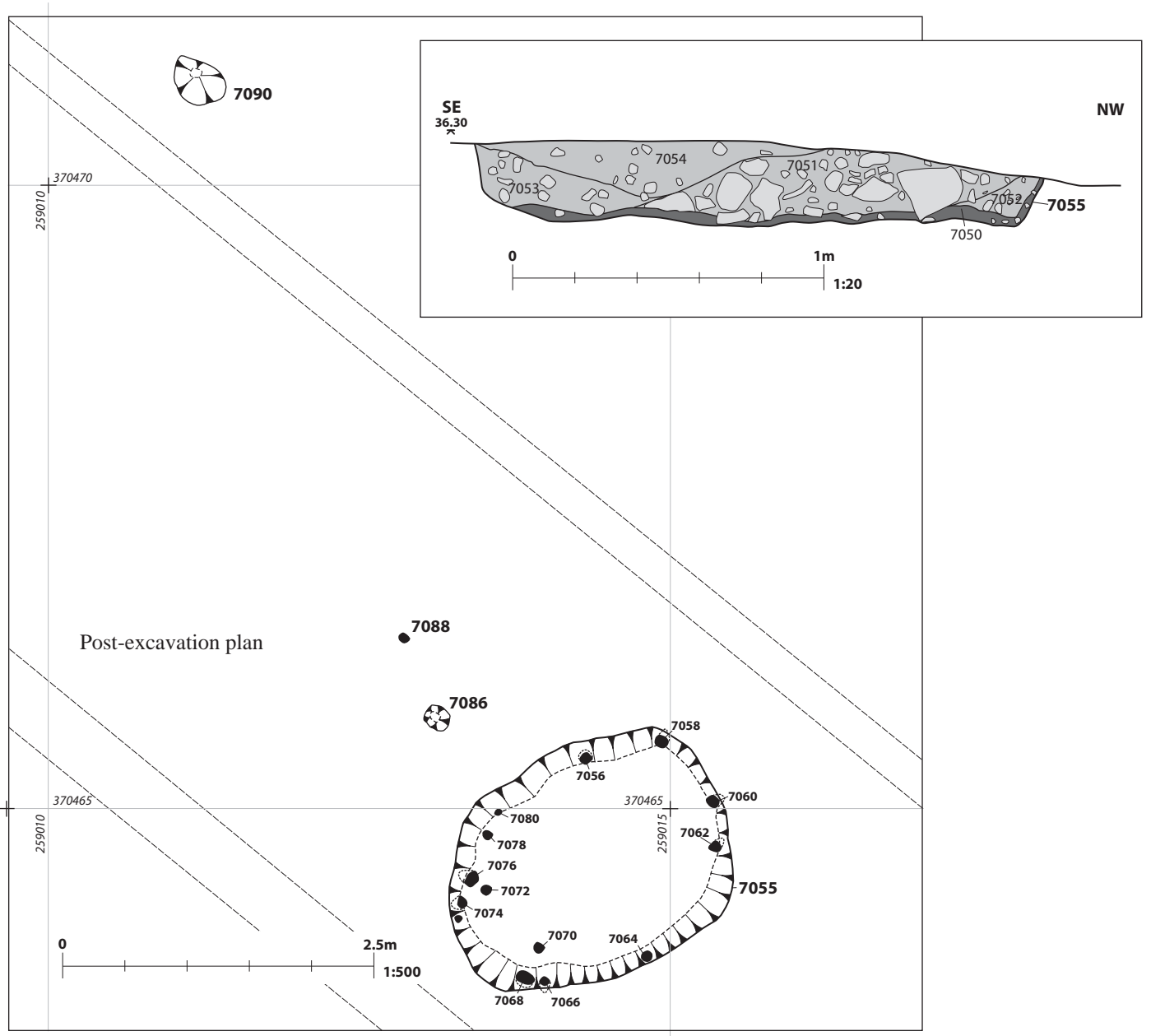
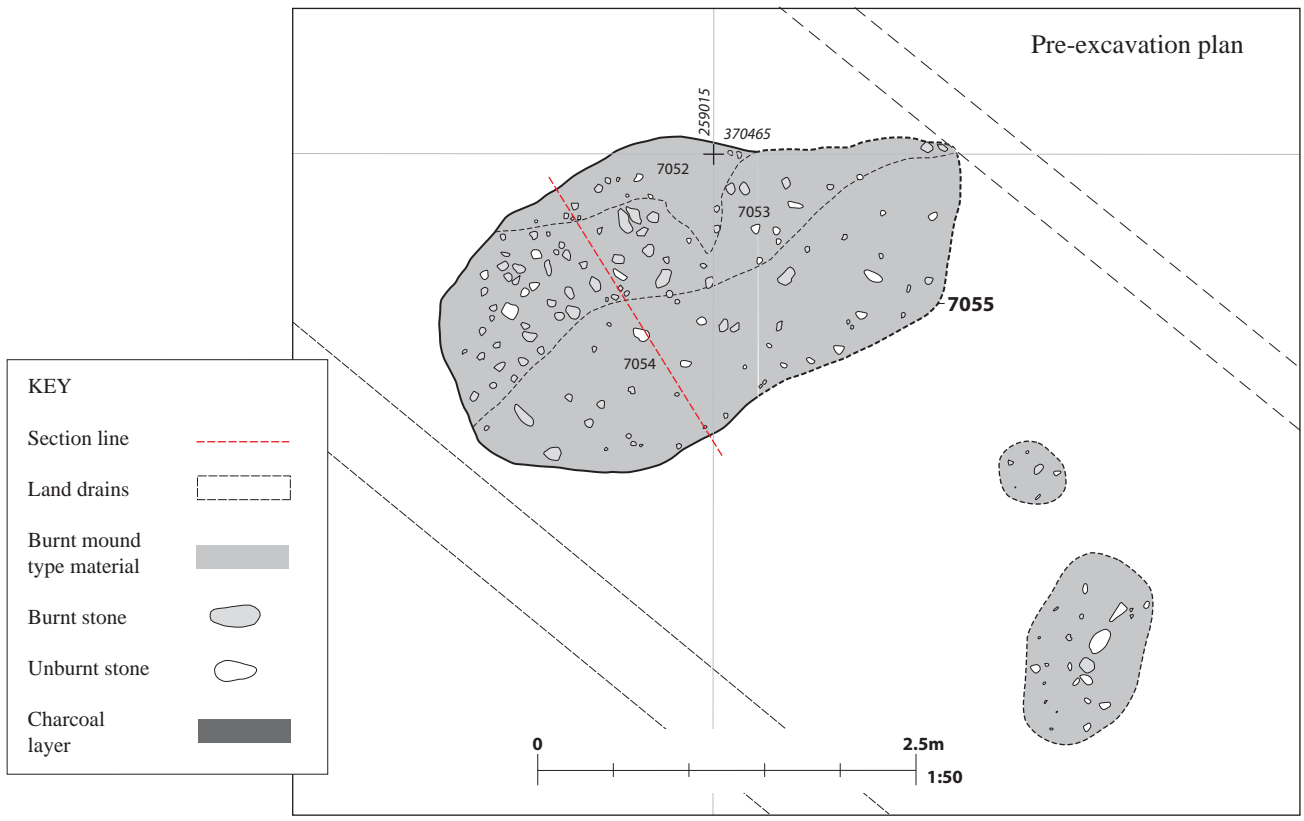
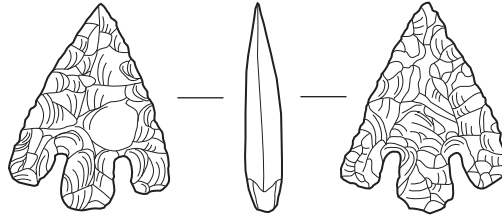


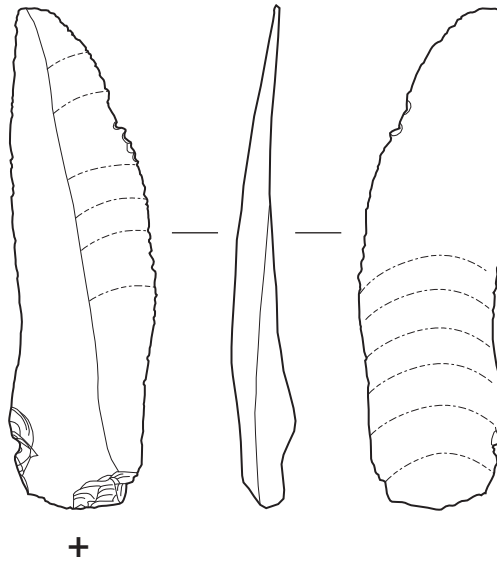
Figure 50. Plans and section of feature 7055 in trench 7 (for location see Fig. 6)



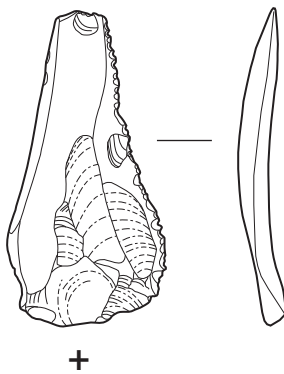
SF 581 from context 4112.



SF 472 from earth oven 3133



SF 585 from beneath burnt mound 4199



SF 881 from beneath burnt mound 2176

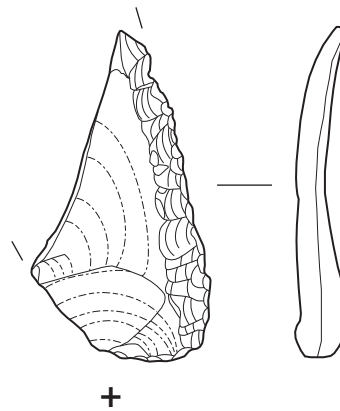


Figure 51. Artifacts from burnt mounds, earth ovens and other miscellaneous prehistoric features. Barb and tang arrowhead: SF581. Flint blade: SF472. Edge-retouched knives: SF585 and SF881.

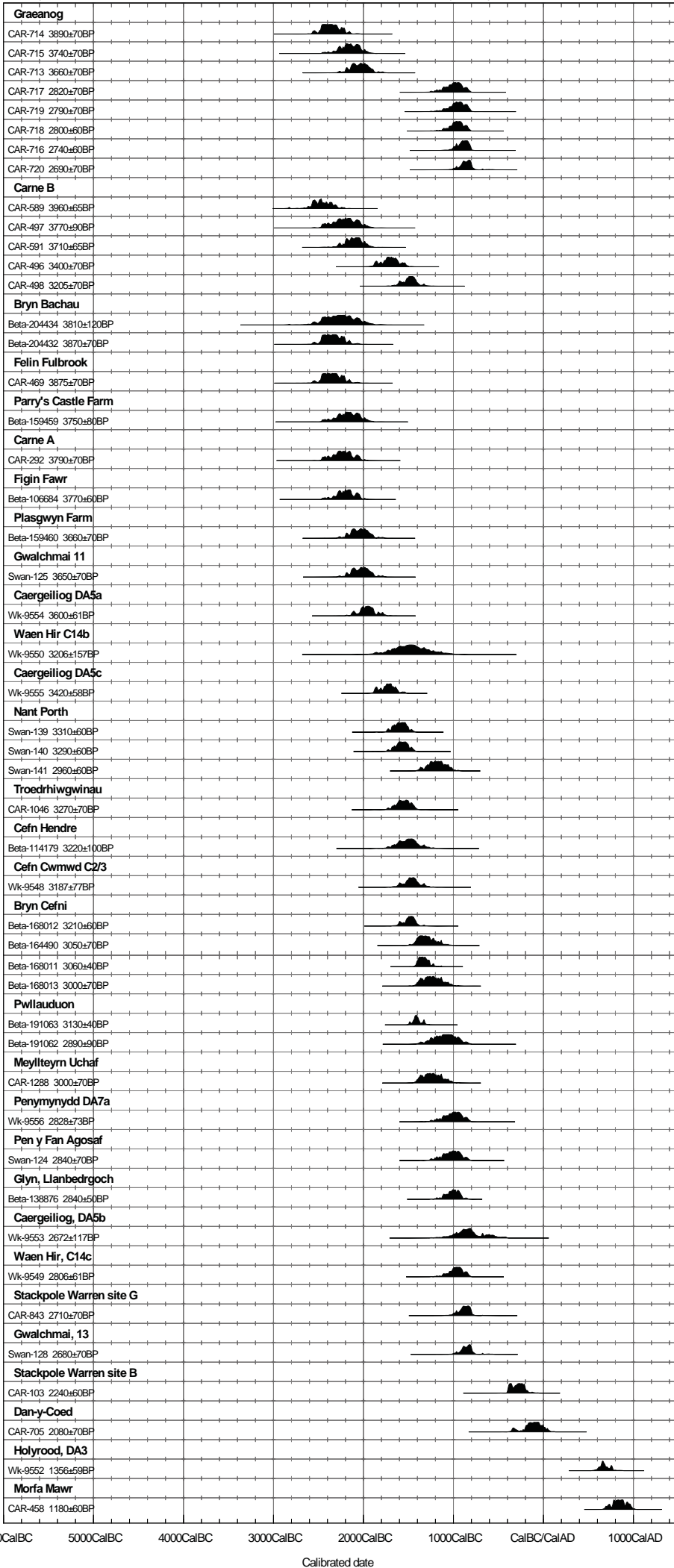
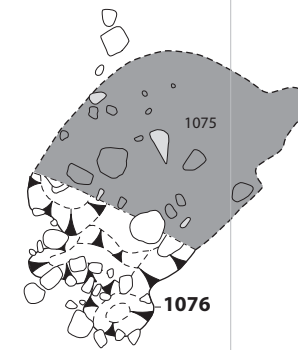
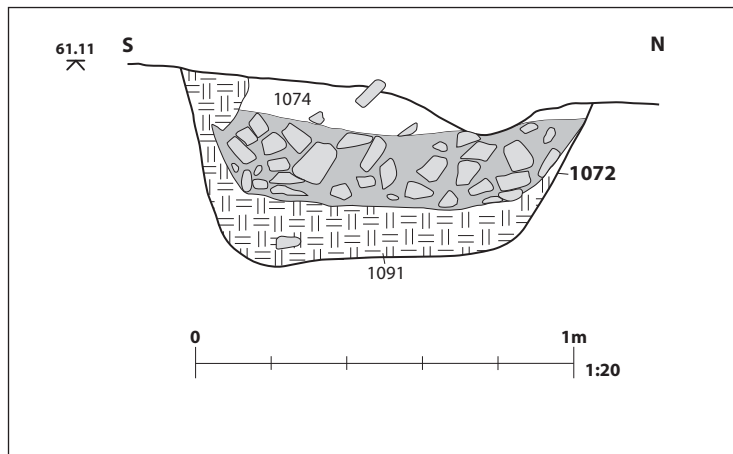
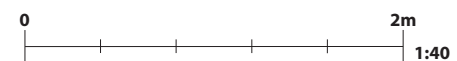
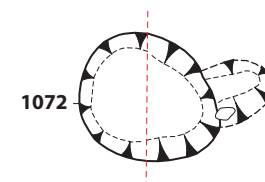
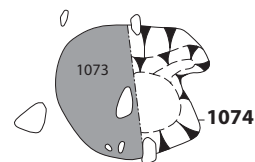


Fig 52. Graph of radiocarbon dates from burnt mounds in Wales



370470

259540



KEY	
Section line	-----
Burnt stone deposit	■
Burnt stone	◐
Unburnt stone	◑
Burnt patches	■
Clay	≡  ≡

Figure 53. Plan and section of earth oven 1072 in trench 1 (for location see Fig. 5)

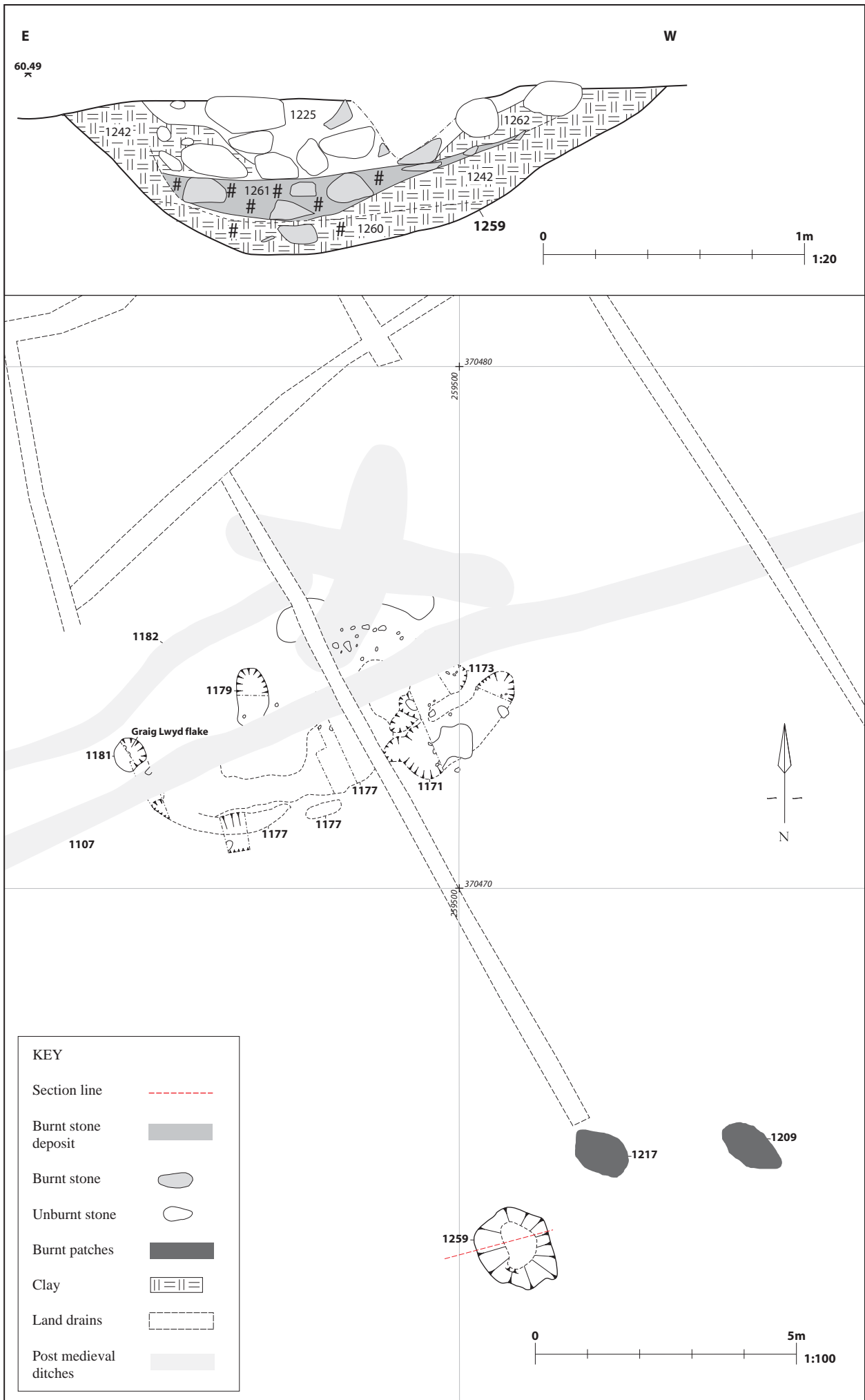


Figure 54. Plan and section of earth oven 1259 and adjacent features in trench 1 (for location see Fig. 5).

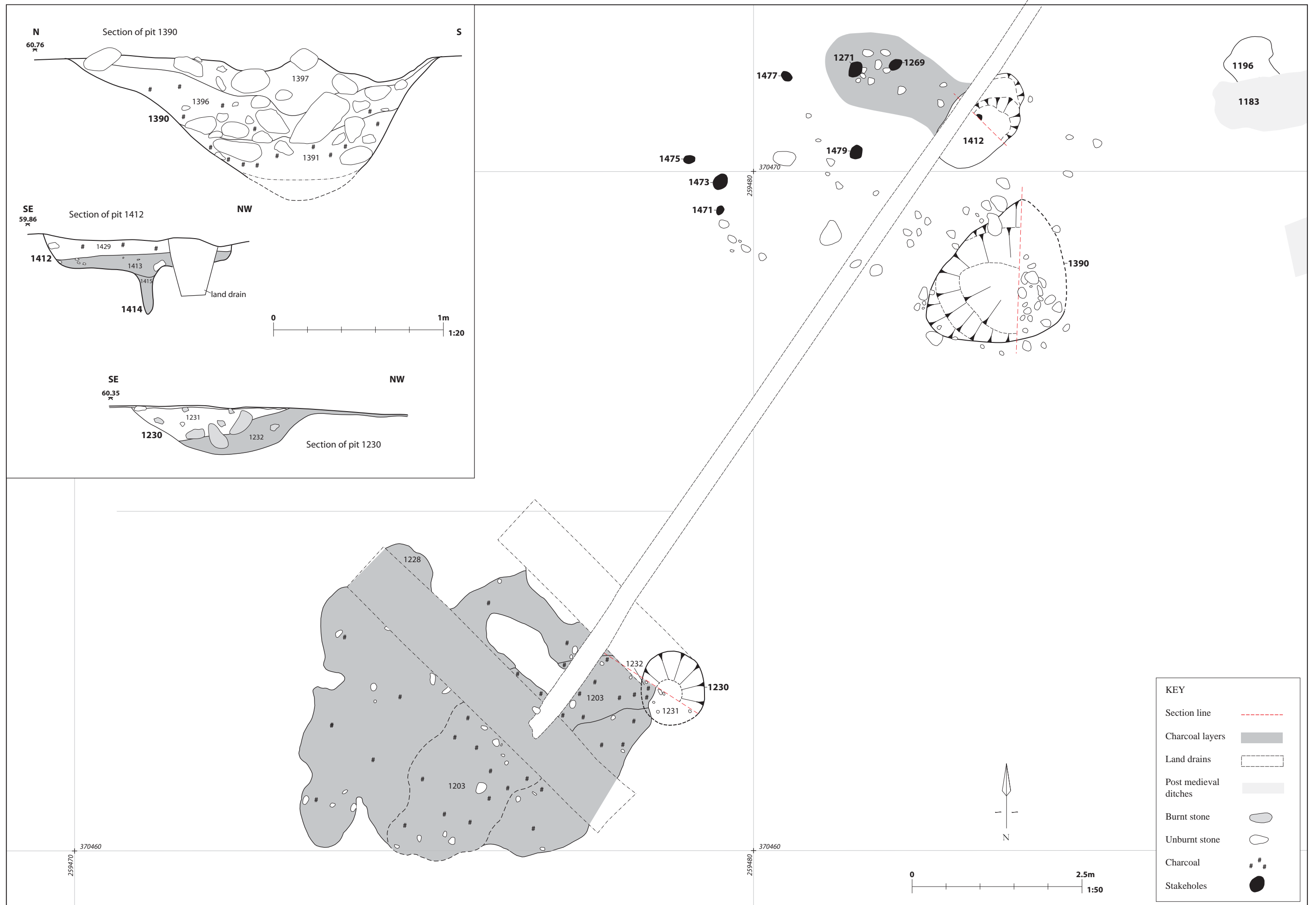


Figure 55. Plan and sections of earth oven 1230 and pit 1390 in trench 1 (for location see Fig. 5)



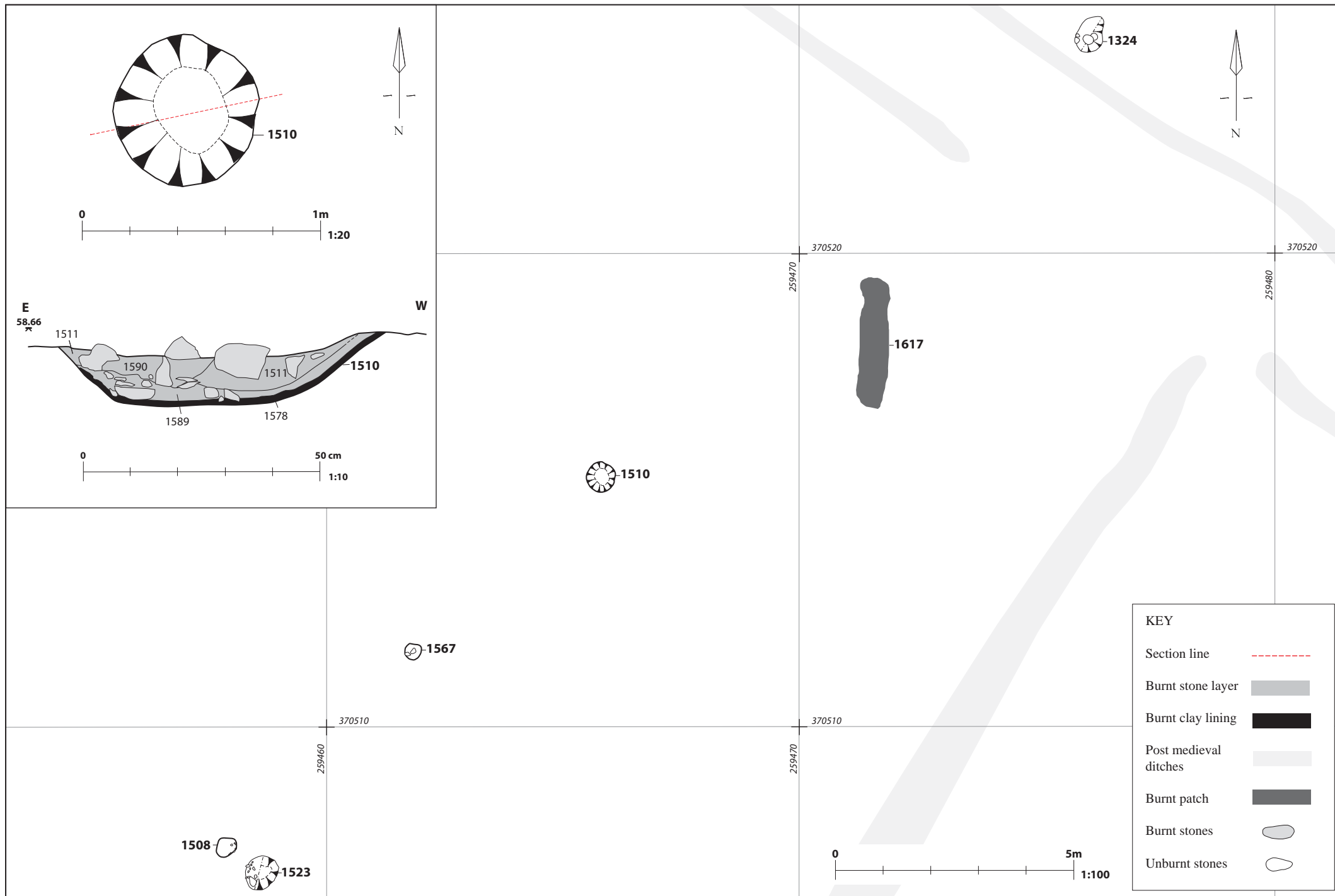


Figure 56. Plan and section of earth oven 1510 in trench 1 (for location see Fig. 5)

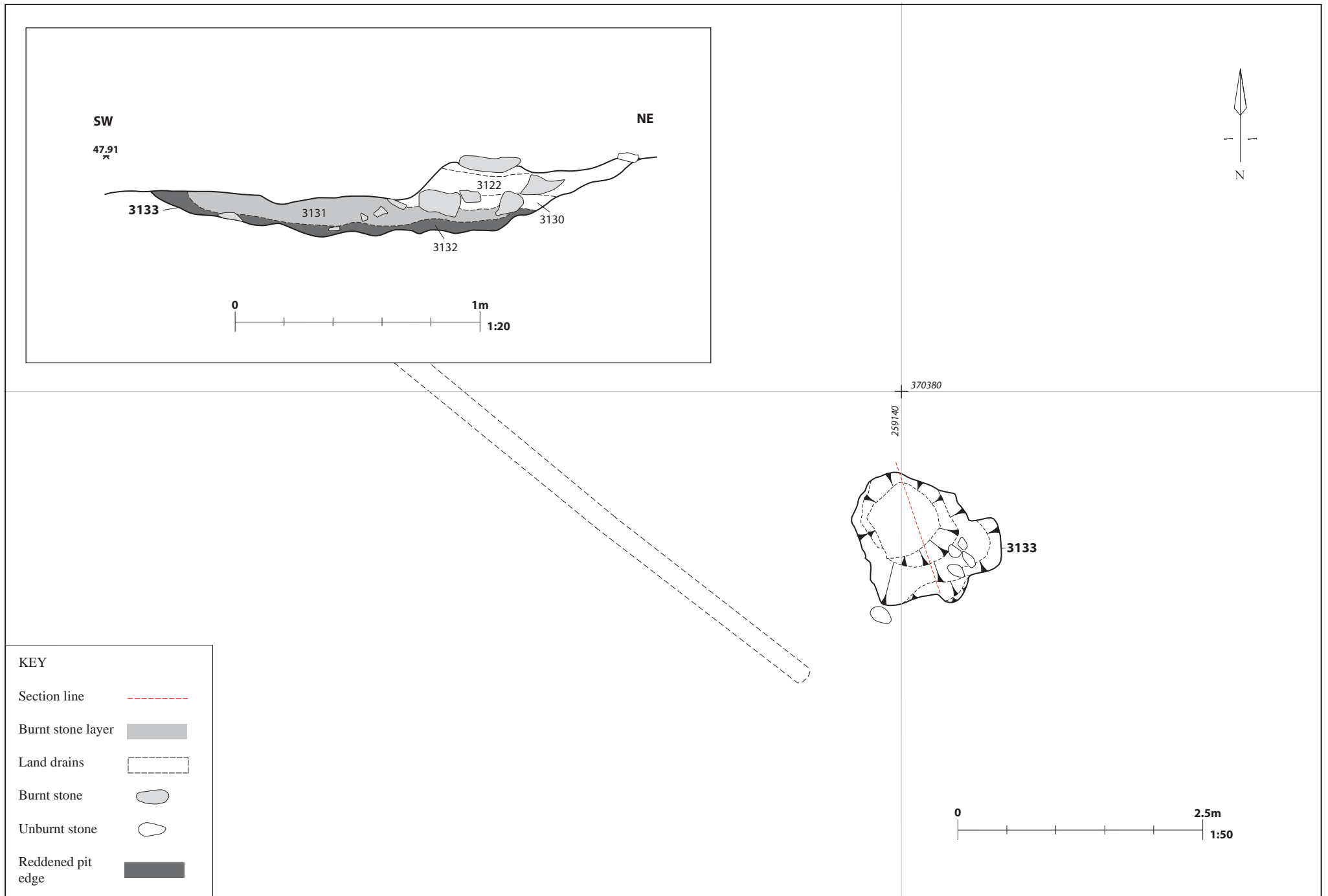


Figure 57. Plan and section of earth oven 3133 in trench 3 (for location see Fig. 6)

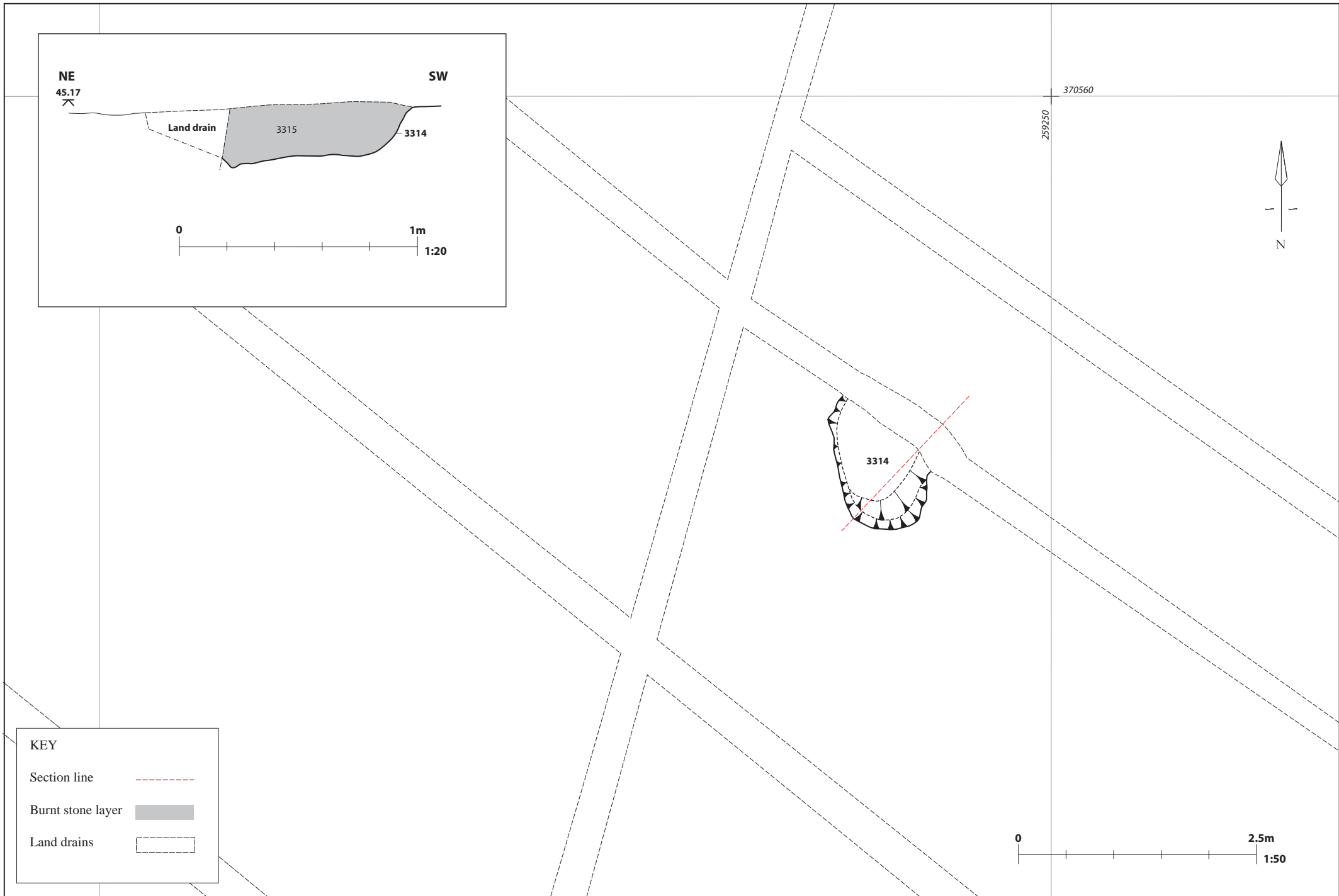


Figure 58. Plan and section of earth oven 3314 in trench 3 (for location see Fig. 6)

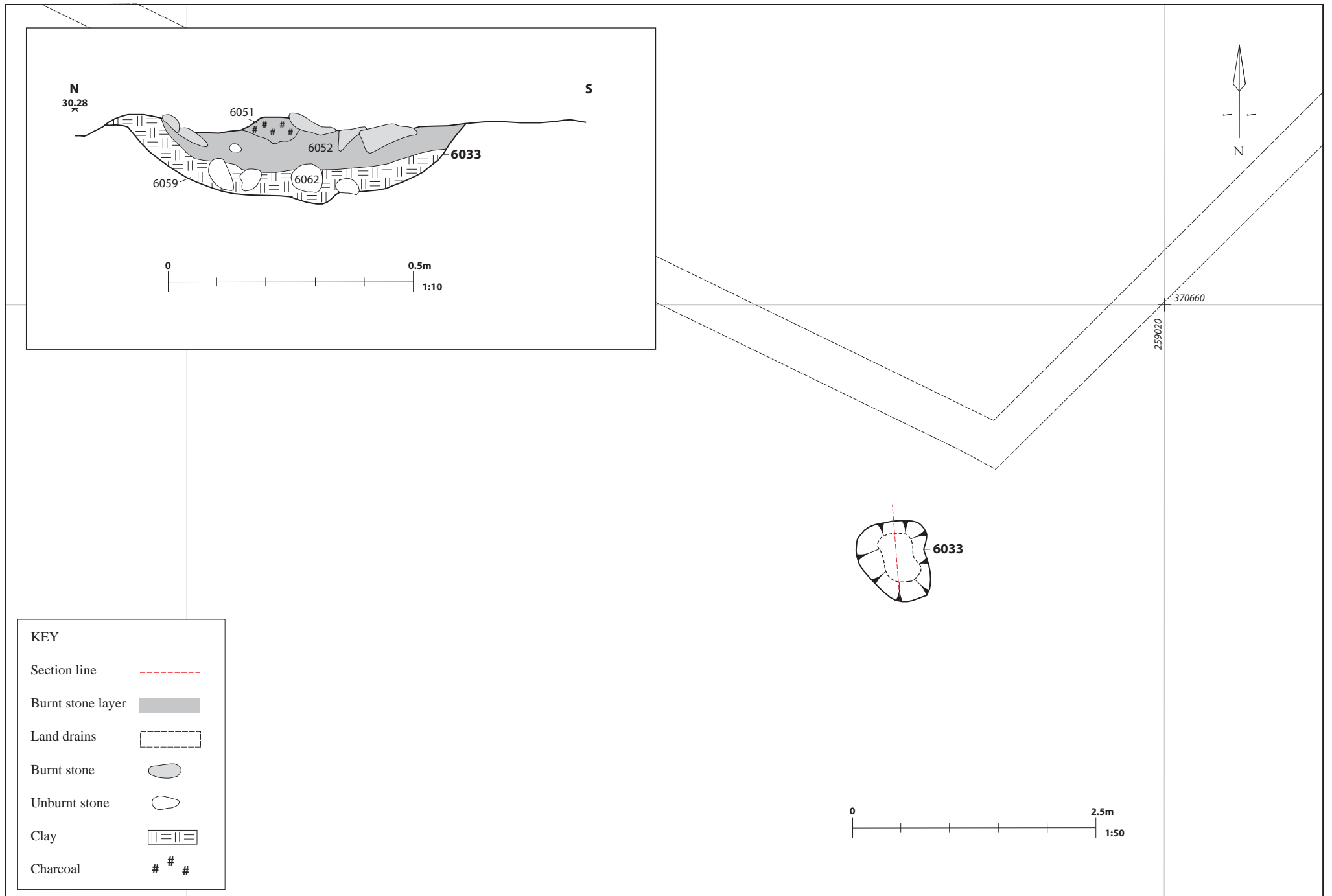


Figure 59. Plan and section of earth oven 6033 in trench 6 (for location see Fig. 6)

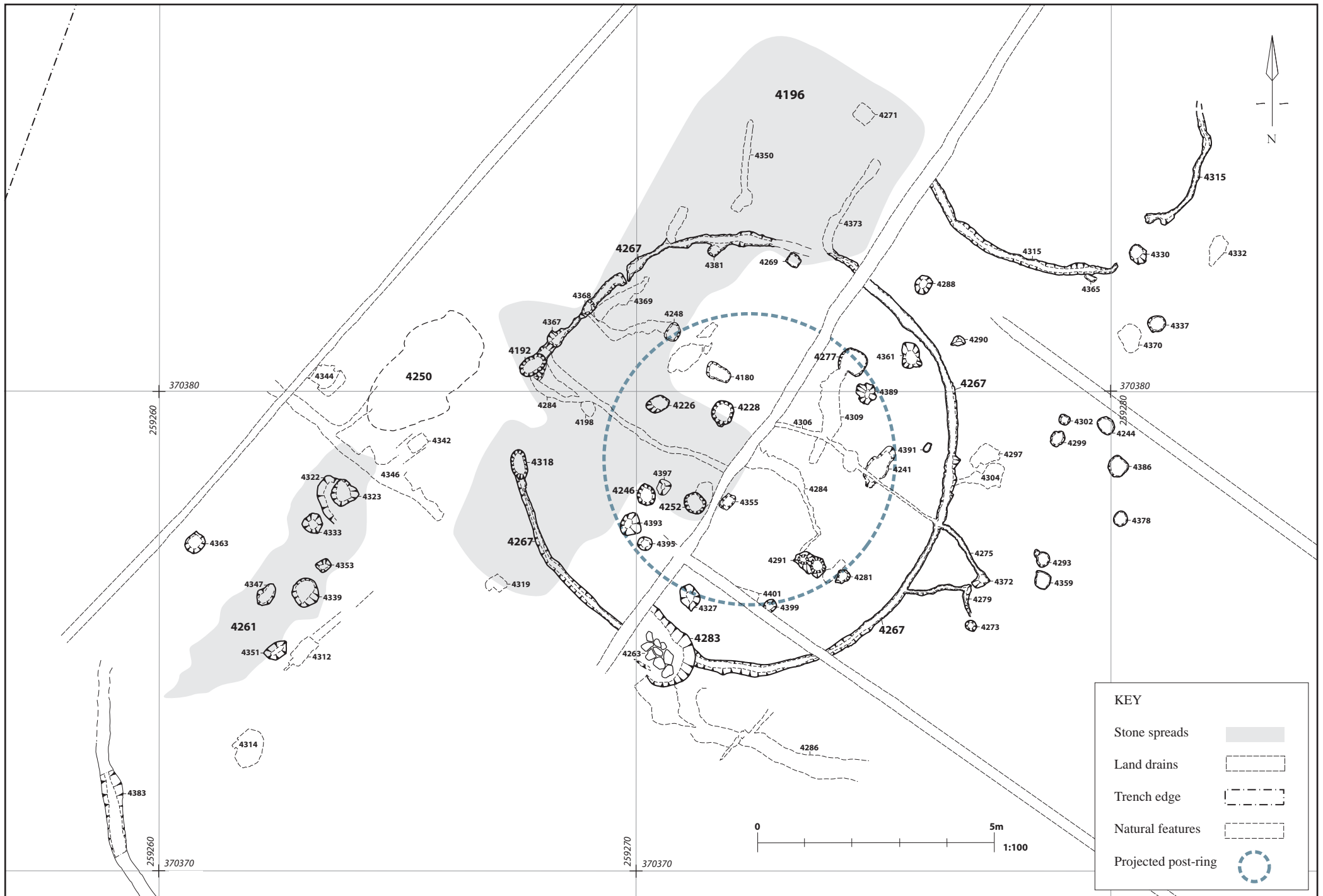


Figure 60. Plan of roundhouse E in trench 4 (for location see Fig. 5)



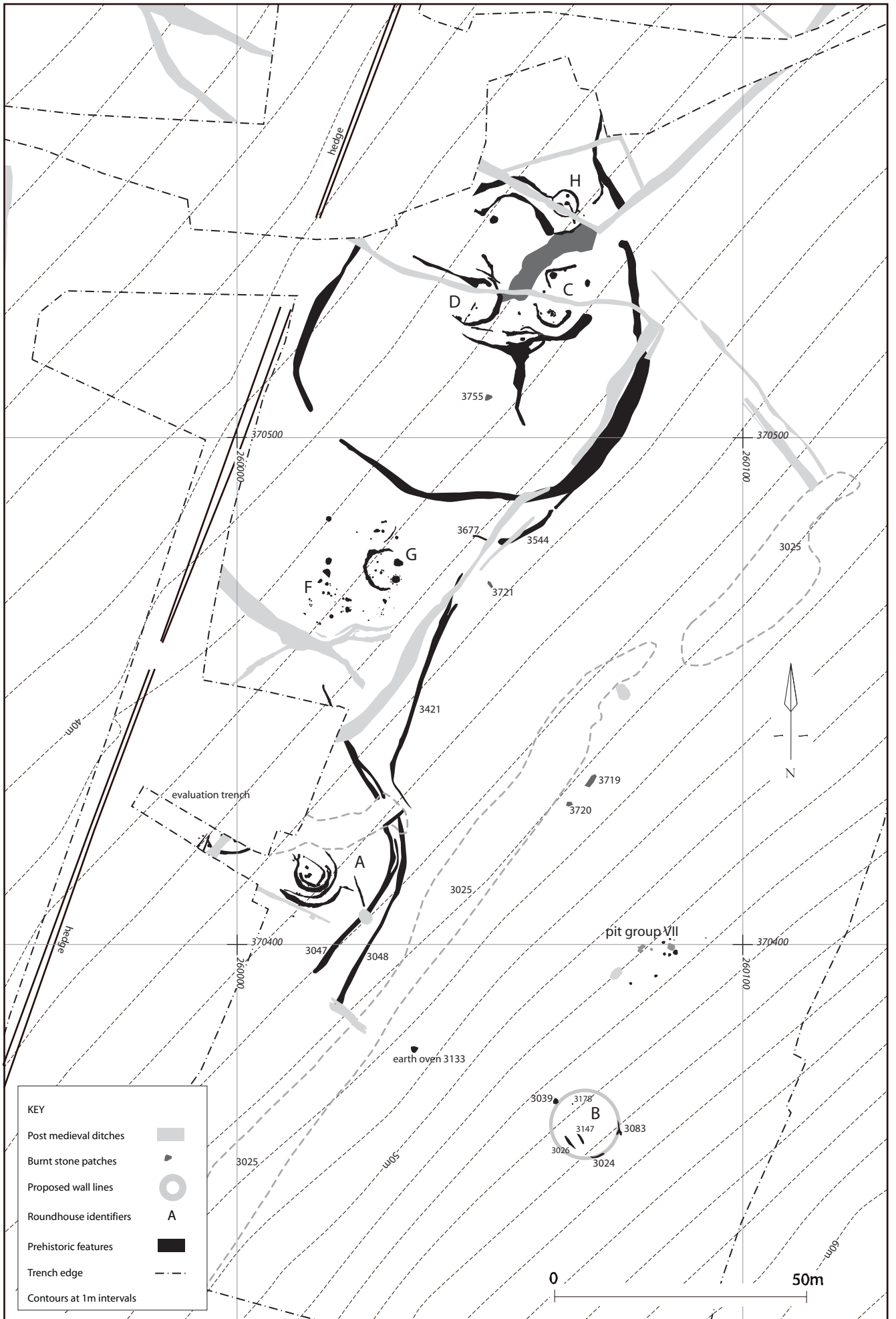


Fig 61. Plan of clay-walled roundhouse settlement in trench 3 (for location see Fig. 6)

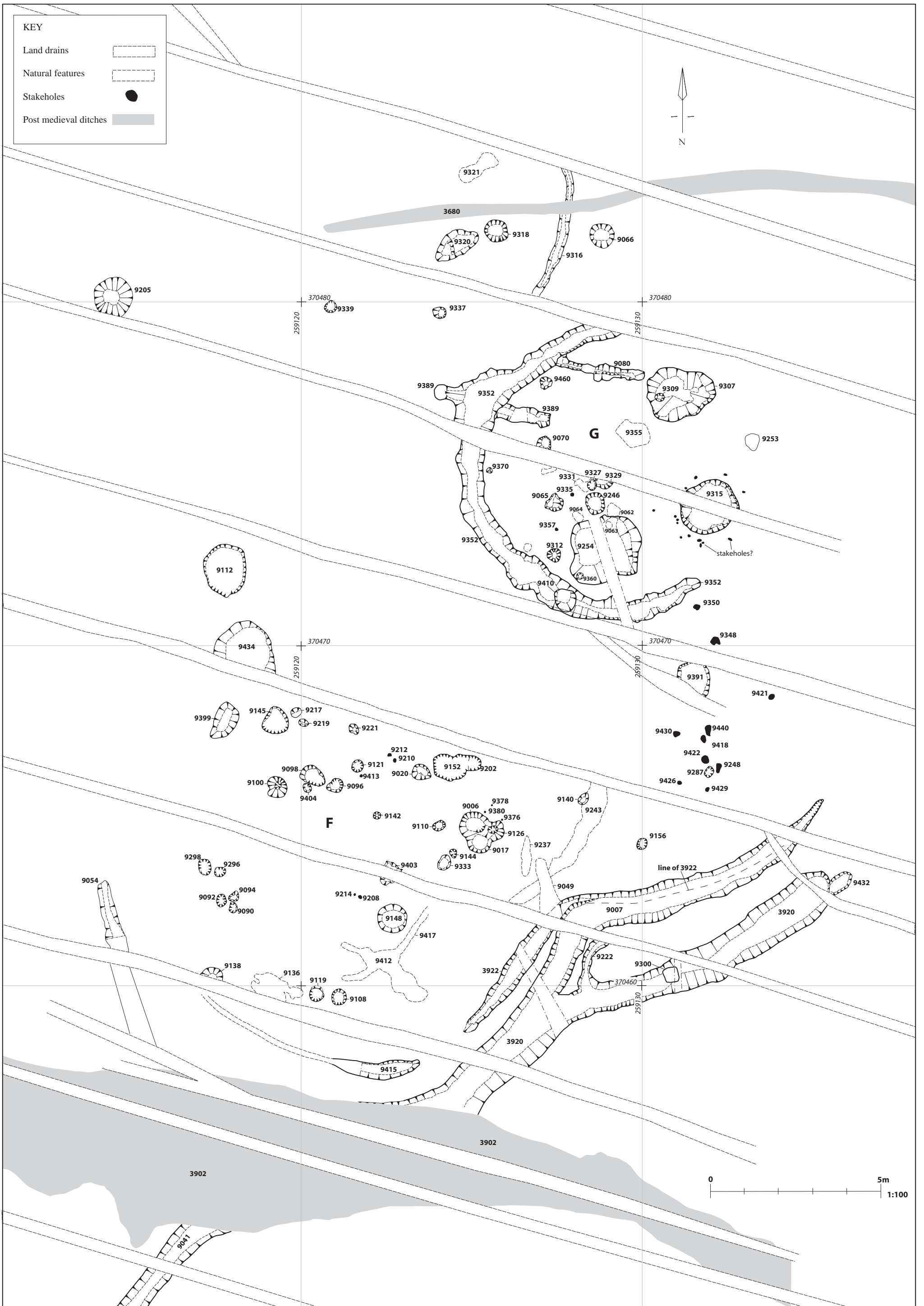


Figure 62. Plan of structures F and G



Figure 63. Interpretive plan of structure F, also showing stone spreads over structure G



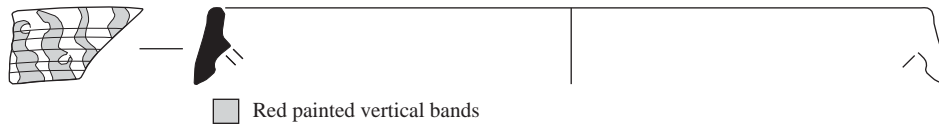




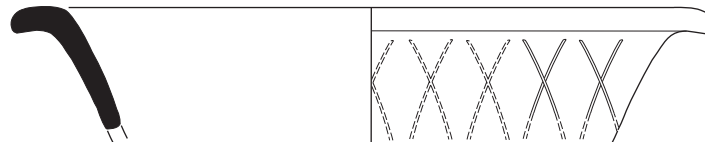
Figure 65. Plan of the southern enclosure ditches and possible entrance



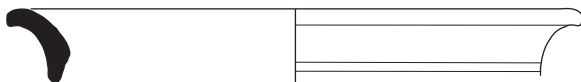
SF671. From stone over burnt mound 3830. Context 3829



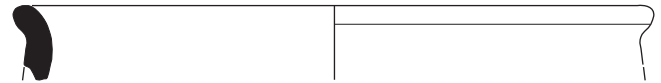
SF574. From roundhouse A, outer storm gully 3059



SF715a. Unstratified from trench 3.



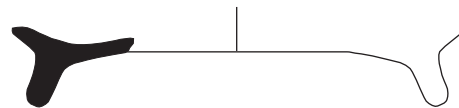
SF715b. Unstratified from trench 3.



SF745. From roundhouse H. Context 9164



SF717. From roundhouse D, ditch 3992



SF692. From roundhouse D, trackway 9083

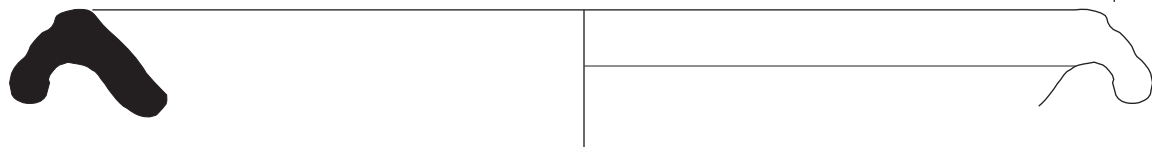
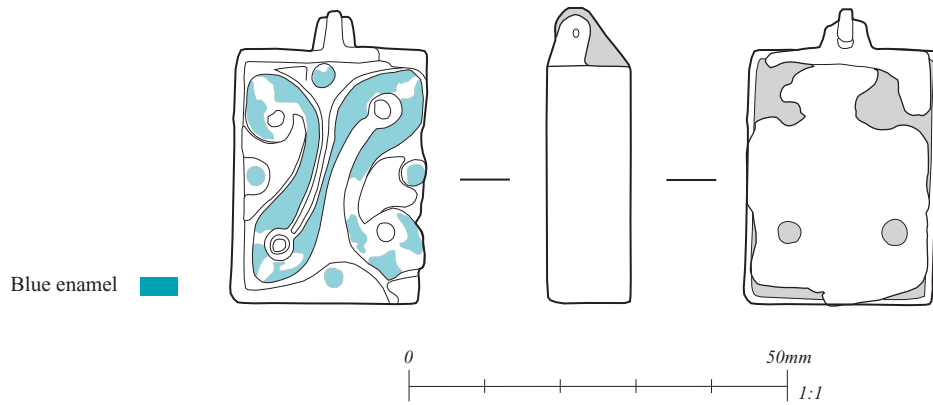
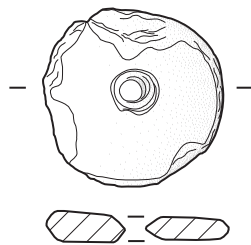


Figure 66. Roman pottery. SF671, decorated mortarium sherd; SF574, SF715a and b, and SF745: Black-burnished ware; SF717, footing of a Samain vessel; SF692, rim of an Antonine Raetian type mortarium

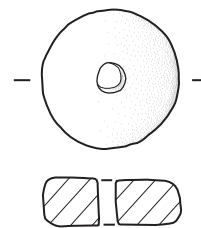
SF615. From roundhouse A gully 3549



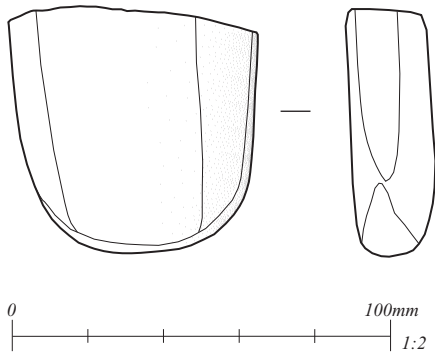
SF535. From boundary ditch 3249



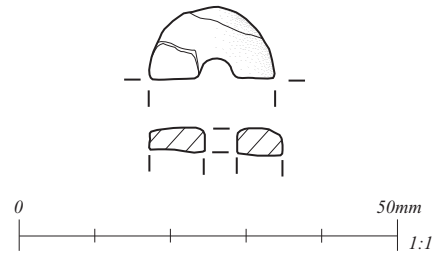
SF463. From context 3086, above roundhouse A



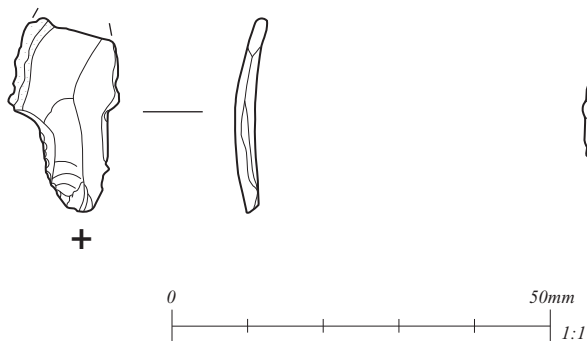
SF473. From context 3086



SF471. From feature 3083, roundhouse B



SF482. From context 3002



SF528. From context 3002

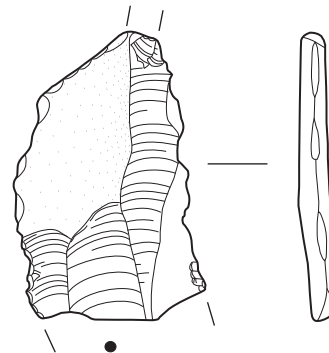


Figure 67. Other finds from the roundhouse settlement. SF615 (copper alloy seal box), SF463, SF471 and SF535 (stone spindlewhorls), SF473 (polished stone). Flint: SF482 (spurred piece) and SF528 (piercer)



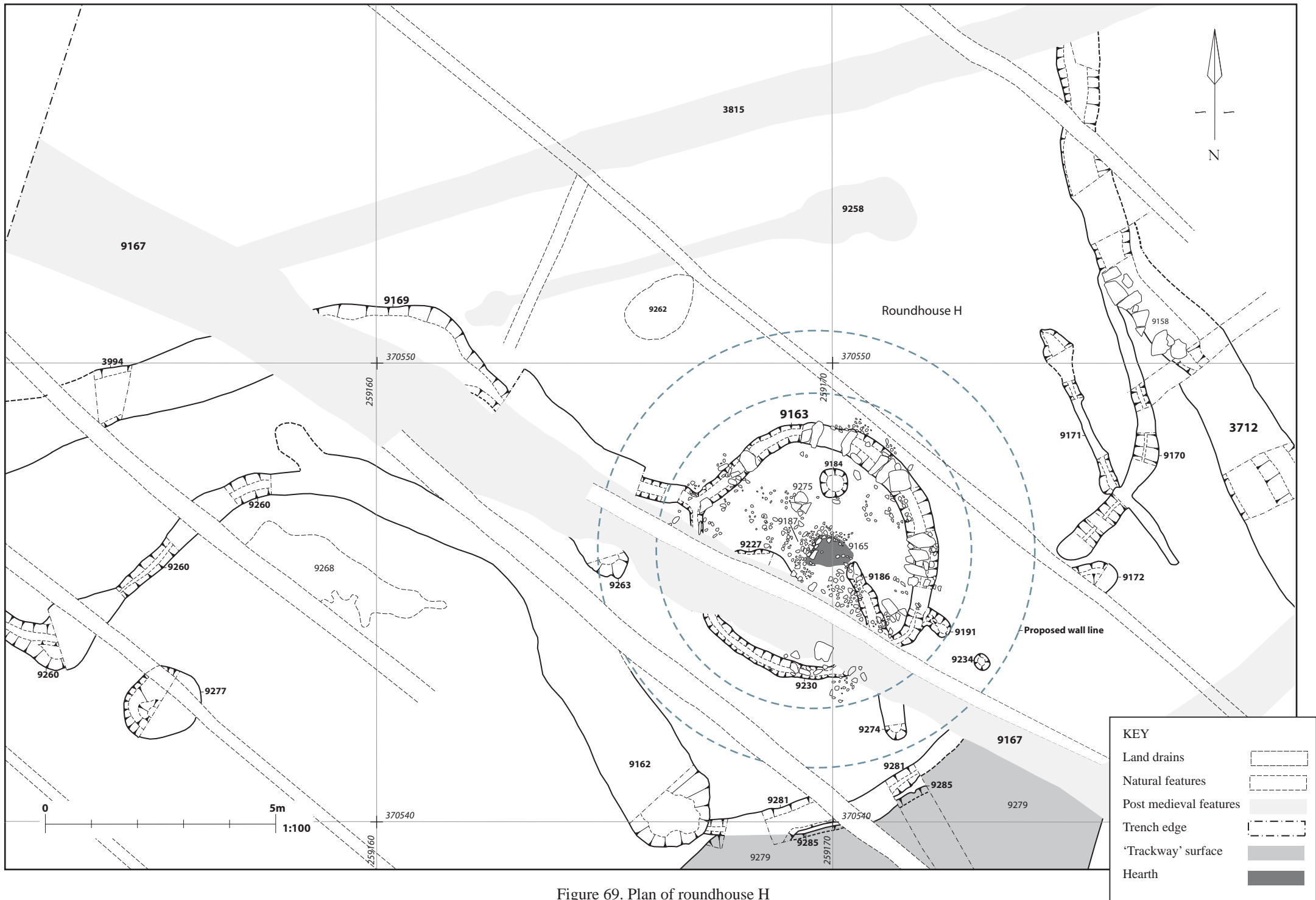


Figure 69. Plan of roundhouse H

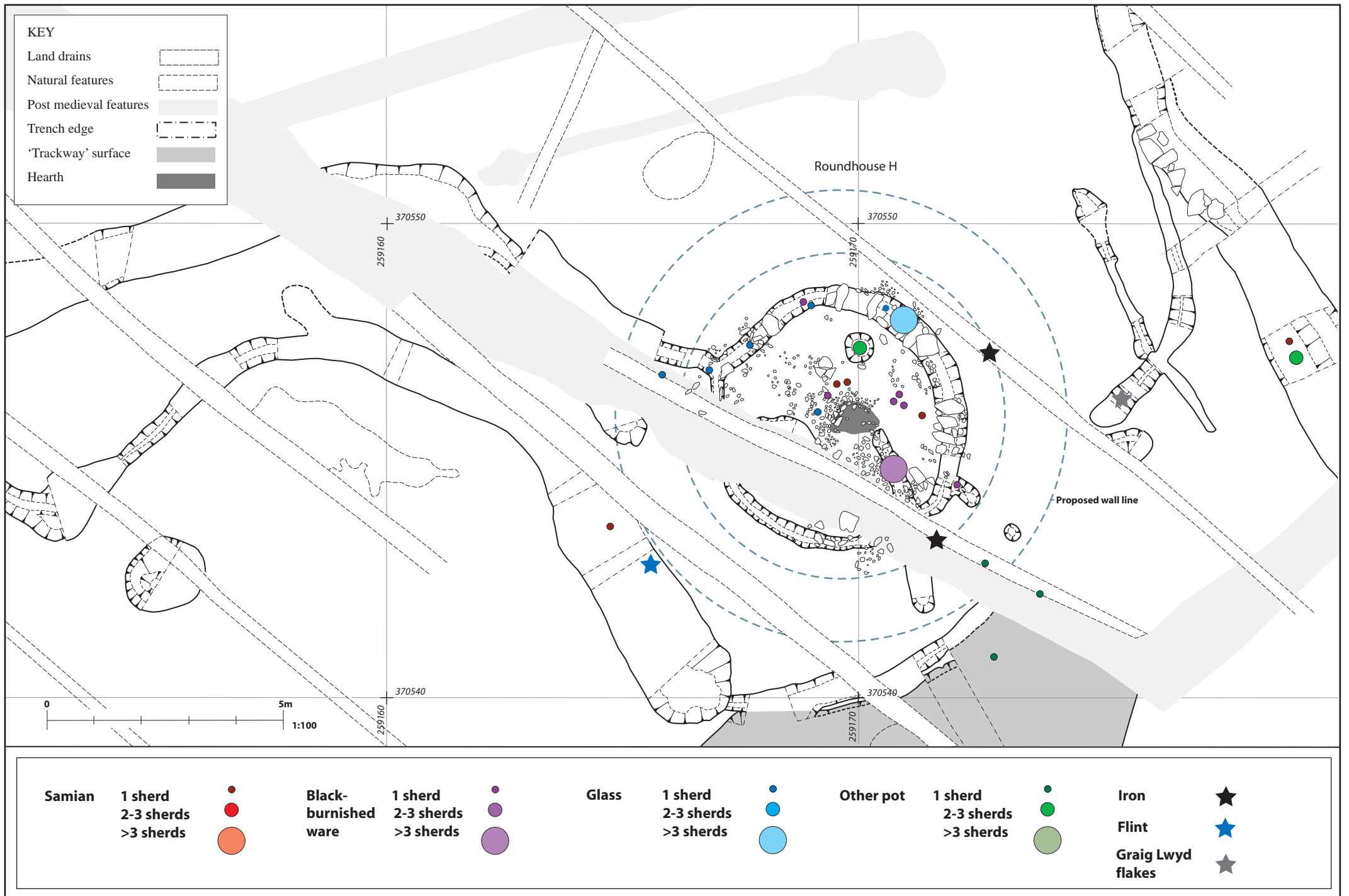


Figure 70. Distribution of finds from roundhouse H



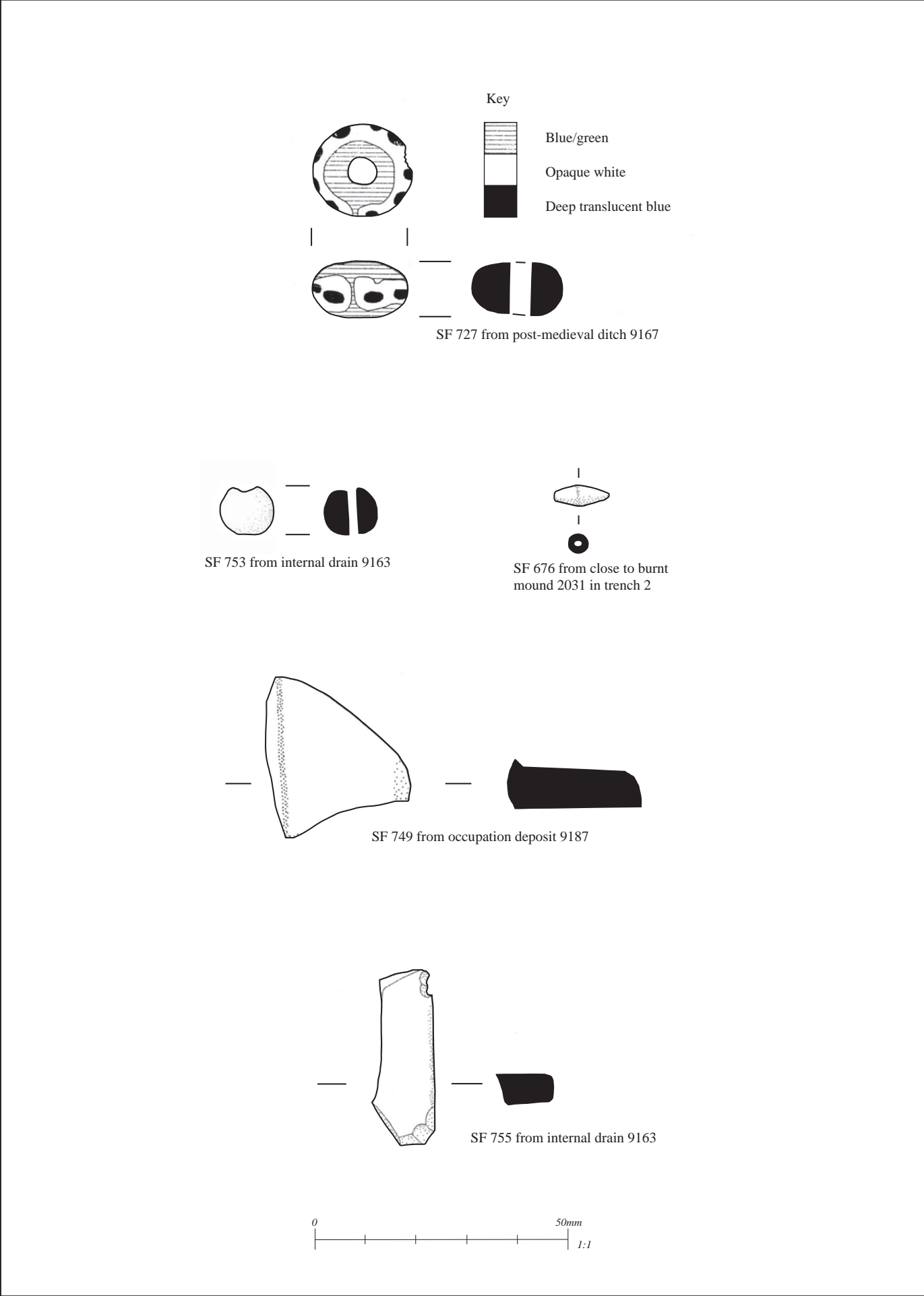


Figure 71. Roman glass from roundhouse H and a bead from trench 2. SF 749 and SF 755: fragments of bottle glass rubbed smooth to form blocks; SF 676, SF 727 and SF 753: glass beads (SF676 from trench 2)

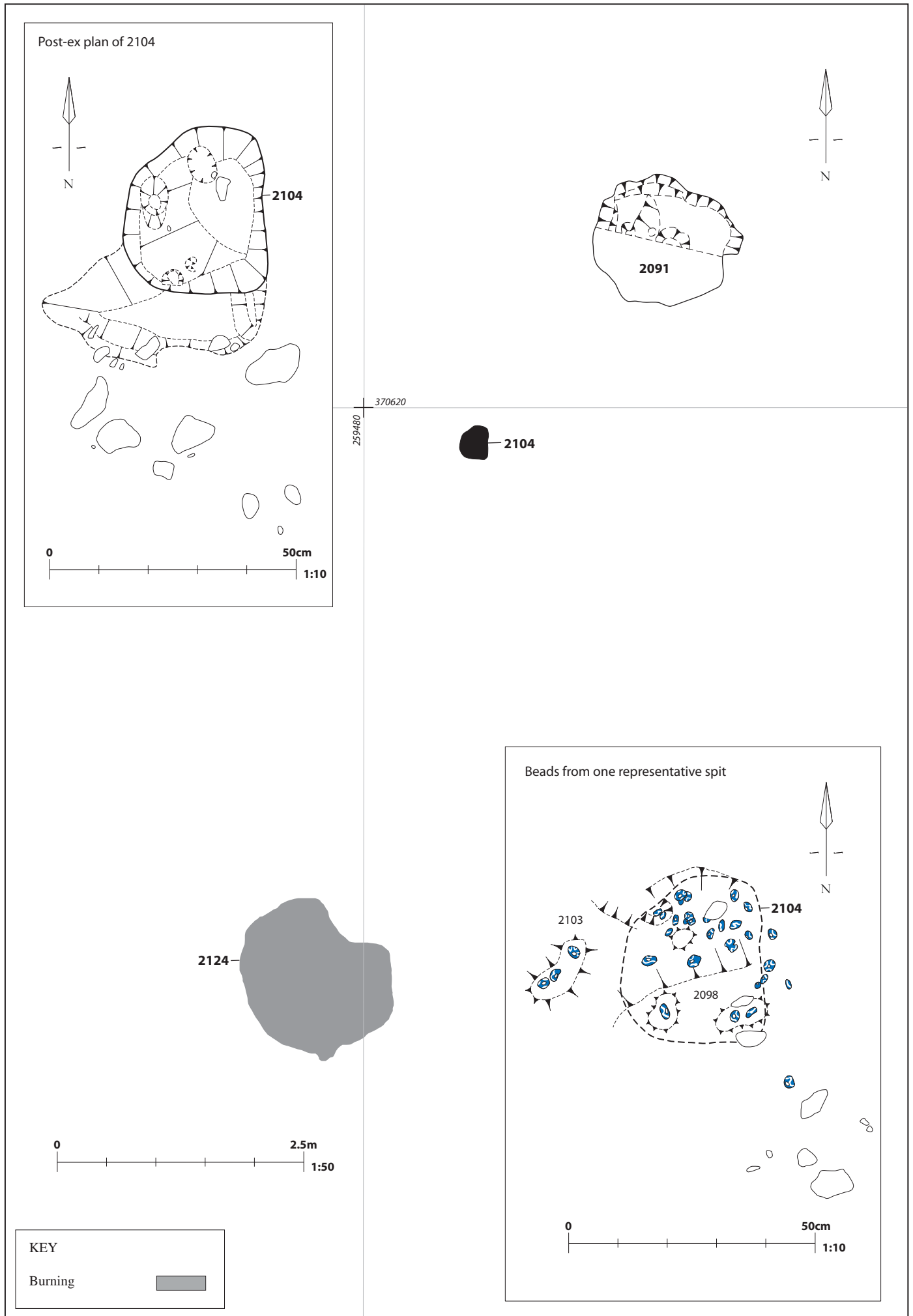


Figure 72. Plan of bead cache pit.

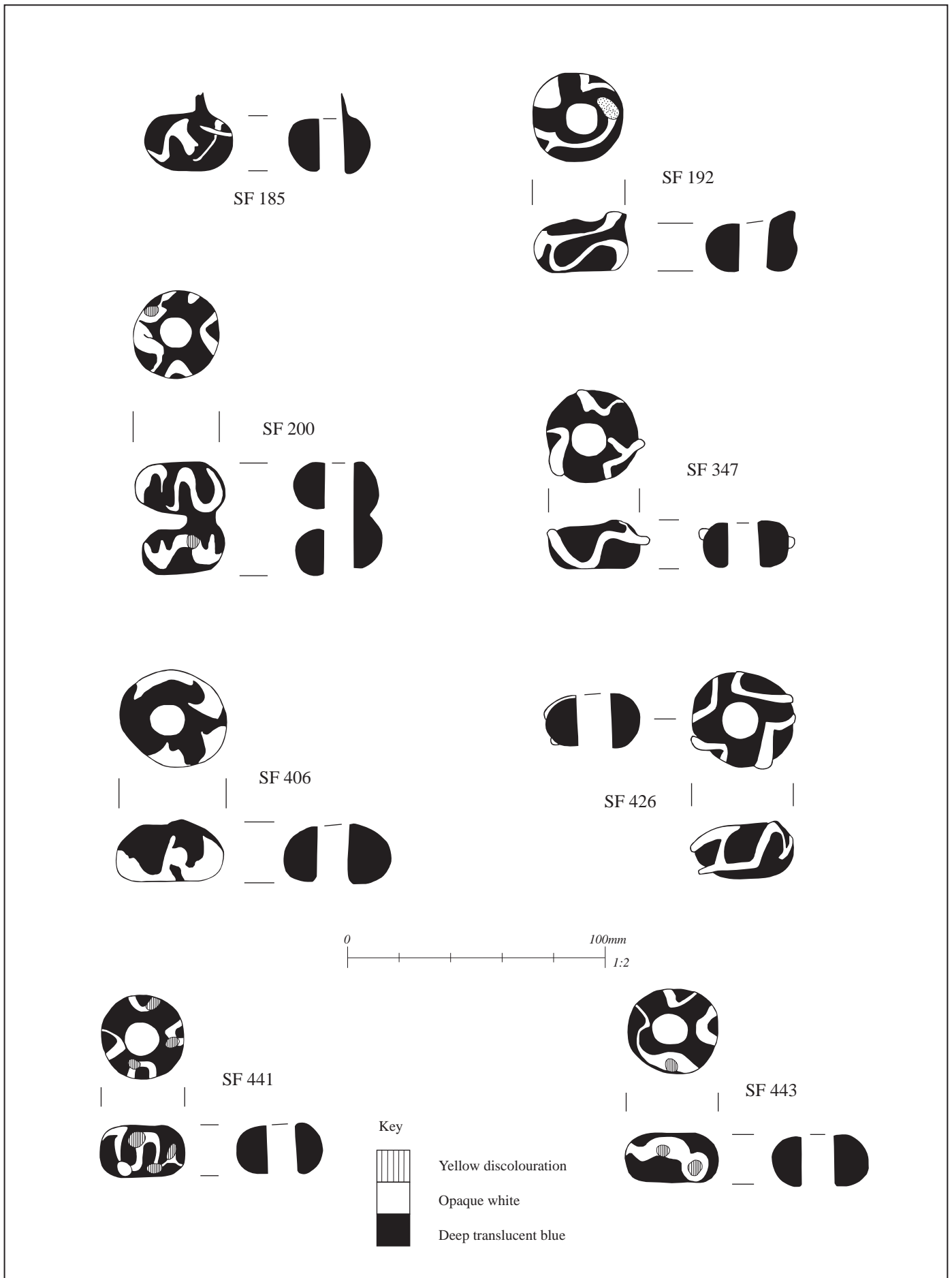


Figure 73. Illustrations of a selection of glass beads from pit 2104. Beads retaining evidence of manufacture (SF200, 192, 185); examples of bright blue beads with trails not completely marvered smooth (SF347, 426); examples of darker blue beads, sometimes with yellow discolorations in white trails (SF443, 441); oval bead with irregular trailing (SF406).

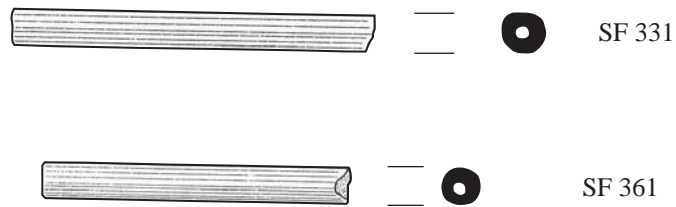
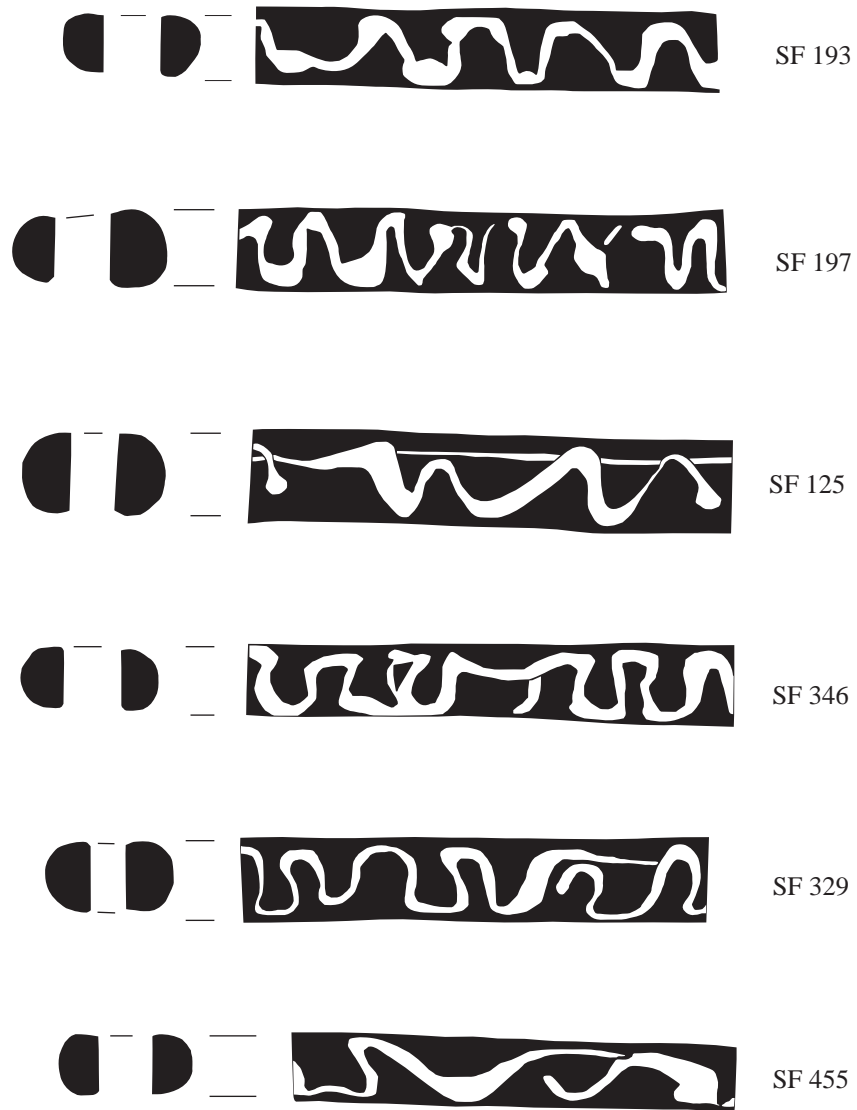


Figure 74. Illustrations of a selection of glass beads from pit 2104. Blue and white beads: unrollings show the range of trailing patterns (SF275, 455, 193, 329, 346, 197). Complete red beads (SF331, 361)

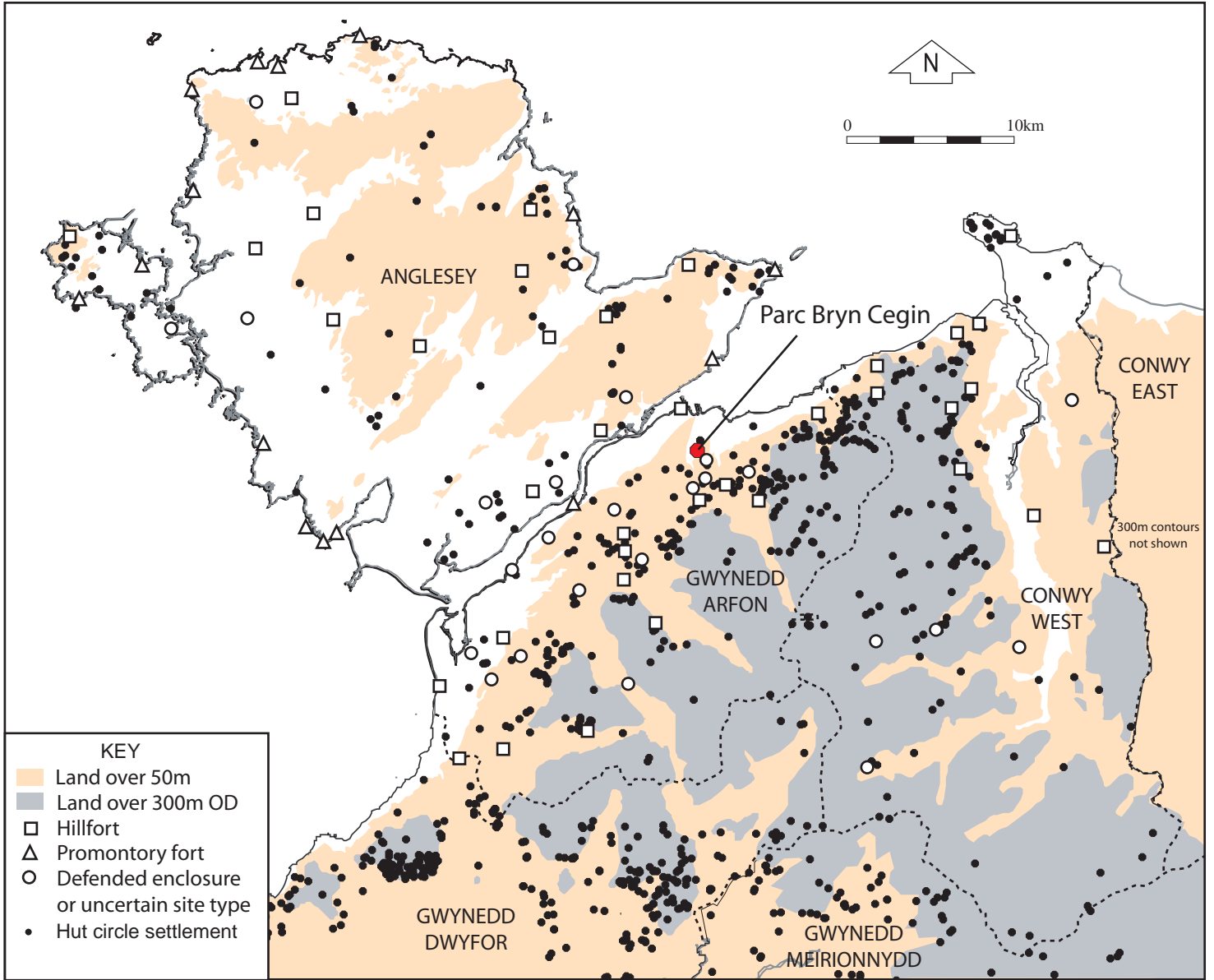


Fig 75. The distribution of roundhouse settlements, hillforts and other defended settlements in north-west Wales



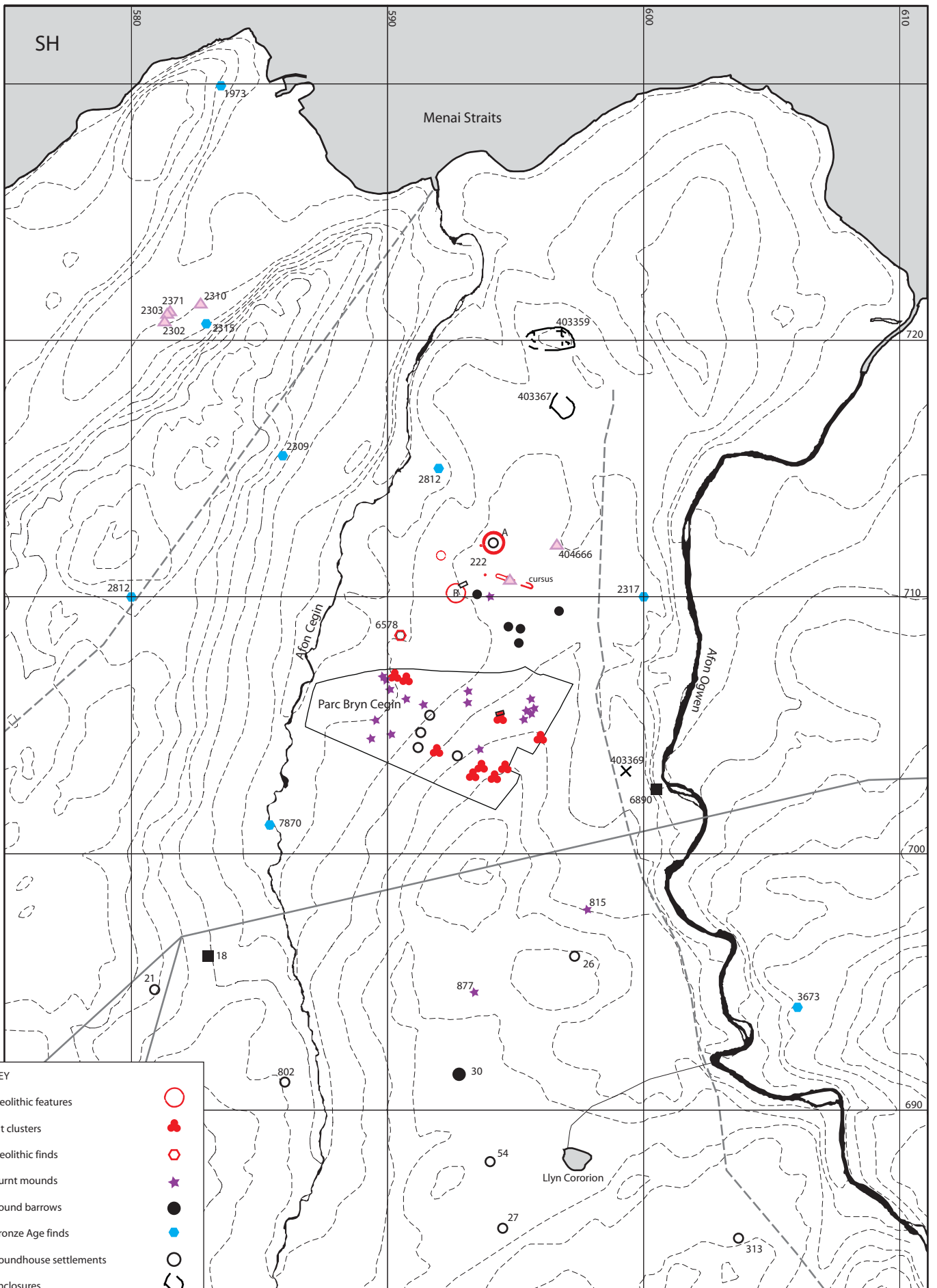


Figure 76. Distribution of sites around Parc Bryn Cegin  
(see table 10 for description of sites)

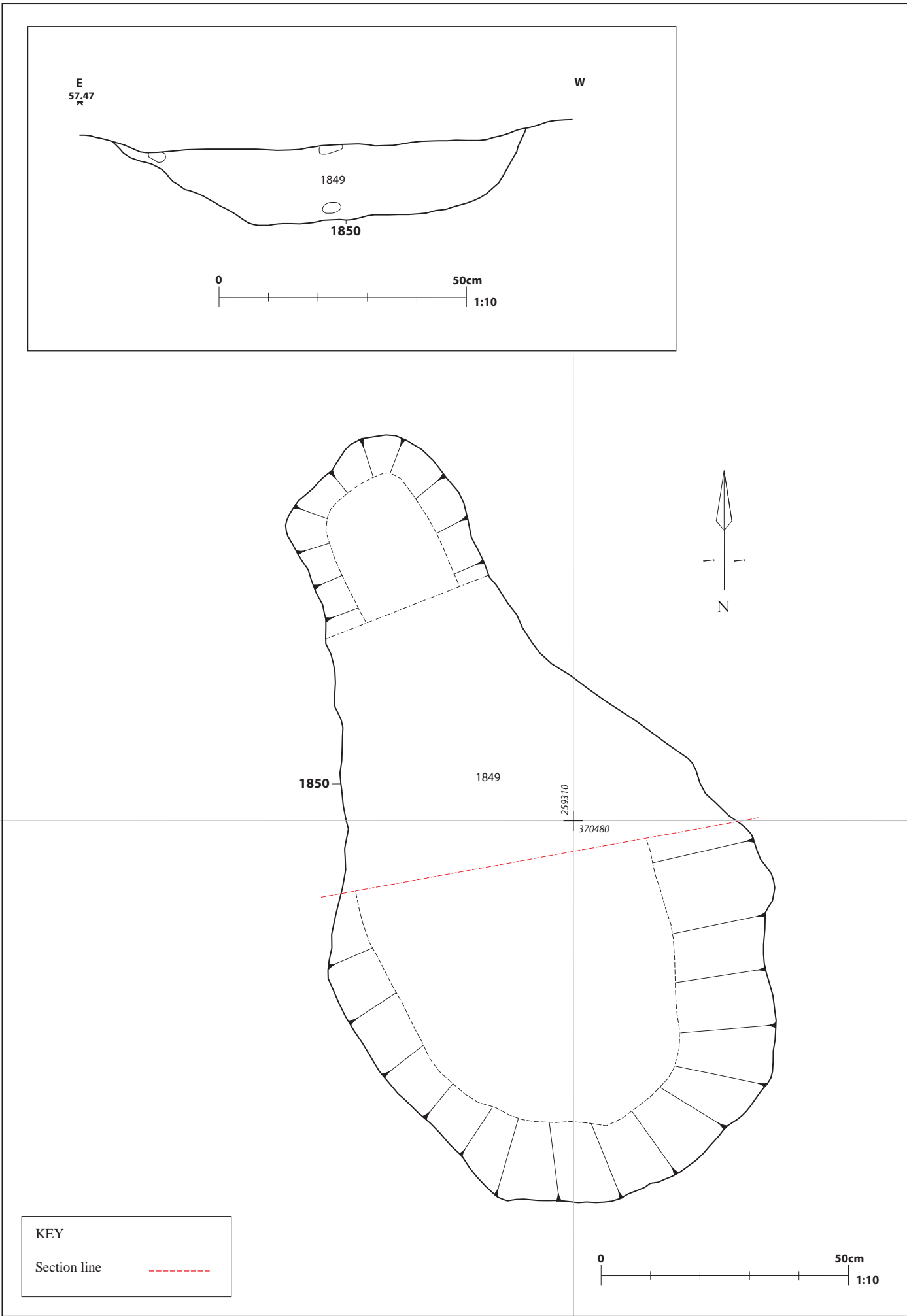


Figure 77. Plan of feature 1850, a possible corn drying kiln in trench 4 (for location see Fig. 5)



Figure 78. Plan of medieval and post medieval features



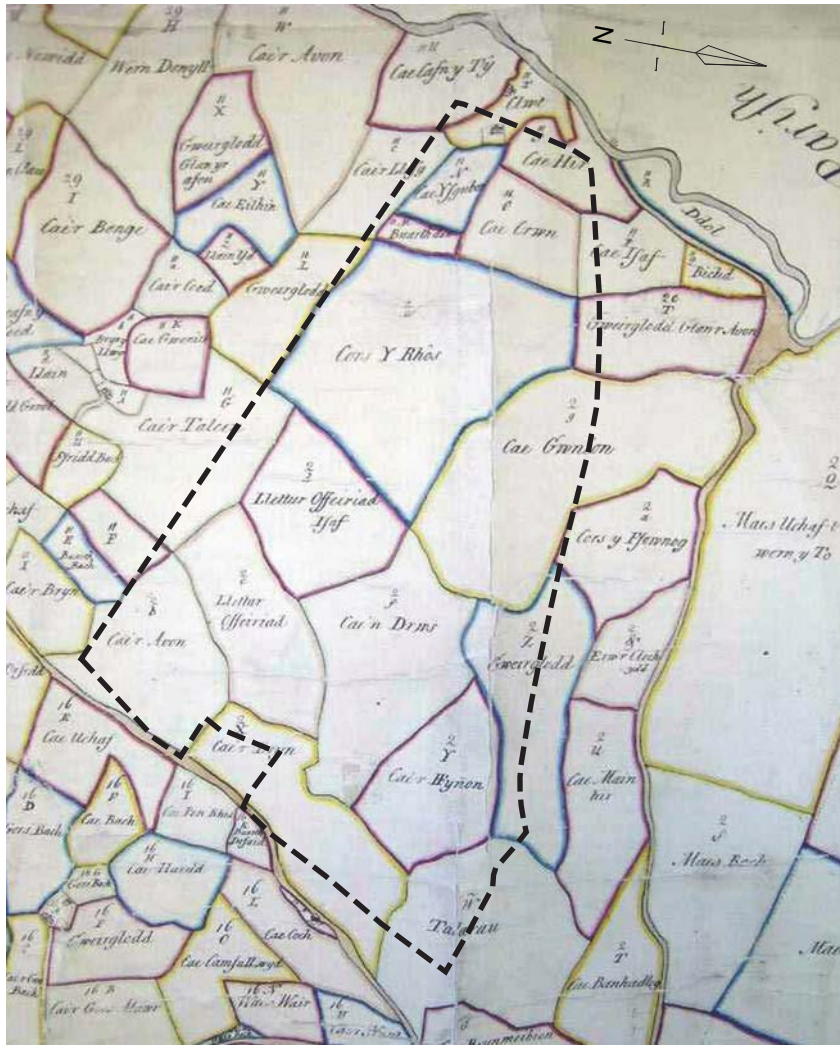


Figure 79. 1768 map (Penrhyn Ms S2205). Site boundary shown as dashed line with slight distortion to fit map



Figure 80. 1840 map (Penrhyn Ms S2214). Site boundary shown as dashed line with slight distortion to fit map

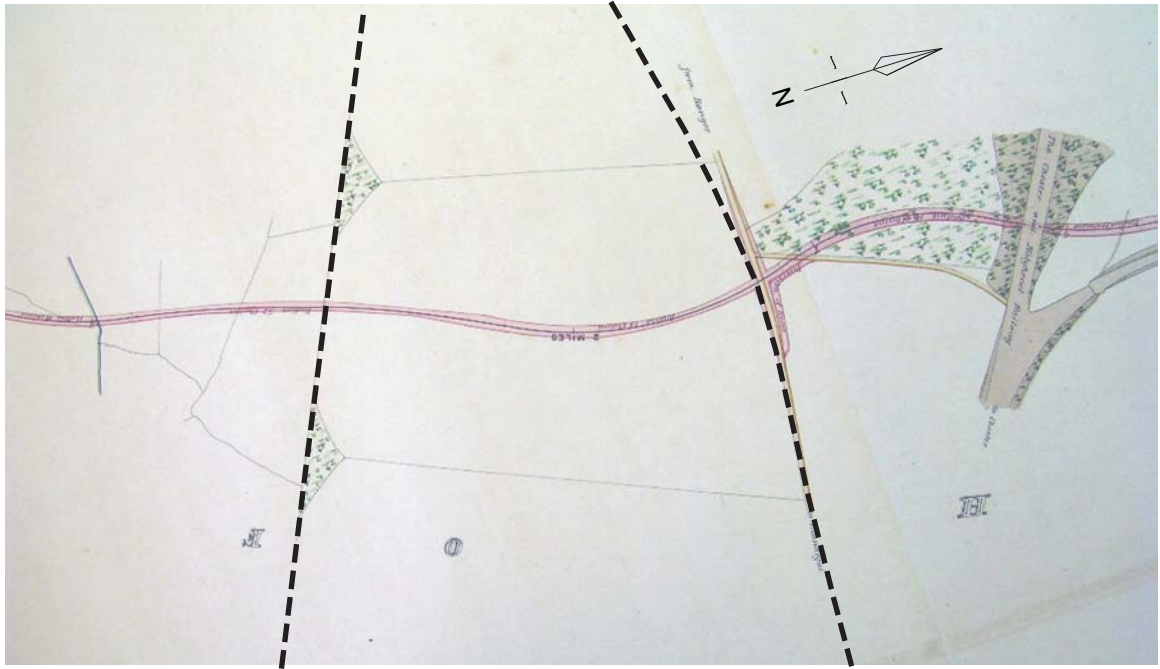


Figure 81. 1873 map of proposed railway route (Penrhyn Ms 263). Site boundary shown as dashed line

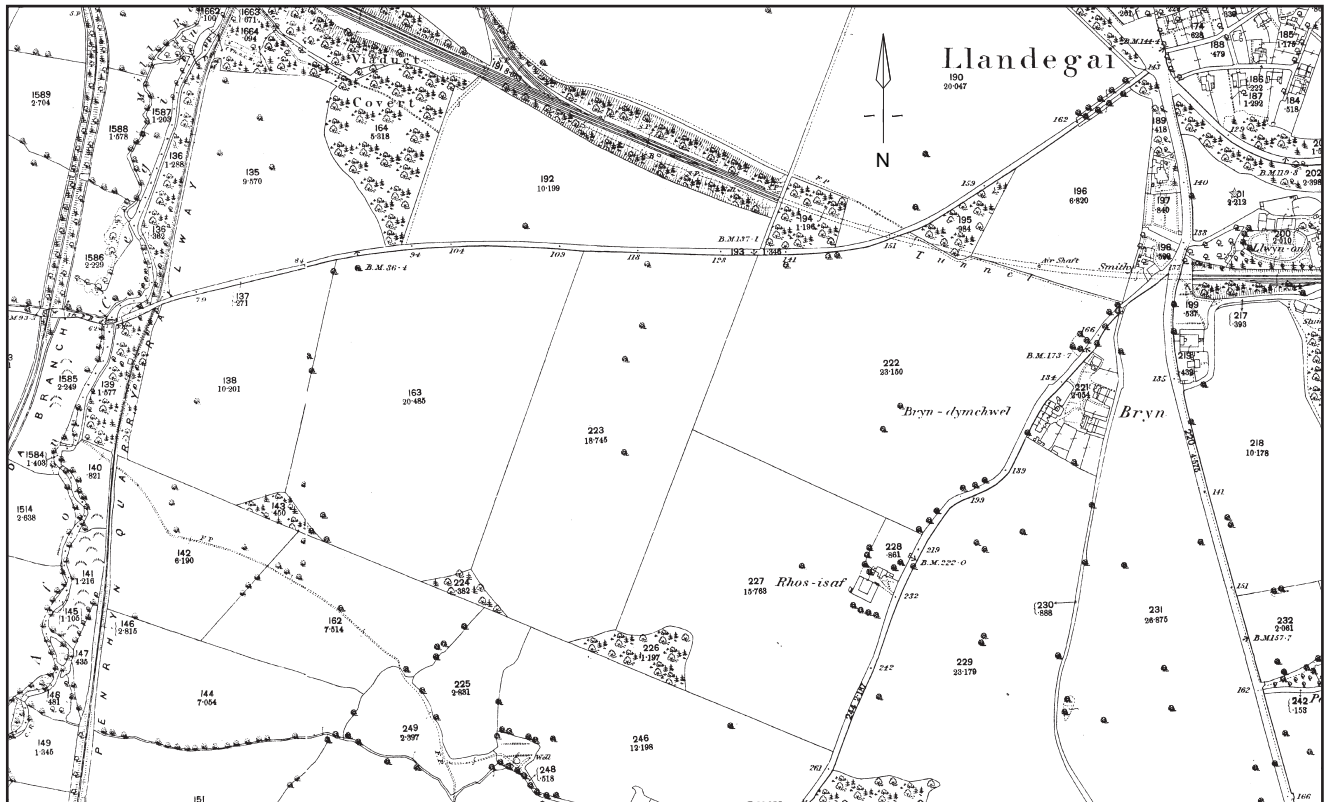


Figure 82. First edition County Series map 1889 (surveyed 1887), Caernarvonshire sheets LXI.6 and LXXI.3





Figure 83. Excavated remains compared to 1768 map (Penrhyn Ms S2205); field names also shown.

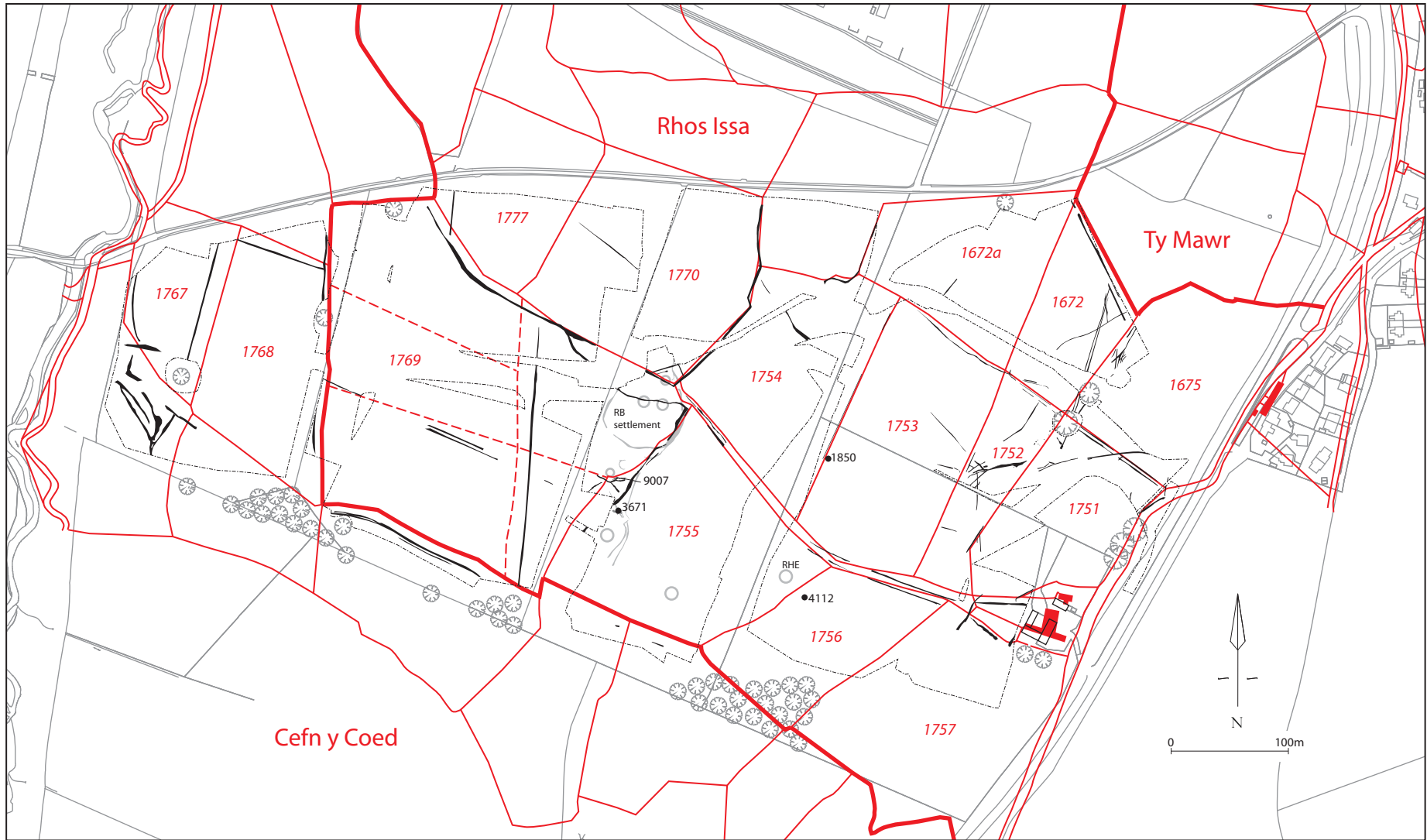


Figure 84. Excavated remains compared to 1840 map (Penrhyn Ms S2214): thick red lines define boundaries of Rhos Issa Farm





Plate 1: Early Neolithic building from the north



Plate 2: Early Neolithic building from the west





Plate 3. Mortlake sherds in situ in pit 1052, Pit Group I



Plate 4. Pit Group III from the north-west



Plate 5. Pit group IV from the east



Plate 6. Pit 4133 (Pit Group V) half excavated, showing stone in centre



Plate 7. Fengate sherd in situ in pit 4133, Pit Group V





Plate 8. Burnt mound 1097, trench 1



Plate 9. Trough 1154 in mound 1097, shown holding water



Plate 10. Burnt mound 4199, trench 4, before excavation



Plate 11. Burnt mound 2176, trench 2, during excavation



Plate 12. Troughs 2197, 2202 and 2186 under mound 2176, fully excavated



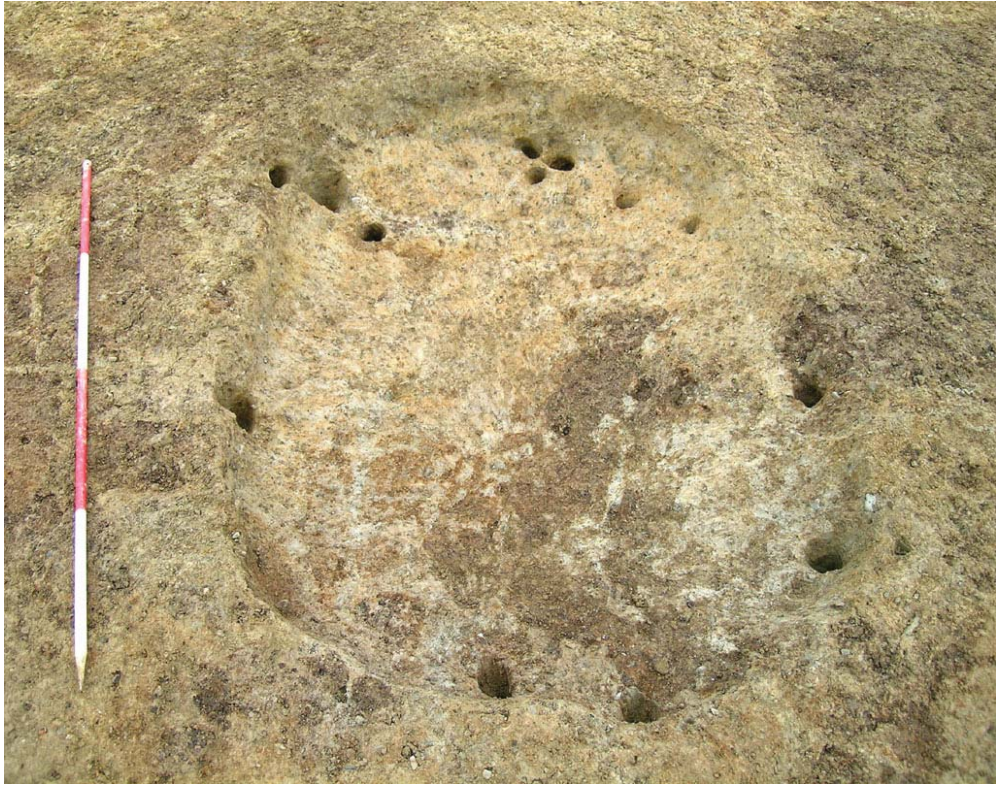


Plate 13. Feature 7055, trench 7, from the north-east



Plate 14. Earth oven 1072, trench 1, showing clay lining





Plate 15: Roundhouse E, trench 4, from north-west



Plate 16: Roundhouse E and ancillary structure from west





Plate 17: Roundhouse A from the north-east



Plate 18: Roundhouse C from the south-west



Plate 19: Roundhouse H from the east





Plate 20. Detail of burning on side of corn drier 3671, trench 3



Plate 21. Corn drier 3671 from the east

## TABLES

Key to tables 1 and 2

Charcoal	1-50g	X	Hazelnut	1-9 frags	X	Cereal	<5	X
	50-100g	XX	shells	10-20 frags	XX	grains	5-10	XX
	100-200g	XXX		20-50 frags	XXX		10-20	XXX
	>200g	XXXX		>50 frags	XXXX		>20	XXXX

For other material X = presence of material

**Table 1: finds and ecofacts from the Early Neolithic building and surrounding features**

Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates		
<b>Building</b>	Aisle posthole	1406	1389	3 + frags (18g)	5 (4g, most burnt, incl. arrowhead)	1 (4g)	2 (5.5g)			XXX		XXXX	X		X		3756-3641		
			1405 (postpipe)	1 + frags (2.5g)	1 (1g)	1 (2g)	2 (<1g)			XXX	X	XXX						3909-3702	
			1519	1520															
				1526 (postpipe)	frag (<1g)	1 (<1g, burnt)	1 (20g)				X		XX						
				1532	1513	2 + frags (7g)	5 (14.5g, some burnt)					X	X	XXXX			X		
					1522 (postpipe)		13 (1g, burnt)	1 (<1g)				X	XX	XX					3756-3641 3765-3649



Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
			1533														
			1569		17 (6g, some burnt)	2 (17.5g)	1 (<1g)										
		1539	1552 (postpipe)		1 (<1g)					X		X					
	Posthole, E gable end	1483	1484														
			1486 (postpipe)	frags (<1g)			1 (<1g)					X	X				3771 - 3639
		1495	1496							X		X					
		1505	1516	frags (1g)					X	X		X					
	Post trench, internal	1404	1441	1 + frags (4.5g)				?									
			1442	1 + frags (11.5g)			3 (2.5g)		XX	X		X					
			1443	frags (4.5g)	6 (1g, some burnt)	1 (1g)			XXXX	X	X	X	X				
			1444		2 (<1g, burnt)	1 (<1g)	4 (1g)		XXX	X		X					
			1445	1 + frags (5g)	5 (1g, some burnt)				XXXX	X	X	X					3759-3644
			1446	frags (2g)	2 (<1g, burnt)		1 (<1g)										
	Posthole, W gable end	1689	1769				1 (<1g)			X		X					

Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
			1770														
			1782							X							
			1783							X							
		1691	1709 (robbing)	6 + frags (39g)	6 (3g, burnt)		2 (<1g)			X							3759-3643
			1722	frags (1g)						X							
			1723	frags (5g)						X	X						3760-3642
			1731 (robbing)	2 + frags (13.5g)	2 (<1g)		6 (1g)		X								
			1740							X							
			1741				2 (<1g)		X		X	X					
	Slot, W gable end	1690	1762							X		X					
	Post trench?, W gable end	1548	1549							X							
	Posthole, S wall	1254	1255		1 (<1g)		7 (<1g)		XX								
		1277	1276				2 (1g)		XXXX								
		1294	1292														
			1293	1 (<1g)		1 (<1g)			XXXX								
		1572	1571							X		X					3789 – 3661

Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
			1587							X							
		1613	1612							XX		X					
			1614 (postpipe)							XX							3957-3796
		1656	1616														
			1655	frag (<1g)	1 (<1g)			pebble tool? (876g)		XX							
			1672														
			1717							X							
	Slot, S wall	1636	1635		3 (<1g, burnt)		1 (<1g)			X		X					
			1649							X		X					
			1654							X							
	Peri-glacial	1603	1602	frags (<1g)													
	Posthole, N wall	1398	1399							X							
		1400	1401							X							
		1402	1403	1 (5g)													
		1676	1673							pine							
			1674							X		X					
		1682/ 1684	1683	1 (9g)						X							

Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
			1685							X							
	Slot, internal	1556	1555	1 + frags (2g)			1 (<1g)			X		X					
	Slot, internal	1611	1610	1 (1g)						X		X					
	Posthole, internal	1291	1290	frags (3g)	1 (<1g)	1 (<1g)				X	X	XXX					3696-3525
		1370	1369	frags (<1g)	1 (0.5g)					X	X	XX					3935-3701
			1371 (postpipe)							X		X					
		1394	1395							X		X					
		1573	1574							X							
		1609	1608				1 (<1g)			X		XXX					
		1774	1775							X							
	Pit, internal	1335	1336		1 (<1g)					X	X	X					
		1337	1338				1 (<1g)			X		XX					
		1339	1340	2 + frags (6g)			8 (1g)			XX		XX			X		3782-3660 3706-3544
	Burnt patch, internal	1314								X	X						
<b>E of building</b>	Pit, on E gable end	1328	1327	3 + frags (10g)	2 (<1g, burnt)					X					XX	slag <1g	
		1393	1392	frags			3			X					X		

Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
				(1.5g)			(<1g)										
	Pit	1249	1216	5 + frags (17g)	1 (11g, burnt scraper)				XXX	X	XX	X					
		1379	1380							X							
	Posthole?	1377	1378							X		X					
		1381	1382							X		X					
<b>W of building</b>	Post line	1666	1665		4 (<1g, burnt)					X	X		X				
		1704	1703	1 + frags (28g)	2 (5.5g)					X	X	X					
			1708	frags (12g)						X		XXX					
		1779	1776 (postpipe)							X							
			1778							X		X					
	Pit	1619	1622							X	X						
			1623							X							
			1624							X							
			1625							X							
			1626							X							
			1627							X							
			1628							X							
			1630							X		X					





Area	Feature type	Cut No	Fill No	Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Oak	Other charcoal	Cereal grains	Nut shells	Other seeds	Burnt clay	Burnt bone	Intrusive material	Radiocarbon Dates
	burrow			(8g)													
		1692		2 (9g)					X	X	X	X					
<b>S of building</b>	Ditch/hollow	1738	1726	1 (126g, large rim sherd)	1 (<1g)				X	X							
			1739	frags (14.5g)	1 (<1g, burnt)												
	OGS	1669	1670	7 + frags (36.5g)	1 (2g)	1 (<1g)	2 (1g)		XXX	X	X	X		5g			
			1700	1 (2g)						X		X					
			1713	19 + frags (86.5g)	2 (3.5g)	1 (3g)				XXX		X					
<b>N of building</b>	Stakehole	1697	1696							pine							

**Table 2: artefacts and ecofacts from the Neolithic pit groups**

(M = Mortlake; F = Fengate; G = Grooved ware; 0=featureless pottery, type assumed from fabric; R=residual early Neolithic; EN=early Neolithic; B=??Beaker)

Pit group	Cut No.	Fill No.	Pottery		Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Charcoal	Cereal grains	Hazelnut shells	Other seeds	Burnt clay (g)	Burnt bone (g)	Burnt stone	Intrusive material
			Vessel ID	Type													
PG I	OGS	1156		EN, B	2 + frags (6g)	2 (14g)	2 (7g)										
	1011	1010								X							X
	1027	1026	0, ?A	M	7 + frags (44g)	3 (1g)	5 (79g)			XXX		X					
	1032	1031					1 (27g)			X		X					
	1036	1035	B,C,D,E,0,R	EN, M	8 + frags (81g)	5 (1g)	1 (2g)			XXX		XXX					
	1049	1048	F,G,0,0	M	7 + frags (67g)	8 (8g)	15 (36.5g)			XXX		XXX					X
	1052	1051	A,R	EN, M	75 + frags (2997g)	2 (3g)	3 (92.5g)			X		XX			<1		
	1094	1092								XX		X					X
		1093															X
	1096	1095								X							
	1258	1257	0	M	frags (3g)	5 (<1g)	6 (15g)			XX		XXX					X
	1321	1303				2 (1g)	3 (13g)			X		XX					
	1376	1375								X		X		2150			
	PG II	4012	4013	B,C,D	F	6 (102g)	17 (1.5g)				XX	X	XXX				
		4014	B	F	1+frags (16g)	19 (8g)				XX		XXX					
4016		4015				1 (10g)				XX		XX				X	
4018		4017								X		X					

Pit group	Cut No.	Fill No.	Pottery		Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Charcoal	Cereal grains	Hazelnut shells	Other seeds	Burnt clay (g)	Burnt bone (g)	Burnt stone	Intrusive material
			Vessel ID	Type													
	4020	4019								XXXX		XXXX					
	4021	4022	A	F	1+frags (47.5g)	40 (3.5g)				XX		XXX					
	4024	4025								X				<1			
	4049	4048	0	F	1 (6g)					X		XXX				X	
PG III	4062	4061	J,K,L,M,0,0	F	29+frags (319.5g)	4 (3g)				XX		XXX					
		4067	0,0	?	2 (4g)	1 (1g)				XX		XX					
	4069	4068	H,I,0	F	5+frags (98g)	8 (2g)	1 (3g)			XXX		XXX					
	4092	4093	A,B,C,D,E,F,G	F	78+frags (3705.5g)	53 (20g)	3 (6g)	3 (1g)		XX		?					
PG IV	4100	4099	D	F	2+frags (10g)	2 (1.5g)				XX		XXX				X	
		4101				1 (36g)				X		XXX					
	4103	4102	B,C	F	3+frags (11.5g)	9 (3.5g)				XXX		XXX		<1		X	
		4104	A	F	4+frags (45g)	1 (3g)				X		X					
		4105				3 (1.5g)				XX		X					
	4109	4106				3 (8g)											
		4107				6 (7.5g)			1 hearth stone (8650g)	XXX		XXX				X	
		4108	E	?F	2 (9g)	11 (6g)				XXXX		XXX		<1		X	
PG V	4127	4126								X						X	
	4133	4132	A,C,D,0	F	25+frags	23				XXX		XXX					

Pit group	Cut No.	Fill No.	Pottery		Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Charcoal	Cereal grains	Hazelnut shells	Other seeds	Burnt clay (g)	Burnt bone (g)	Burnt stone	Intrusive material
			Vessel ID	Type													
					(117g)	(1g)											
		4147	A,B,C,E	F	23+frags (376g)	23 (1.5g)	2 (<1g)			XXXX		XXX			1		
		4149	A,D,?F	F	134+frags (1616.5g)	6 (2.5g)				XXX		XXX			1		
		4161	D	F	1 (7g)					X		XX					
<b>PG VI</b>		6007															
	<b>6034</b>	6006	A	F	17+frags (349g)	16 (4g)				X		X					
	<b>6041</b>	6005	C,D,E	G	78+frags (1079.5g)	45 (81.5g)		2 (<1g)		XXX		XX				X	
	<b>6043</b>	6042	0	G	11+frags (47g)	41 (25.5g)				XXX		XX					
	<b>6044</b>	6063				1 (<1g)				X							
		6064								X							
		6065				1 (1g)				XXXX							
	<b>6047</b>	6048				3 (1g)				X							
	<b>6055</b>	6054	0	F	frags (6g)	7 (7.5g)				X						X	
	<b>6061</b>	6060	0	B	frags (2g)	2 (1g)				X		X					
	<b>6072</b>	6066	B,?D,F	F	15+frags (392g)	78 (33.5g)	1 (29g)			XXXX		XXXX					glass (<1g)
		6073	B,G	F	2+frags (21g)	9 (3.5g)				XX		XXX					slag (<1g)
	<b>6075</b>	6081	0	F	frags (2g)					X		X					
	<b>6076</b>	6077								X		X					



Pit group	Cut No.	Fill No.	Pottery		Pot sherds	Flint	Graig Lwyd	Quartz	Other stone	Charcoal	Cereal grains	Hazelnut shells	Other seeds	Burnt clay (g)	Burnt bone (g)	Burnt stone	Intrusive material
			Vessel ID	Type													
		6078								X		X					
	6079	6080								X		X				X	
	6087	6086	0	?F	5+frags (55g)	16 (0.5g)				XXXX		XXX		10			
PG VII	3111	3112								X					<1		
		3129															
	3120	3121								X							
	3123	3124								X							
	3139	3137								X	X	X			<1		
		3138								X							
	3143	3140															
		3141															
		3142								XX	X			5	<1	X	
	3146	3144	0	EN	1+frags (10g)			1 (<1g)		X						X	
		3145	0	?	2+frags (10g)					X						X	
	3155	3154	0	?	frags (<1g)	1 (1g)				X		XXX			<1	X	
	3190	3189								X		X				X	
	3191	3192													<1		
PG VIII	1305	1304	0	EN	frags (8g)	3 (3.5g)	1 (9g)			X		XXXX					
	1309	1306								XX		XXXXX					
		1307															
		1308								XX							
	1553	1554	A,B,C,D,E,F,R	G	76+frags (1667g)		2 (44.5g)	1 (<1g)		XX		XX					
		1577								X							
	1579	1592	0	?	frags					XX		XXX					slag (2g)



**Table 3: Dates from Parc Bryn Cegin pit groups compared to mid and late Neolithic features from Llandygai**

Pot type	Pit Group	Pit number	Material	Calibrated age (2SD) (cal BC)	Lab number
<b>Parc Bryn Cegin</b>					
Early Neolithic	VII	3146	Hazelnut charcoal	3650-3520	NZA26689
Early Neolithic	VII	3146	Wood charcoal, <10 years, species not identifiable	3640-3370	KIA30440
Mortlake Ware	I	1052	Charred hazelnut shell	3360-3090	NZA26671
Mortlake Ware	I	1052	Charred hazelnut shell	3330-2920	NZA26672
Fengate Ware	V	4133	Residue from pot sherd in SF 569 (vessel V.A)	3350-3020	NZA26679
Fengate Ware	VI	6072	Charred hazelnut shell	3340-3020	NZA26687
Fengate Ware	VI	6072	Charred hazelnut shell	3360-3090	NZA26688
Grooved Ware	VI	6041	Charred hazelnut shell	3490-3120	NZA26680
Grooved Ware	VI	6041	Charred hazelnut shell	2580-2460	NZA26681
Grooved Ware	VIII	1553	Charred hazelnut shell	2900-2670	NZA26693
Grooved Ware	VIII	1553	Charred hazelnut shell	2890-2670	NZA26694
Pit in Grooved Ware group	VIII	1309	Charred hazelnut shell	2890-2630	NZA26691
Pit in Grooved Ware group	VIII	1309	Charred hazelnut shell	2880-2580	NZA26692
No pot	VII	3139	Charred barley grain	1890-1690	NZA26682
No pot	VII	3139	Charred hazelnut shell	1980-1770	NZA26690
Unidentifiable frags	VII	3155	Charred hazelnut shell	1890-1690	KIA30441
Unidentifiable frags	VII	3155	Charred hazelnut shell	1750-1610	KIA30442
<b>Llandygai</b>					
		FA1	Mature oak	3950-3000 (rejected)	NPL-220
		FA1	Mature oak	3340-2920	GrN-27192
Peterborough Ware		FA370	Cremated bone	3360-2930	GrA-22954
Fengate Ware		Henge A ditch	Mature oak	3550-2650	NPL-221
		Cremation circle ACC3	Oak and hazel	3650-2750	NPL-224
		Cremation circle ACC2	Mature oak	3330-2910	GrN-26818
		Cremation circle ACC4	Mature oak	3020-2880	GrN-26817
		FB151	Mixed charcoal	2910-2620	GrN-26827
		FB151	Charred acorn	2880-2570	GrA-20014
Flat-based LN		FB147	Oak and alder	2880-2490	GrA-20013

		FB130	Mature oak	2460-2200	GrN-26826
		FB131	Mature oak	2140-1950	GrN-26825
		FB138	Cremated bone	2280-1940	GrA-22966
		FB2	Mature oak	2600-1700	NPL-222
Beaker		FB27	Mature oak	2140-1820	GrN-26820

**Table 4: Dates relating to Peterborough and Grooved Ware in Wales**

(excepting both Llandygai sites, the dates from which are listed elsewhere). All dates have been recalibrated using OxCal version 3.10 for consistency. Dates represented graphically in Fig 35

Site	Lab No	Date BP	Calibrated date BC (95%)	Material	Deposit dated	Reference
<b>Peterborough ware</b>						
Ffronddyrys	BM-2953	5480±45	4450-4240	Charcoal	Pit fill	Gibson 1995, 38
		4530±250	3900-2400	Charcoal	Pit fill	Gibson 1995, 35
Cefn Du, S5	Wk9278	4698±65	3640-3360	Charcoal	Pit fill	Cutler forthcoming
Ogmore	OxA-5318	5870±90	4960-4500	Residues from pot	Occupation horizon	Gibson 1995, 38
	BM-1112	4660±50	3630-3350	Charcoal	Occupation horizon	Gibson 1995, 35
	HAR-1140	4320±80	3350-2650	Charcoal	Occupation horizon	Gibson 1995, 35
Gwernvale	CAR-116	4590±80	3650-3000	Charcoal	Chamber blocking	Gibson 1995, 35
	CAR-114	4390±70	3340-2890	Charcoal	Chamber blocking	Gibson 1995, 35
Upper Ninepence, Walton Pit 200	BM-3071	4590±60	3520-3090		Pit fill	Gibson 1999a, 38
Upper Ninepence, Walton Pit 65	SWAN-23	4470±80	3360-2920		Pit fill	Gibson 1999a, 38
Upper Ninepence, Walton Pit 500	BM-3070	4490±60	3370-2940		Pit fill	Gibson 1999a, 38
Upper Ninepence, Walton Pit 16	BM-2967	4400±50	3310-3230 or 3180-3160 or 3140-2910		Pit fill	Gibson 1999a, 38
Upper Ninepence, Walton Pit 20	BM-2966	4410±35	3330-2900		Pit fill	Gibson 1999a, 38
Brynderwen, Abermule	OxA-5317	4550±50	3500-3090	Hazelnut fragment	Pit fill	Gibson 1995, 38
	OxA-4409	4440±70	3340-2910	Residue on pot	Pit fill	Gibson 1995, 35
Cefn Bryn	Birm-1237	4440±100	3370-2890	Charcoal	Pit fill	Gibson 1995, 35
	Birm-1235	4230±100	3100-2450	Charcoal	Pit fill	Gibson 1995, 35
	Birm-1238	4090±100	2950-2300	Charcoal	Pit fill	Gibson 1995, 35
	Birm-1236	4060±100	2900-2300	Charcoal	Pit fill	Gibson 1995, 35
Four Crosses	CAR-670	4440±70	3340-2910	Charcoal		Gibson 1995, 35
Sarn-y-Bryn-Caled	BM-2820	4400±45	3330-2900	Charcoal	Recut of penannular ditch	Gibson 1995, 35; Gibson 1994, 161
	BM-2819	4220±40	2910-2670	Charcoal	Recut of	Gibson 1995, 35;

					penannular ditch	Gibson 1994, 161
<b>Peterbrough ware?</b>						
Llanbedrgoch	Beta-90547	4560±50	3500-3090	?	Pit fill	Burrow pers com
<b>Debatable Peterborough or grooved ware</b>						
Hendre, Rhydymwyn	CAR-1279	3870±70	2570-2130	Alder charcoal	Pit fill	Garwood 1999, 173; Brassil and Gibson 1999, 91, 96
<b>Grooved ware</b>						
Trelystan, structure B	CAR-272	4260±70	3090-2620	Hazel and Rowan charcoal <20 years old	Pit fill	Garwood 1999, 173
	CAR-273	4135±70	2890-2490	Hazel and Rowan charcoal <20 years old	Pit fill	Garwood 1999, 173
	CAR-274	3985±70	2900-2250	Hazelnut shells	Hearth	Garwood 1999, 174
Upper Ninepence, Walton Hearth 28	SWAN-24	4240±70	3020-2610		Hearth	Gibson 1999a, 43
Upper Ninepence, Walton Pit 132	BM-2968	4160±35	2880-2620		Pit fill	Gibson 1999a, 43
Upper Ninepence, Walton Pit 154	BM-2969	4050±35	2840-2470		Pit fill	Gibson 1999a, 43
Upper Ninepence, Walton Pit 85	BM-3069	4060±40	2860-2470		Pit fill	Gibson 1999a, 43
Capel Eithin Pit 17	CAR-446	3950±75	2700-2200	Charcoal	Pit fill	Garwood 1999a, 173; White and Smith 1999, 34



**Table 5: Radiocarbon dates from burnt mounds in Wales, represented as a graph in Fig 52**

(All the dates have been recalibrated using OxCal version 3.10 (Bronk Ramsey 2005) to ensure comparability)

Site	BP	cal BC	Lab No	Material	Context	Reference
Graeanog, Clynnog	6840±80	5910-5610	CAR-721	Charcoal	Burnt deposit cut by pit M14	Kelly 1993, 84, 85
Graeanog, Clynnog	3890±70	2570-2140	CAR-714	Charcoal	From pit M12 (from same sample as CAR-713)	Kelly 1993, 84, 85
Graeanog, Clynnog	3740±70	2410-1940	CAR-715	Charcoal, over half oak	From low down in mound	Kelly 1993, 83, 85
Graeanog, Clynnog	3660±70	2280-1870	CAR-713	Charcoal	From pit M12	Kelly 1993, 84, 85
Graeanog, Clynnog	2820±70	1210-820	CAR-717	Charcoal, hazel/alder, birch and ash	From layer on stream bed	Kelly 1993, 82, 85
Graeanog, Clynnog	2790±70	1130-800	CAR-719	Charcoal, hazel/alder, birch and ash	Middle fill of pit M14	Kelly 1993, 84, 85
Graeanog, Clynnog	2800±60	1120-820	CAR-718	Charcoal, nearly half birch	From layer M1d in pit M14	Kelly 1993, 83, 85
Graeanog, Clynnog	2740±60	1020-790	CAR-716	Charcoal	From layer M1d in base of pit M11	Kelly 1993, 83, 85
Graeanog, Clynnog	2690±70	1020-760	CAR-720	Charcoal	Lowest fill of pit M14	Kelly 1993, 84, 85
Carne, nr. Fishguard, mound B	3960±65	2700-2200	CAR-589	Charcoal	Primary deposit in pit 77	James 1986
Carne, nr. Fishguard, mound B	3770±90	2500-1950	CAR-497	Charcoal	Recent accumulation over mounds	James 1986
Carne, nr. Fishguard, mound B	3710±65	2300-1920	CAR-591	Charcoal	Primary deposit in pit 76	James 1986
Carne, nr. Fishguard, mound B	3400±70	1890-1520	CAR-496	Charcoal	Mound material	James 1986
Carne, nr. Fishguard, mound B	3205±70	1640-1310	CAR-498	Charcoal	Mound material	James 1986
Bryn Bachau, Afon Wen	3810±120	2600-1900	Beta-204434	Hazel and Oak	Primary fill of pit 402	Davidson <i>et al</i> 2007
Bryn Bachau, Afon Wen	3870±70	2570-2130	Beta-204432	Hazel and Oak	Burnt Spread	Davidson <i>et al</i> 2007
Felin Fulbrook, Tregaron	3875±70	2570-2130	CAR-469	Charcoal	From burnt mound	Williams <i>et al</i> 1987
Parry's Castle Farm	3750±80	2500-1950	Beta-159459	Charcoal	From the mound	<a href="http://www.cpat.org.uk/research/swrada.htm">http://www.cpat.org.uk/research/swrada.htm</a>
Carne, nr. Fishguard, mound A	3790±70	2460-2030	CAR-292	Charcoal	Ashy matrix of the final fill of pit (52)	James 1986
Figin Fawr (G1474)	3770±60	2460-2020	Beta-106684	Charcoal	From burnt mound	Davidson 1998a, 53; Smith 1998
Plasgwyn Farm	3660±70	2280-1870	Beta-159460	Charcoal	From pit associated with burnt mound	<a href="http://www.cpat.org.uk/research/swrada.htm">http://www.cpat.org.uk/research/swrada.htm</a>
Gwalchmai, site 11 (G1339)	3650±70	2210-1810	Swan-125	Charcoal	From burnt mound	Davidson 1998a, 53

Caergeiliog, site DA5a	3600±61	2140-1770	Wk-9554	Charcoal, various short-lived species	From pit F2	Maynard forthcoming
Waen Hir, site C14b	3206±157	1900-1050	Wk-9550	Charcoal, ash, hazel	From core of mound	Maynard forthcoming
Caergeiliog, site DA5c	3420±58	1890-1530	Wk-9555	Charcoal, oak sapwood	From pit F25	Maynard forthcoming
Nant Porth, Bangor	3310±60	1740-1450	SWAN-139	Oak plank	From base of trough	Davidson 1998b, 98
Nant Porth, Bangor	3290±60	1730-1430	SWAN-140	Oak plank	From base of trough	Davidson 1998b, 98
Nant Porth, Bangor	2960±60	1380-1000	SWAN-141	Ash plank	From base of trough	Davidson 1998b, 98
Troedrhiwgwinau Farm, near Aberystwyth	3270±70	1740-1410	CAR-1046	Charcoal	From 10cm above base of mound	Caseldine and Murphy 1989, 1
Cefn Hendre (G1506)	3220±100	1740-1260	Beta-114179	Charcoal	From burnt mound	Davidson 1998a, 53; Richards 1997, 4-5
Cefn Cwmwd, site C2/3	3187±77	1640-1260	Wk-9548	4 cereal grains	Lower part of mound	Maynard forthcoming
Bryn Cefni, Llangefni	3210±60	1630-1380	Beta-168012	Charcoal (short-lived species)	From fill of gully (15)	Smith and Kenney 2002
Bryn Cefni, Llangefni	3050±70	1460-1080	Beta-164490	Hazel charcoal	From base of pit (11)	Smith and Kenney 2002
Bryn Cefni, Llangefni	3060±40	1430-1210	Beta-168011	Charcoal (short-lived species)	From fill of gully (13)	Smith and Kenney 2002
Bryn Cefni, Llangefni	3000±70	1420-1020	Beta-168013	Charcoal (short-lived species)	From basal fill of pit (11)	Smith and Kenney 2002
Pwllauduon Farm, Tregaron	3130±40	1500-1310	Beta-191063	Charcoal	From the mound	Groom and Wilson 2004
Pwllauduon Farm, Tregaron	2890±90	1400-800	Beta-191062	Charcoal	From the mound	Groom and Wilson 2004
Meyllteyrn Uchaf, Botwnnog	3000 ±70	1420-1020	CAR-1288	Charcoal	from deposit of burnt stones and charcoal, similar to burnt mounds	Kelly 1991, 16
Penymynydd, site DA7a	2828±73	1220-820	Wk-9556	Charcoal	From pit F5	Maynard forthcoming
Pen y Fan Agosaf, Llanbedrgoch (G1317)	2840±70	1220-830	Swan-124	Charcoal	From burnt mound	Davidson 1998a, 53; Gwyn 1996a; Gwyn 1996b
Glyn, Llanbedrgoch	2840±50	1200-840	Beta-138876	Charcoal	From the mound	Redknap 2004, 149
Caergeiliog, site DA5b	2672±117	1150-400	Wk-9553	Charcoal, various short-lived species	From pit F19	Maynard forthcoming
Waen Hir, site C14c	2806±61	1130-820	Wk-9549	Charcoal, birch, hazel	From pit F301	Maynard forthcoming
Stackpole Warren Site G	2710±70	1030-770	CAR-843	Charcoal	From layer directly under burnt mound	Benson <i>et al</i> 1990
Gwalchmai, site 13 (G1339)	2680±70	1020-660	Swan-128	Charcoal	From burnt mound	Davidson 1998a, 53
Stackpole Warren Site B	2240 ±60	410-160	CAR-103	Bone	From layer 28, includes burnt stone, but predates main burnt mound	Benson <i>et al</i> 1990



Area	Feature type	Cut No	Fill No	Pot sherds	Metal	Stone	Roman Glass	Metal working debris	Flint	Charcoal	Cereal grains	Other seeds	Burnt clay	Burnt bone	Intrusive material	Dates
	Phase II storm gully	3059	3271	6 BB1 and Samian (23g)	1 nail (22g)			hearth cake (227g)	1 (8g)							AD 160-180/200 Hadrianic-Antonine
		3461	3460						1 (4g)							
	Phase II inner drain	3230	3231	17 BB1 and greyware (39g)	1 nail (2g)											AD 120+ 3rd-4th century? AD
		3266	3267	1 Samian (1g)	1 nail (2g)										post-med pot (<1g)	cAD 100-125
		3275	3276					2g	1 (1g)							
			3322	1 tile frag (107g)												
	Phase IIa inner drain	3387	3386	1 BB1 (7g)												mid-later 2 <sup>nd</sup> century
	Posthole	3363	3388					2g								
	Pit	3487	3486	1 post-med (552g)	1 button (4g)											Post-med
	Central feature	3518	3517					1g					2g			













Area	Feature type	Cut No	Fill No	Pot sherds	Metal	Stone	Roman Glass	Metal working debris	Flint	Charcoal	Cereal grains	Other seeds	Burnt clay	Burnt bone	Intrusive material	Dates
	Deposit with burnt daub		9268										20g			
	Gully	9162	9161	1 Samian (1g)				<1g	1 (1g)				20.5g			cAD 70-110
	Inner drain outlet	9169	9231				1 (3g)									
	Gully	9170	9178			1 Graig Lwyd flake (4g)										
	Pit	9184	9183	2 oxidised ware (1g)				<1g								
	Internal gully	9186	9185	4 BB1 (2g)				<1g								AD 120+
	Posthole	9191	9189	1 BB1 (3g)												AD 120+
	Inner drain	9163	9182	1 BB1 (9g)			5 (13.5g)	<1g								Mid-late 2 <sup>nd</sup> century AD
	Gully	9260	9259					<1g								
	Pit	9277	9276					<1g								
	Gully	9281	9280					<1g	3 (<1g)							
	Trackway?	9285	9267	4 oxidised ware (5g)												
<b>Southern enclosure ditches</b>		3157	3156												2 post-med pot (3g)	
		3175	3259	1 oxidised ware (3g)												
		3217	3218										1g			
	Pit with boulder	3491	3490					hearth cake and slag (816g)						2g		





**Table 7: Roundhouse size, wall width and door position for excavated clay-walled roundhouses in Gwynedd, with stone roundhouses included where these overlie clay-wall houses.**

Roundhouse	External diameter	Internal diameter	Wall width	Door position	References
Parc Bryn Cegin A1	9.8m	8m	1.2m	North-west??	
Parc Bryn Cegin A2	11m	8m	1.4m	North-west?	
Parc Bryn Cegin C	10.4m	8m	1.3m	North-west or north-east?	
Parc Bryn Cegin D		9m		West?	
Parc Bryn Cegin H	9.4m	7m	1.3m	East?	
Pant A	10m		1.4m	North-east	Ward and Smith 2001
Pant B	11m			?	Ward and Smith 2001
Pant C	11m	7.5m	1.6m	?	Ward and Smith 2001
Mellteyrn Uchaf A	9m	4.2m	2.5m	East	Ward and Smith 2001
Mellteyrn Uchaf B	10m	5.5m	2.5m	South-east	Ward and Smith 2001
Mellteyrn Uchaf C	9m	6.5m	1.5m	South-east	Ward and Smith 2001
Bryn Eryr A	12.5m	8.5m	2m	East	Longley 1998
Bryn Eryr B	9m	7m	1.25m	East	Longley 1998
Bryn Eryr C (stone)	7m	4.8m	1.1m	East?	Longley et al 1998
Bush Farm A (stone)	8.5m	5.4m	1.2m	North-east	Longley et al 1998
Bush Farm B	11.85m	7.85m	2m	North-east	Longley et al 1998
Cefn Cwmwd, Rhostrehwfa (S8)	13m	6m		?	Roberts et al forthcoming
Cefn Cwmwd, Rhostrehwfa (S4)	8.6m	6.5m		South-east?	Roberts et al forthcoming
Cefn Cwmwd, Rhostrehwfa (S5) (stone footings)		5.6m	1.4m	?	Roberts et al forthcoming
Melin y Plas, Bryngwran (house 1)	12.3m	6.8m	2-2.5m	?	Smith forthcoming
Melin y Plas, Bryngwran (house 2)	13.5m	c.11.5m	c.2m	?	Smith forthcoming
Melin y Plas, Bryngwran (house 5)	12.5m	6.5m?	1.5m	South-east	Smith forthcoming
Cefn Du, Gaerwen (S1)	12m	8.2m	2m	South-east	Cutler forthcoming

**Table 8: Summary of rectangular Neolithic buildings in Britain and Ireland.**

Timber-built Neolithic structures of other shapes have also been included for comparison. NB: the limits of the dates quoted for each site have been used, rounded up to show they are approximate. These have not been analysed or assessed for reliability, and probably hide a more distinct pattern. (see table 9 for references)

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
<b>England</b>															
<b>Early/mid Neo</b>															
Bolam Lake, Sandyford Quarry Field	R	1	NE-SW	c.10m by 3.5m	35	In NE end or long NW side	No	Post-built	-	3940-3380	Grimston ware	Yes	Yes	-	-
Carn Brea	R	3 excavated	-	A1 - c. 10.6m by 3m	31.8	-	-	Post and stake-built	-	3900-3600	E Neo	-	-	-	-
Chew Park, Stowey Sutton	O	1	-	c.3.6m by 3m	10.8	To S	-	Post-built	-	-	-	-	-	-	-
Crickley Hill	O	3/4	-	c. 2m by 1m to c. 3m by 2m	6	-	-	-	-	-	-	-	-	-	-
Eaton Heath, Norwich, building I	-	2	-	c. 8m by 4m	32	-	-	Post-built	-	-	Plain	-	-	-	-
Eaton Heath, Norwich, building II	R	2	-	c. 3m by 2m	6	-	-	Post-built	-	-	Plain	-	-	-	-
Etton	R	1	-	-	0	-	-	-	-	-	-	-	-	-	-
Etton Woodgate	R	1	-	c.7m by 4m	28	-	-	Post-built	-	-	-	-	-	-	-
Gorhambury	R	1	-	At least 9m by c. 7m	63	-	-	Trench and post-built.	-	3700-3300	-	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Grovehurst, Sittingbourne	-	1	-	c. 3m diam	7.07	-	-	wattle and daub	-	-	Plain pottery	-	-	-	-
Haldon	R	1	-	c. 6m by 5.3m - 4.4m	26.4	Gap in N wall may be entrance	Yes	stone footings and posts	-	-	Hembury ware	-	-	-	-
Hazleton North	R	1	NW-SE	c. 5.3m long	0	-	Yes	Post and stake-built	-	3800-3600	plain pottery	Yes	Yes	Yes	Yes
Helman Tor	-	19	-	-	0	-	-	-	-	4000-3100	Plain bowls of SW style	-	-	-	-
Hembury	R	1	-	7.1m by 3.6m	25.56	At west end?	-	Post-built	-	-	Hembury	-	-	-	-
Horton (Kingsmead Quarry)	R	1	-	10m x 5m	50	-	-	Trench and post-built	-	-	E Neo	-	-	-	-
Kemp Knowe	R	1	-	c. 7.6m by 1.4m	10.64	On NE side	-	Post-built	-	-	Plain	-	-	-	-
Lismore Fields, building I	R	2	nearly E-W	15m by 5m (if a single structure)	75	-	Yes	Post-built	-	3800-3600	E Neo	Yes	-	-	-
Lismore Fields, building II	R	2	nearly E-W	c. 7.5m by 5.5m	41.25	-	-	Post-built	-	3700-3300	E Neo	Yes	-	-	-
Mill Street, Driffield	R	1	N-S	c. 8m by 7m	56	-	-	Post-built	-	-	-	-	-	-	-
Padholm Road, Fengate	R	1	NW-SE	c. 8.5m by 7m	59.5	-	No	Trench and post-built	-	3400-2900	Grimston/Lyles Hill ware	-	-	-	-
Pilgrim's Way	R	1	NW-SE	10.5m long, at least 2.55-3.3m	26.78	-	-	Post-built	-	-	E Neo	-	-	-	-
Runnymede	R	1	NE-SW	roughly >4.5m by 3.5m	15.75	-	No	Post-built	-	-	-	-	-	-	-
Sale's Lot	R	1	-	c. 8m by 4m	32	-	Yes	Post-built	-	-	-	-	-	-	-
Stretton-on-Fosse,	-	1	-	c. 5m by 3m	15	-	Yes	Foundation	-	-	-	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
site 5								trench							
The Stumble, Goldhanger	R	1	-	c. 7m by 5m	35	-	-	Post-built	-	-	-	-	-	-	-
Tattershall Thorpe	R	1	?	?	0	-	-	Trench and post-built.	-	4900-4500?	Grimston and Mildenhall styles	Yes	Yes	-	-
White Horse Stone	R	1	NNW-SSE	c. 17.5m by 6.5-7m	113.75	In middle of W wall?	Yes	Trench and post-built.	-	4000-3600	E Neo, some carinated	Yes	Yes	Yes	-
Willington	R	7 (but only 1 E Neo)	-	c. 8m by 4m	32	-	-	Post-built	-	-	E Neo	-	-	-	-
Windmill Hill, Avebury	-	1	-	c. 4.5m by 3m?	13.5	-	Yes	Post-built	-	-	Windmill Hill style	-	-	-	-
Yarnton	R	1	E-W	21m by 11m	231	-	Yes	Post-built	Some posts deliberately removed?	4000-3600	-	-	-	-	Yes
<b>Late Neo/EBA</b>															
Barford, site C	-	1	-	c. 12m by 10m	120	-	-	Trench and post-built.	-	-	Peterborough ware	-	-	-	-
Chigborough Farm, structure 1	R	2	E-W	c. 6m by 5m	30	Entrance in E side?	No	Post-built	-	-	Mildenhall, mid Neo	-	-	-	-
Chigborough Farm, structure 2	R	2	-	-	0	-	No	Post-built	-	-	Mildenhall, mid Neo	-	-	-	-
Durrington 68	-	1	-	c. 13.3m by 8.8m	117.04	In SE side	-	Post-built	-	-	Grooved ware	-	-	-	-
Durrington Walls, house 1	R	4?	E-W	4m by 4m internally	16	-	Yes	stakes holding wattle panels	-	before 2500-2400	grooved ware	-	-	-	-



Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Durrington Walls, house 2	R	4?	SE-NW	2m across	0	-	-	-	-	before 2500-2400	grooved ware	-	-	-	-
Durrington Walls, house 3	R	4?	E-W	-	0	-	Yes	-	-	before 2500-2400	grooved ware	-	-	-	-
Easington	R	1	N-S	c. 5.5m by 3m	16.5	-	Yes	Post-built	-	3100-2400	-	-	-	-	-
Tatton Park	R	1	E-W	c. 3.5 by 2m	7	-	-	Post-built	-	2200-1600	-	-	-	-	-
<b>Ireland</b>															
<b>Early/mid Neo</b>															
Ballygalley	R	2	NW-SE	8 x 4m 5 x >2m	32 >10	SW corner	-	Foundation trenches	dismantled	3980-3380	W Neo	Yes	-	-	-
Ballyglass	R	1	NW-SE	13 x 6m	78	-	-	Foundation trenches	House	-	W Neo	-	-	-	-
Ballyharry 1, phase 1	R	1	NNW-SSE	13 x 6.5m	84.5	-	-	Post-built	dismantled	4000-3600	W Neo	Yes	-	-	-
Ballyharry 1, phase 2	R	1	NNW-SSE	6.8 x 5m	34	-	Yes	Foundation trenches	Burnt down and apparently attacked	4000-3600	W Neo	Yes	-	-	-
Ballyharry 2	R	1	-	5.7m wide x >3.7m long	21.09	-	-	Trench and post-built.	Burnt down	3900-3500	W Neo	Yes	Yes	-	-
Ballynagilly	R	1	E-W	>6.5 x 6m	39	SW corner?	Yes	Trench and post-built.	House burnt	4400-3700	Lyles Hill ware	-	-	-	-
Barnagore	R	1	-	-	0	-	-	Trench and post-built.	Burnt down	3900-3600	-	-	-	-	-
Broughshane	R	1	-	-	0	-	-	-	Partially burnt	-	W Neo	-	-	-	-
Caw	R	1	-	-	0	-	-	-	Dismantle	-	W Neo	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
									d						
Cloghers	R	1	E-W	13 x 7.8m externally	101.4	E gable end	Yes	Trench and post-built.	burnt down	3700-3500	W Neo.	Yes	-	Yes	-
Coolfore, house 1	R	2	NE-SW	13.7 x 9.5m	130.15	-	-	Trench and post-built.	unfinished ?	-	W Neo	-	-	-	-
Coolfore, house 2	R	2	E-W	6 x 5.1m	30.6	NE corner	Yes	Trench and post-built.	burnt down and dismantled	-	W Neo	-	-	-	-
Corbally H1	R	7	NW-SE	11.07m by 6.73m	74.5	In SE end wall	Yes	Trench and post-built	All dismantled , burnt or partially burnt	3800-3600	W Neo	Yes	Yes	-	-
Corbally H2	R	7	NW-SE	10.77m by 5.29m	56.97	In SE end wall	Yes	Trench and post-built	All dismantled , burnt or partially burnt	3800-3600	W Neo	Yes	Yes	-	-
Corbally H3	R	7	WNW-ESE	7.37m by 6.45m	47.54	In SE end wall	-	Trench and post-built	All dismantled , burnt or partially burnt	3800-3600	W Neo	Yes	Yes	-	-
Corbally H4	R	7	-	-	0	-	-	Trench and post-built	All dismantled , burnt or partially burnt	-	W Neo	-	-	-	-
Corbally H5	R	7	-	-	0	-	-	Trench and post-built	All dismantled , burnt or partially burnt	-	W Neo	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Corbally H6	R	7	-	-	0	-	-	Trench and post-built	All dismantled , burnt or partially burnt	-	W Neo	-	-	-	-
Corbally H7	R	7	-	-	0	-	-	Trench and post-built	All dismantled , burnt or partially burnt	-	W Neo	-	-	-	-
Drummenny	R	1	NE-SW	9.3 x 6.3m	58.59	-	No	Foundation trenches.	Partially burnt, stones heat cracked	-	W Neo	-	-	-	-
Enagh	R	1	NW-SE	6.2 x 4.3m	26.66	W corner	No	Trench and post-built.	Burnt down	4200-3700	W Neo	No	Yes	-	-
Gortaroe	R	1	NE-SW	9.8m by 6.8m	66.64	Possibly in NE corner	-	Trench and post-built.	Burnt down??	-	W Neo	-	-	-	-
Gortore	R	1		6m x 5m	33		No	Trench and post-built.		3928-3655	W Neo	Yes	1 frag	-	-
Granny Townland, house 1	R	2	NNE-SSW	7 x 7m	49	S wall	Poss central	Foundation trench			Early Neo				
Granny Townland, house 2	R	2	NE-SW	5 x 4.5m	22.5	-	-	Foundation trench		3980-3730	Early Neo				
Inch, Downpatrick	R	1	NE-SW	5.5m by 3.5m	19.25	-	Yes	Post-built	-	-	Neolithic	-	-	-	-
Kishoge	R	1	NE-SW	5.8m by 4.6m	26.68	in E wall ?	No	Trench and post-built.	Seems to have burnt down	4000-3600	-	-	-	-	-
Knowth 2, later	R	1	-	12.3m by 10.1m	124.23	NE corner?	Yes	Foundation trench	-	3800-3300?	Later western Neolithic	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
				externally, 10.7m by 9.1m internally											
Knowth 2, zone A	R	At least 1	NW-SE	8m by 5.5m if one house	44	NW corner?	Yes	Foundation trenches.	dismantled	4000-3700	W Neo	-	-	-	-
Knowth 2, zone B	R	At least 1	-	-	0	-	-	Foundation trench	-	4400-4000	W Neo	-	-	-	-
Lough Gur, site A	R	1	-	9.7m by 6.1m internally	59.17	-	-	stone footings	Partially burnt	-	W Neo	-	-	-	-
Monanny	R	3	-	-	0	-	-	-	all burnt or dismantled	-	W Neo	-	-	-	-
Mullaghbuoy	R	1	-	23m long	0	-	-	Trench and post-built.	Burnt down	-	W Neo	-	-	-	-
Newtown	R	1	WNW-ESE	At least 10m long, poss up to 12m, 6m wide	60	In N end of E gable	Yes	Foundation trenches	Partially burnt or dismantled	4000-3600	W Neo	-	-	-	-
Pepperhill	R	1	-	4.6m long?	0	-	-	Foundation trench	Partially burnt	-	W Neo	-	Yes	-	-
Platin	R	1	N-S	8m by 6m	48	-	-	Trench and post-built.	Possible partially burnt	-	W Neo	-	-	-	-
Richardstown	R	1	NNW-SSE	11.4m by 7.54m	85.96	In W wall	Yes	Trench and post-built.	Partially burnt	-	W Neo	-	-	-	-
Russellstown	R	1	NE-SW	>8.5 x 6m	>51	-	possible	Foundation trench	Burnt??	-	W Neo	-	-	Yes	-
Tankardstown H1	R	2	-	c. 7.4 by 6.4m	45	N side	Yes	Trench and post-built.	Burnt down	4000-3300	W Neo	Yes	-	-	-
Tankardstown H2	R	2	-	15.2m by 7.4m	112.48	-	No	Trench and post-built.	Burnt down	-	W Neo	Yes	-	-	-
A1 between Loughbrickland	R	3	-	-	0	-	-	Foundation trench	-	-	-	-	-	-	-





Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Ronaldsway, Malew	R	1	NE-SW	7.3m by 3.6-4.3m	26.28	Either in SE or SW side	Yes	Post-built	-	2600-2400	Ronaldsway style, grooved ware	-	-	-	-
<b>Scotland</b>															
<b>Early/mid Neo</b>															
Balbridie	R	1	E-W	24 x 12m	288	E end ?	No	Trench and post-built.	Burnt down	4000-3600	Unstan ware	Yes	No	-	-
Beckton Farm, Lockerbie	O	1	?	c.1m across	0.78	-	Yes	Post and stake-built, if a real structure	-	3700-3100	W Neo	-	-	-	-
Carsie Mains	-	-	-	-	0	-	-	Post-built	-	-	-	-	-	-	-
Claish Farm, Callander	R	1	N-S	25x9m	225	Gaps in curved ends	Yes	Post-built	Burnt down	-	E Neo, round-bottom	Yes	Yes	-	-
Cowie	O	several	-	2.7-4.4m by 2-2.8m	12.32	-	-	pressure trenches	-	4000-3300	E Neo	Yes	-	-	-
Crathes, Warren Field	R	1	E-W	c24m by 9m externally and 22.5m by 8m	216	NE corner	No	Trench and post-built.	Burnt down	3800-3700	-	Yes	-	-	-
David Lloyd Leisure Centre, Garthdee	O	1	E-W	c12m by 8-9m	96	S?	Yes	Post-built	-	3800-3600	E Neo, carinated bowl ware	Yes	Yes	-	-
Deer's Den	R	1	NE-SW	17 x 11-12m?	187	-	-	Few structural elements	-	3900-3600	E Neo	Yes	Yes	-	-
Easterton of Roseisle	-	-	-	-	0	-	Yes	-	-	-	E Neo	-	-	-	-
Kilhern	R	2	-	-	0	-	-	Post and stake-built	-	-	-	-	-	-	-
Kinbeachie, Black	R	1	NE-SW	7 x 4m	28	-	-	Post-built?	-	3500-2900	Impressed	Yes	Yes	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Isle											ware				
Lockerbie	R	1	-	c. 22m by 8m	176	-	-	-	-	-	E Neo, carinated bowl ware	-	-	-	-
Ratho Quarry, RS1	R	2	-	9.5x4m	38	-	-	Foundation trenches	-	-	E Neo?	-	-	-	-
Ratho Quarry, RS2	R	2	-	4.5m by 3.7m	16.65	-	-	Foundation trenches	-	-	E Neo?	-	-	-	-
Wardend of Durris	R	1	NE-SW	>7m long?	0	-	-	Trench and post-built	Planks burnt in situ	3400-2700	None	-	-	-	-
Whitmuirhaugh	R	1	-	-	0	-	-	?	-	-	-	-	-	-	-
Wideford Hill	O	-	-	-	0	-	Yes	Post-built	-	-	-	-	-	-	-
<b>Late Neo</b>															
Balfarg, S1	R	2	NE-SW	c. 20m by 10m	200	No	No	Post-built	Covered by mounds	3300-2500	Grooved ware	-	-	-	-
Balfarg, S2	R	2	N-S	c. 20m by 10m	200	No	No	Post-built	Covered by mounds	3300-2500	Grooved ware	-	-	-	-
Douglasmuir	O	1	?	8m by 5m???	40	-	-	Post-built?	-	-	Decorated Neo pot	-	-	-	-
Lamb's Nursery, Dalkeith	O	1	-	-	0	-	-	Trench and post-built.	-	-	Grooved ware	-	-	-	-
Littleour	R	1	E-W	22m by 7-8m	154	None	No	Post-built	Probably burnt down	3100-2600	Grooved ware	Yes	Yes	-	-
Raigmore, Inverness	R	1	-	14 x 6m max. (10m by 5m min)	84	-	Yes	Post-built	-	2900-2200	Grooved ware	-	-	-	Yes
Station Brae, Dregghorn	R	Several (1 rectangula	N-S	23.5 x 5m	117.5	Mid point of W side	No	Post-built		Late Neo???	Carinated bowls and	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
		r)									grooved ware				
<b>Neo?</b>															
The Hirsell, Coldstream	O	several	-	-	0	-	-	wattle	-	-	-	-	-	-	-
Pitlethie Road	R	1	-	c.6m by 3m	18	-	-	Post-built	-	-	-	-	-	-	-
<b>Wales</b>															
<b>Early Neo</b>															
Clegyr Boia house 1	R	At least 3	-	6.7m by 3.6m	24.12	centre of long N wall	Yes	Post-built	-	-	Carinated bowls	-	-	Yes	-
Clegyr Boia house 2	R	At least 3	-	4.6m by 3m	13.8	-	Yes	Post-built	probably destroyed by fire	-	Carinated bowls	-	-	Yes	-
Gwernvale, Talgarth	R	1	NW-SE	3.8m by 3.5m	13.3	-	No	Trench and post-built	-	4000-3600?	'Abingdon' style and Irish Sea ware	Yes	-	-	Yes
Llandygai I	R	1	NE-SW	13m by c. 6m	78	NE end??	Yes?	Post-built	-	3800-3500	Irish Sea ware	-	-	-	-
Llandygai II (Parc Bryn Cegin)	R	1	ENE-WSW	c. 12.5m by 8m externally, 10.5m by 6.5m internally	100	In SW corner??	No	Post-built	Charcoal present and may have burnt down??	3700-3600	Irish Sea ware	Yes	Yes	-	-
Moel y Gaer, Rhosesmor	R	1	?	c. 11m by 5m	55	-	No	Post-built	-	3800-3600	E Neo	-	-	-	-
<b>Late Neo</b>															
Cefn Bryn, Gower	-	1	-	3.2m long	0	-	Yes	Trench and post-built	-	3100-2300	Peterborough ware	-	-	-	-
Cefn Cilsanws, Vaynor	-	1	-	c. 3.6m by 2.2m	7.92	-	No?	Stake-built	-	-	Peterborough ware	-	-	-	-

Site name	House shape	House No	Alignment	Size	Area	Door	Hearth	Construction	End	Approx. Date Cal BC	Pottery	Cereal grains	Hazelnut shells	Domestic animal bones	Human bones
Mount Pleasant, Nottage	R	1	NE-SW	c. 6m by 3m	18	E side	No	stone wall and post-built	-	-	Peterborough ware	-	-	-	-
Sant-y-Nyll, St Brides-Super-Ely, A	O	3	-	c. 4.5m by 3.6m	16.2	-	-	Post and stake-built	-	-	-	-	-	-	-
Sant-y-Nyll, St Brides-Super-Ely, B	O	3	-	2.7m by 2.2m	5.94	-	-	Post and stake-built	-	-	-	-	-	-	-
Sant-y-Nyll, St Brides-Super-Ely, C	O	3	-	poss about same size as B	5.94	-	-	Post and stake-built	-	-	-	-	-	-	-
Trelystan A	O	2	-	4m by 4.5m	18	-	Yes	Stake-built	-	2600-2400	Grooved ware	-	-	-	-
Trelystan B	O	2	-	3.9m by 4.2m	16.38	-	Yes	Stake-built	-	2900-2500	Grooved ware	-	-	-	-
Upper Ninepence Field, Walton, S1	O	2	-	6m diam	28.27	-	Yes	Stake-built	-	-	Peterborough ware and grooved ware	-	-	-	-
Upper Ninepence Field, Walton, S2	O	2	-	8m diam	50.26	-	Yes	Stake-built	-	-	Peterborough ware and grooved ware	-	-	-	-

**Table 9: references for sites in table 8**

<b>Site name</b>	<b>County</b>	<b>Reference</b>
A1 between Loughbrickland and Beech Hill	Co. Down	<a href="http://www.ehsni.gov.uk/news/news/news_loughbrickland.shtml">http://www.ehsni.gov.uk/news/news/news_loughbrickland.shtml</a>
Bolam Lake	Northumbria	Waddington and Davies 2002
Balbridie	Aberdeenshire	Ralston 1982; Fairweather and Ralston 1993
Balfarg	Fife	Barclay and Russell-White 1993
Ballygalley	Co. Antrim	Simpson 1995, 1996b
Ballyglass	Co. Mayo	Ó Nualláin 1972
Ballyharry 1 and 2	Co. Antrim	Moore 2003
Ballynagilly	Co. Tyrone	ApSimon 1976
Barford, site C	Warwickshire	Darvill 1996, 87, 106
Barnagore	Co. Cork	NRA website ( <a href="http://www.nra.ie/Archaeology/BrochureandPosterSeries/file,3423,en.pdf">http://www.nra.ie/Archaeology/BrochureandPosterSeries/file,3423,en.pdf</a> )
Beckton Farm, Lockerbie	Dumfries and Galloway	Pollard 1997
Broughshane	Co. Antrim	Moore 2004, 147,148
Carn Brea	Cornwall	Mercer 1986, 2003
Carsie Mains	Perth and Kinross	Brophy 2005
Caw	Co. Derry	Moore 2004, 147
Cefn Bryn, Gower	West Glamorgan	Ward, A., 1987
Cefn Cilsanws, Vaynor	Powys	Darvill 1996, 109
Chew Park, Stowey Sutton	Somerset	Darvill 1996, 100
Chigborough Farm	Essex	Adkins and Adkins 1991
Claish Farm, Callander	Stirling	Barclay <i>et al</i> 2002a and b
Clegyr Boia	Pembrokeshire	Williams 1952
Cloghers	Co. Kerry	Kiely 2003 ; Dunne and Kiely 1999
Coolfore	Co. Louth	Ó Drisceoil 2003
Corbally	Co. Kildare	Purcell 1999, 2002; Tobin 2003
Cowie	Stirling	Atkinson 2002
Crathes, Warren Field	Aberdeenshire	Murray 2004 and 2005b
Crickley Hill	Gloucestershire	Darvill 1996, 104
David Lloyd Leisure Centre, Garthdee Road	Aberdeen City	Murray 2005a
Deer's Den	Aberdeenshire	Alexander 2000
Donegal Bypass	Co. Donegal	Excavations 1997 <a href="http://archaeology.about.com/gi/dynamic/offsite.htm?site=http://www.jchanning.com/neolithi.htm">http://archaeology.about.com/gi/dynamic/offsite.htm?site=http://www.jchanning.com/neolithi.htm</a>
Douglasmuir	Angus	Kendrick 1995



Drummenny	Co. Donegal	Dunne 2003
Dunboyne 3	Co. Meath	<a href="http://www.m3motorway.ie/Archaeology/Section1/Dunboyne3/">http://www.m3motorway.ie/Archaeology/Section1/Dunboyne3/</a>
Durrington 68	Wiltshire	Darvill 1996, 107
Durrington Walls	Wiltshire	Parker Pearson <i>et al</i> 2005
Easington	East Yorkshire	Mackey 2006, 530; Rod Mackey pers. comm.
Easterton of Roseisle	Moray	Barclay 2003, 74
Eaton Heath, Norwich	Norfolk	Darvill 1996, 105
Enagh	Co. Derry	McSparron 1999 and 2003
Etton	Cambridgeshire	Darvill 1996, 101
Etton Woodgate	Cambridgeshire	Darvill 1996, 100-1
Frenchfurze Road, Tully East	Co. Kildare	<a href="http://www.nra.ie/Archaeology/ArchaeologyonRoadSchemes/d30.PDF#search=%22neolithic%20house%22">http://www.nra.ie/Archaeology/ArchaeologyonRoadSchemes/d30.PDF#search=%22neolithic%20house%22</a>
Gorhambury	Hertfordshire	Thomas 1996, 9; Darvill 1996, 87, 104
Gortaroe	Co. Mayo	Gillespie 2002
Gortore	Co. Cork	Kiely 2006, 55-57
Granny Townland	Kilkenny	Hughes 2005
Grovehurst, Sittingbourne	Kent	Darvill 1996, 105
Gwernvale, Talgarth	Powys	Britnell and Savory 1984
Haldon	Devon	Willock 1936
Hazleton North	Gloucestershire	Saville 1990
Helman Tor	Cornwall	Mercer 2003
Hembury	Devon	Darvill 1996, 86, 102
The Hirsell, Coldstream	Borders	Barclay 2003, 80
Horton	Berkshire	Current Archaeology 2008, 7; <a href="http://www.wessexarch.co.uk/blogs/news/2008/06/30/stone-age-house-found">http://www.wessexarch.co.uk/blogs/news/2008/06/30/stone-age-house-found</a>
Inch, Downpatrick	Co. Down	McManus 1999
Kemp Knowe	East Yorkshire	Darvill 1996, 87, 105
Kilhern	Dumfries and Galloway	Buckoke 1999
Kinbeachie, Black Isle	Highland	Barclay <i>et al</i> 2001
Kishoge	Co. Dublin	O'Donovan 2001
Knowth 2	Co. Meath	Eogan and Roche 1997
Lamb's Nursery, Dalkeith	Midlothian	Cook 2000
Lismore Fields	Derbyshire	Garton 1987, 250-253; 1991, 3-22
Littleour	Perth and Kinross	Barclay and Maxwell 1998
Llandygai I	Gwynedd	Lynch 2001
Llandygai II (Parc Bryn Cegin)	Gwynedd	This report
Lockerbie Academy	Dumfries and Galloway	Bruce Glendinning pers. com.
Lough Gur, site A	Co. Limerick	Ó Riordáin 1954; Grogan and Eogan 1987

Mill Street, Driffield	East Yorkshire	Darvill 1996, 86
Moel y Gaer, Rhosesmor	Flintshire	Britnell 1991
Monanny	Co. Monaghan	Moore 2004, 147
Mount Pleasant, Nottage	Glamorgan	Thomas 1996, 8; Lynch et al 2000, 51; Darvill 1996, 87, 109
Mullaghbuoy	Co. Antrim	Moore 2004, 146-147
Newtown	Co. Meath	Halpin 1995; Gowen and Halpin 1992
Padholm Road, Fengate	Cambridgeshire	Pryor 1982, 1991, 2004, 139-140
Pepperhill	Co. Cork	Tarbett and Crone 1986
Pilgrim's Way	Kent	Hayden 2006
Pitlethie Road	Fife	Sheridan forthcoming
Platin	Co. Meath	Moore 2001
Raigmore, Inverness	Highland	Simpson 1996a
Ratho Quarry	East Lothian	Smith 1995
Richardstown	Co. Louth	Byrnes 1999
Ronaldsway, Malew	Isle of Man	Piggott 1954
Runnymede	Surrey	Needham and Trott 1987
Russellstown	Co. Carlow	Logan 2007, 67-68
Sale's Lot	Gloucestershire	Darvill 1996, 87, 104
Sant-y-Nyll, St Brides-Super-Ely	Mid Glamorgan	Darvill 1996, 110
Stretton-on-Fosse, site 5	Warwickshire	Darvill 1996, 87, 106
Station Brae, Dreghorn	Ayresshire	Addyman 2004
The Stumble, Goldhanger	Essex	Darvill 1996, 104
Tankardstown	Co. Limerick	Gowen and Tarbett 1988a and b
Tattershall Thorpe	Lincolnshire	Chowne 1982; Chowne, Healy and Bradley 1993
Tatton Park	Cheshire	Higham and Cane 1999.
Thornhill	Co. Londonderry	Logue 2003
Townparks 5	Co. Meath	<a href="http://www.m3motorway.ie./Archaeology/Section4/Townparks5/">http://www.m3motorway.ie./Archaeology/Section4/Townparks5/</a>
Trelystan	Powys	Britnell 1982; Gibson 1996
Upper Ninepence Field, Walton	Powys	Gibson 1996, 1999a
Wardend of Durriss	Aberdeenshire	Russell-White 1995
White Horse Stone	Kent	Hayden 2006
Whitmuirhaugh	Borders	Barclay 2003, 80
Wideford Hill	Orkney	Orkney Archaeology News: story dated May 1, 2003, Experts ponder mystery of Neolithic wooden structure ( <a href="http://www.orkneyjar.com/archaeology/wideford.htm">http://www.orkneyjar.com/archaeology/wideford.htm</a> )
Willington	Derbyshire	Darvill 1996, 87
Windmill Hill, Avebury	Wiltshire	Darvill 1996, 87
Yarnton	Oxfordshire	Hey 1997 and forthcoming

**Table 10: Archaeological sites around Parc Bryn Cegin**

<b>PRN</b>	<b>Site Type</b>	<b>Site name/location</b>
18	Roman milestone	Ty Coch, Pentir
21	Hut and field system	SW of Ty Coch
26	Earthwork enclosure	Siambra-Gwynion
27	Hut circle settlement	Cororion Rough, Glasinfryn
30	Cairn with food vessels	Carnedd Howel
54	Hut circles	NW of Cororion
222	Henges, cursus and Neolithic settlement	Llandygai Industrial Estate
313	Hut circle	Maes yr Hedydd
802	Rectangular platform\enclosure	N of Glasinfryn
815	Burnt mound	Rhos Uchaf
877	Burnt mound	Wet Covert
1973	Early Bronze Age collared urn (find spot)	Upper Garth Road
2302	Saxon Coins (findspot)	Bangor Cathedral
2303	Medieval chapel	Capel Gorfyw, Bangor cathedral
2309	Palstave (findspot)	Maesgeirchen
2310	10 <sup>th</sup> century coin hoard	Bangor High Street
2315	Stone maul (findspot)	Bangor Mountain
2317	Bronze palstave (findspot)	Llandygai
2371	Early medieval cemetery	Deiniol Shopping Precinct
2812	Bronze palstave (findspot)	Maesgeirchen
3673	Pebble macehead (findspot)	Llandygai
6578	Prehistoric flints (find spot)	Llandygai
6890	Roman coin (findspot)	Llandygai
7870	Flint knife (findspot)	SE of Minffordd
403359	Oval ditched enclosure (AP)	Penrhyn Park enclosure I
404666	Square barrows (AP)	Penrhyn Park
403367	D-shaped enclosure, possibly a defended enclosure (AP)	Penrhyn Park enclosure II
403369	Settlement cropmarks (AP)	Pen Lan



YMDDIRIEDOLAETH  
ARCHAEOLEGOL  
GWYNEDD



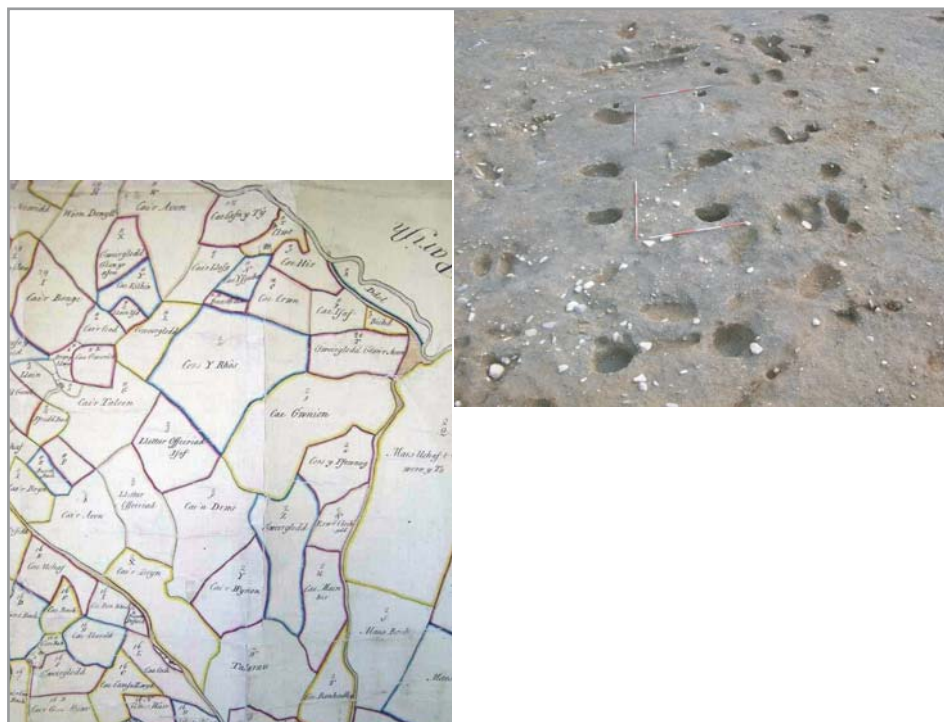
GWYNEDD  
ARCHAEOLOGICAL  
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# Recent Excavations at Llandygai, near Bangor, North Wales

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## Full excavation report Volume III: appendices

GAT Project No. G1857

Report No. 764

December 2008



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# Recent Excavations at Llandygai, near Bangor, North Wales

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Full excavation report

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Site code: G1857  
Volume III: appendices

Prepared for JacobsGibbs on behalf of  
the Welsh Assembly Government

December 2008

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## APPENDIX I: List of specialists

Edward Besley

Coins

National Museum of Wales

John Carrott and team

Palaeoenvironmental research

Palaeoecological Research Services, Shildon, Co. Durham

Evan Chapman

Metal artefacts and seal box

National Museum of Wales

Hilary Cool

Roman glass

Free-lance Roman glass specialist.

Peter Crew

Metal working debris and burnt clay

Snowdonia National Park Archaeologist

Jolene Debert

Microwear analysis

PhD student, Manchester University

Jeremy Evans

Roman pottery

Free-lance Roman pottery specialist.

Jonathan Goodwin

Post-medieval pottery

Stoke-on-Trent Archaeology

David Jenkins

Geology and pedology

Free-lance specialist, formerly of Bangor University

Heather Jackson

Petrology of the polished axe and two flakes

Department of Geology, National Museum of Wales

Frances Lynch

Prehistoric pottery

Free-lance prehistoric pottery specialist.

Peter Marshall

Radiocarbon date modelling

Free-lance specialist

Phil Parkes

X-rays and conservation

Cardiff Conservation Services

George Smith

Lithics

Gwynedd Archaeological Trust: in house lithics specialist

Dr Benjamin Stern  
Pottery residue analysis  
Department of Archaeological Sciences, University of Bradford

John Llywelyn Williams  
Graig Lwyd  
Free-lance specialist, formerly of Bangor University

## APPENDIX II: PREHISTORIC POTTERY

Frances Lynch

### Early Neolithic pottery

Sherds of typical Early Neolithic pottery come from three contexts on the site: the fill of postholes and other features defining the ground-plan of a rectangular building; from patches of protected old ground surface in the vicinity of this building; and from an elongated pit (1738) just to the south of it. The finds from these contexts (except for 2 tiny fragments from Trench 1404 and some hard, abrasive material from the old ground surface (contexts 1713 and 1758) which is not true pottery but is difficult to explain) were exclusively Early Neolithic. Residual fragments occurred in the fill of a later pit (1554) close by and in the pits of Pit Group I some 300m to the east. Apart from the two small pieces from Pit Group I, pottery of this period does not seem to have become incorporated in later features elsewhere on the site, even though other pits and disturbances were much closer.

All the sherds were undecorated and made from fine, well-smoothed, occasionally burnished and normally well-fired clays without obvious inclusions. The majority had the characteristic vesicular texture caused by the leaching out of angular inclusions which has been judged typical of 'Irish Sea Ware' (Lynch 1976) found in many parts of Wales and of Ireland at this period. Several findspots in both countries have produced radiocarbon dates of around 4,000 - 3,800 cal BC.

The seven rims (Fig. 14) and the few pieces of neck and shoulder indicate that they derive from normal shouldered bowls but very little of any vessel survives. Where size can be estimated it suggests bowls ranging from 160mm to 230mm in diameter and perhaps about 240mm to 280mm deep. The rims are out-turned, some rolled and some hooked, but all light and unemphatic. Four (SF 179, 130, 154, 84) demonstrate that the outer edge of the rim was added as a separate coil. Only two elements of shoulder survive; SF 77 suggests quite a sharply defined change of direction; SF 134 shows a softer profile.

The nearest parallels for shouldered bowls of this type were found associated with a very similar house excavated in 1967 less than a kilometre away on the site of the later Neolithic sanctuary (Lynch and Musson 2001, 27-36). The pottery came from the fill of postholes with dates ranging from 4,000 to 3,600 cal BC. Typologically the assemblages from both sites are too small to indicate trends. Nor can any typological distinction be made between the material from the postholes at Parc Bryn Cegin (SF 79, 84 and 77) and that from the patches of preserved old ground surface (SF 130, 179, 130, 138, 154, 134 and 149).

Undecorated shouldered bowls have come from several Neolithic sites in Wales. The most elegant group, with fine pointed rims and sharp shoulder carinations, is from the West chamber at Dyffryn Ardudwy, an undated site believed to be early (Powell 1973); material from the undated settlement at Clegyr Boia, Pembrokeshire is similar (Williams 1952 and Lynch 1969); a clumsier pot found beneath the cairn at Trefignath in a settlement context dated to around 3,900-3,800 cal BC (Smith and Lynch 1987, 75). Small assemblages, such as that from Din Dryfol (Smith and Lynch 1987, 118-9) confirmed its ubiquity, but do not add much to the chronological or typological argument.

The large segment of unshouldered bowl (SF 167, Fig. 14) from the elongated pit 1738 might be considered significantly different (Lynch *et al* 2000, 61), as is the surface treatment and the shape of the rim, which can be paralleled in 179 from the old ground surface. Analysis of the fabric of SF 167 shows this to be significantly different to the other sherds, and it may not originate locally like the other material (Williams and Jenkins 2008). Contexts with exclusively unshouldered Neolithic bowls, Carreg Samson in Pembrokeshire (Lynch 1975), Tŷ Isaf, Breconshire (Grimes 1939) and Pant y Saer, Anglesey (Scott 1933 and Lynch 1969, 155-6) are not closely dated and, apart from Tŷ Isaf, the assemblages are very small, so do not help to decide whether the unshouldered shape should be considered an integral part of the expected early Neolithic assemblage, or not. The presence of both shapes among the pre-cairn pottery at Gwernvale (Britnell and Savory 1984, 106-8), would suggest this, a conclusion reinforced by this discovery in the north where definitely early examples were not previously known.

Most sherds from Parc Bryn Cegin are small and abraded, suggesting that they are essentially domestic rubbish, a conclusion reinforced by a study of the material from the sieved residues which, apart from 2 small fragments from trench 1404, is entirely consistent with the larger pieces. A very few joins can be made between ancient breaks but they remain small pieces, except the large section of rim and body of the straight-sided pot, SF 167 from pit 1738. This might be considered a deliberate 'deposit' but the rest seem to be accidental inclusions.

### Peterborough Tradition: Mortlake Style

Four vessels are represented by distinct rim forms, and possibly three others identifiable from body sherds with differing impressions within horizontal grooves.



### *Context*

All sherds in this tradition come from pits within Pit Group I. Pot IA is the only pot in Pit 1052 and the pieces seem to have been placed in the pit with some care, although the pot was not complete. The other pots are represented by only a few small sherds; Pit 1036 held the remains of several pots; Pit 1049 a few body sherds from what might be a single pot, but in both instances there are additional featureless sherds. In Pit 1027 there are some body sherds which might belong to Pot IA; if this is so, this is the only case of pieces of a single pot being deposited in more than one pit. Some pieces of residual Early Neolithic pottery occurred in these pits even though they are a considerable distance from the Early Neolithic house. Most pits also contained flakes of Graig Lwyd stone, flint and charcoal and burnt stone.

### *Catalogue of Illustrated Finds*

#### *Pot IA*

Fig. 28

Bowl, 260mm in diameter and perhaps 210mm high with a heavy overhanging rim, smooth concave neck and a body densely covered with horizontal ridges variously rusticated. Approximately half of the rim, but less from the body of the pot survives.

The rim forms a heavy collar, bevelled in the inside and decorated with two lines of impressions probably made with a bird bone. For most of the circuit they are cut by deep fingernail marks. The curved outer surface is 35mm deep, 24mm thick and decorated with a narrow ridge at the top and 4 deeply cut grooves/ridges. These ridges have been rusticated by short incisions and subsequently re-emphasised by gouging with a rounded stick, in some places using a stab-and-drag technique.

Beneath the collar is a short undecorated concave neck with a smoothed surface. The body below is straight, in that no sherds show a marked curvature. The scheme of decoration is horizontal lines of differing impressions creating a ridged surface right down to the flattened base where there is a patch of undecorated surface about 40mm in diameter.

The **upper body** has 3 sharply defined grooves/ridges about 10mm apart. This grooved surface is impressed with rows of triangular marks on the upper part of the groove and diagonal incisions on the apex of the ridge, creating a complex rustication. This may have been achieved by the diagonal use of a pointed spatula in a stab-and-drag motion. Below this band the **central body** is decorated with 6 or more lines of closer set impressions between less sharply defined ridges some 8-12mm apart. These impressions are double, either two twists of cord or the end of a bird bone, the latter being more likely. Above each impression there is the faint mark of the fingernail which held the marker. Below this middle section the **lower body** is decorated by grooving and stab-and-drag impressions made with a rough stick. The lines are less straight and evenly spaced, perhaps due to increased curvature, which may be seen on some pieces (SF 38). Five or six lines may be recognised on some sherds and they are presumed to continue down to the base.

The very heavy collar-like rim is unusual but can be paralleled at Bryn yr Hen Bobl and, in a less extreme form, at Trefignath, both in Anglesey (Lynch 1991, fig 28.17 and fig 4a.B). A rimsherd from the cave at Gop, Flintshire, associated with burials and a jet slider (Ellis Davies 1949, 274-80) and another from a drainage ditch close to the river Clwyd at Rhuddlan (W H Stead Collection unpubl.) show the same heavy, almost square profile and horizontal grooving, a feature also present among the large Peterborough assemblage re-deposited in the ditch of a barrow at Woodhouse end, Gawsworth, Cheshire (Manby 1977). Possibly these unusually heavy rims may prove to be a regional preference of North Wales and Cheshire, running through to the Peak District and south Yorkshire. The short concave neck and the heavily textured body with horizontal grooving, on the other hand, is typical for the style throughout Britain, as is the use of stab-and-drag techniques and various complex impressions. The rather straight-sided bowl suggested in this reconstruction is based on a large sherd (SF 45), which joins the neck, and on the bowls from Sarn y Bryn Caled, Powys (Gibson 1994, P1, fig.25) Ogmere, Glamorgan (Gibson 1998, fig 6.44) and Caldey Island, Pembrokeshire (Lacaille and Grimes 1961, 37-9).

The fabric is mainly light beige and rather poorly fired, but is harder and darker at the rim. It contains a quantity of angular stone tempering amongst which quartz is prominent.

#### *Pot IB*

Fig. 28

Two sherds, a rim and a piece of neck which do not join but share the same hard dark fabric with small quartz grains and neatly applied decoration.

A narrow convex rim with internal bevel; inner decoration: 4 lines of small stab-and-drag marks, neatly made; outer curved flange of rim: upper angle with 1 line of tiny diagonal marks; below this, diagonally set lines of stab-and-drag marks, the raised areas between them burnished. The curve of the neck below the rim is well

smoothed. The second sherd shows the almost-burnished curve of the neck with 2 lines of close-set possible stab-and-drag marks below, the beginning of a horizontally decorated body.

#### *Pot IC*

Fig. 28

A single small sherd from a rim very similar to B but with a sufficiently different decorative scheme to suggest a separate pot.

The decoration is neat stab-and-drag lines and lines made with a sharp roulette. There are 3 lines on the inner bevel, 2 stab-and-drag, 1 rouletted; on the outer bevel there are 2 rouletted diagonal lines.

These two slighter rims and their decorative schemes are very typical of the style and can be paralleled at several sites including Windmill Hill (Smith 1965 fig.33).

#### *Pot ID*

Fig. 28

Pot ID is a clumsier pot of same general type as B with inner edge inturned rather than bevelled and outer flange flat, decorated with 4 concentric lines of stab-and-drag marks. The curve below the rim is poorly formed and there are 2 lines of rough stab-and-drag marks below it. Two other small surface fragments with lines of stab-and-drag marks, creating almost a serrated effect, probably belong to the body of this same pot.

This variant on the fairly standard Mortlake rim can be seen at Ogmore on several sherds (Gibson 1998, pots 21, 28, 43) and at Cefn Bryn, Gower (Gibson 1995, fig 3.7, 8).

#### *Pots E, F and G*

Fig. 28

The body sherds, **E**, **F** and **G** must belong to at least two other pots because they are lighter in colour and less well fired. F and G, which come from Pit 1049, might be from the same pot; both are decorated with stab-and-drag made with a rounded point causing quite deep grooving. G might be close to a rounded base, hence the confused lines. They demonstrate the ubiquity of dense horizontal groove decoration on the bodies of these Mortlake vessels.

#### *Discussion*

As with all Later Neolithic pottery, the quantity of Mortlake style material from Wales has increased considerably over the last few years, but few assemblages have been large (Gibson 1995, Lynch et al 2000, 112). New finds have confirmed the distribution pattern already established which showed a predominance in the Marches. Radiocarbon dating has indicated a currency for all three styles during the period 3500-2500 cal BC and has failed to confirm the postulated typological sequence of Ebbsfleet /Mortlake/ Fengate (Gibson 1995, 30). However the rarity of Ebbsfleet Ware in Wales and the absence of mixed assemblages would suggest that it does mark the earliest appearance of the tradition. Mortlake, the most common variety (Gibson 1995, 27), and Fengate, on the other hand, are quite commonly found together, though it is interesting that here at Llandygai they are quite clearly separated spatially.

The two radiocarbon dates from Pit 1052 which contained the Mortlake bowl, PGI.A, fit very comfortably within the span of dates gathered more widely across Wales (Gibson 1995, 30 and Gibson 1999, 95-7). They span the period 3354 - 2927 cal BC, but perhaps the more precise date (3354-3089 cal BC (NZA26671) may be judge more useful. As at other sites, the Mortlake and Fengate dates overlap despite the spatial separation of the pottery.

The context in which this pottery is found has been quite variable. At Gwernvale and Trefignath Mortlake pottery has been associated with the closure of megalithic tombs, at Ogmore and Walton with settlement and at many sites with enigmatic pits such as these at Llandygai. Some of these pits may be enigmatic simply because the excavation context was restricted and the true nature of the site was not understood; others may be more justifiably judged enigmatic because the circumstances of deposition suggest deliberate rituals. These may be linked to adjacent sites of funerary or be of religious significance, which would suggest that the burial of rubbish was not the primary concern of the officiators. This is almost certainly true of the pits containing pottery inside and close to Henge B at Llandegai and of the pits found recently close to the stone circle and henge at Carreg Beuno, Berriew, near Welshpool (Alex Gibson, pers comm). It is probably also true of these ones on the slope above the Llandegai henges, though it is only the large scale of the excavations that has given this conclusion credibility.

### **Peterborough Tradition: Fengate Style**

Approximately 27 vessels are judged to belong to this style. There are 20 apparently different rims, but a few may belong together, as may some of the 7 body sherds defined by variations of surface decoration. The ascription of bases to rims is also rather insecure.

#### **Context**

All the Fengate material comes from pits within discrete clusters: Pit Group II with four pots, III with perhaps 13 vessels, and IV with only three, none represented by more than a few sherds. Pit Group V is in fact only one pit containing the remains of 5 vessels, and VI was the only group where a mixture of styles may be recognisable since three vessels (VI.C, D and E) are judged to be Grooved Ware, although the ascription is not incontrovertible.

In all instances except Pit Groups II and IV, there is one vessel which is represented by a substantial number of sherds, normally representing almost half the circumference of the rim and a certain amount of the upper body. Clearly identifiable shoulder sherds are entirely absent and only a small proportion of the lower body is normally present with occasional fragments of base. The deposition within the pit usually suggests careful placing of segments of an already broken vessel. Alongside these 'major pots' there are minor ones represented by only a few sherds. This same pattern of deposition occurs with the Mortlake style vessels from Pit Group I and the Grooved Ware in Pit 1554 (Group VIII). It is just possible that PGIII.H from Pit 4069 and III.G from Pit 4092 are in fact part of the same pot, but normally sherds from any one vessel are confined to a single pit.

#### **Typology and comparisons: Catalogue of Illustrated Pots (Table II.1)**

The dominant pot-form present in Pit Groups II, III, IV and V is a medium-sized urn-shaped vessel, some 250mm in diameter, with a curved collar and in-turned bevelled rim with two lines of fingernail marks in a herringbone pattern. The collar has a distinct overhang and on some pots there are pits beneath this overhang.

The nature of the profile below the collar is less certain. On PGIII.A, B and C sufficient of the circuit of the rim and of the neck survives to establish with confidence the angle of the neck and it could suggest a conical, shoulderless profile, as favoured in many other reconstructions. However on PGV.A the angle is equally well-established and it is much more vertical and seems to demand a more Bronze-Age silhouette, even though the base is a narrow one. Moreover pieces of the neck and the upper part of the lower body on both pots show a slight outward curve, which suggests that there was indeed a lightly defined shoulder. Though no obvious pieces of shoulder can be recognised on any of the pots there is one sherd (PGIII.M) that might be part of just such a lightly defined shoulder. A flat base 80-100mm across is present in some cases.

The decorative schemes are various but all, except PGIII.F, involve hatched lines created by deep fingernail impressions. Where relevant sherds are available it can be seen that the neck as well as the collar is decorated and, except on PGIII.A, there are indications that the lower body is also covered with some form of decoration.

The Fengate style, of which these urn-like vessels are particularly characteristic, was first defined by Isobel Smith (1956, 106-19) from amongst the pottery excavated by Abbott from the Peterborough area and it has been recently been found in the well-studied pits from Kilverstone, Norfolk (Garrow, Lucy and Gibson 2006, fig 3.2). It is, however, very widespread. Very similar pot rims are present at Windmill Hill (Smith 1965, 78, fig.34), Downton, (Rhatz 1962, fig. 11.17) and West Kennet (Piggott 1962, 39, fig.12) all in Wiltshire. It also occurs in Yorkshire at West Heslerton and at Marton-le-Moor (Manby 1999, 71-3, fig.42 and in prep.) and perhaps in Scotland at Raigmore (Simpson 1999, 129, P.3, fig.13.2 no 6).

In Wales the style may, in the light of these better preserved pots from Llandygai, be recognised among the pottery from Walton previously ascribed to the Mortlake style as well as to Fengate, or to Grooved Ware (Gibson 1999, Pots 1, 6, 8, 12, 15, 16, 18 and 42). It occurs also at Ogmere on the Glamorgan coast, at Castell Bryn Gwyn in Anglesey and at Brynderwen near Abermule, Powys (Gibson 1998, Pot 10; Lynch 1991, 101; Gibson 1995, fig.3: 7.14). Another Welsh pottery group, previously identified as Grooved Ware, which may be added to the list is Hendre, near Mold (Brassil and Gibson 1999) where the context, a cluster of pits on a natural mound later used for Early Bronze Age burial, is also comparable. Where only the rims are present identification is difficult because they are very similar to the in-curved tops of Durrington Walls style jars, but these do not have the collar overhang, only a defining cordon.

Pots that clearly belong to this group are **PG II.A, B** (Fig. 29) and **C, PG IV.A** and **PG VI.B**, though none is well-preserved, **PG III.A, B, C, D, E** and **F** and **PG V.A** and **V.B**, the last being unique in having extra lines of decoration below the internal bevel.

Pot **V.A** (Fig. 32) is one of the most characteristic and complete, with bevelled rim, pits below the collar, probable shoulder and narrow flat base. The decoration on the collar, all carried out in fingernail impressions, is a series of concentric arcs, not the most typical of Fengate motifs. The decoration on the neck and on the body, extending down to the base, is lightly and rather carelessly incised cross-hatching.

Pot **III.A** (Fig. 30) is similarly complete but does not have the typical pits below the collar. The collar is decorated with a rough pattern of opposed hatching within which there are undecorated lengths. Below the collar the inward-sloping neck is decorated with lightly scored lines drawn with a rounded point and the lower body is undecorated.

Pots **III.B and C** (Fig. 30) are more fragmentary but have similar collar characteristics. However it is possible that these pots are truly conical like pots 2BA 452 AX from West Heslerton (Manby 1999, 73, fig.42). None of the lower part of C survives but there are several sherds from B, which show random stab marks continuing towards a base which is not present.

Pots **III.D and E** (Fig. 30) have sufficient characteristics for ascription. D has an unusual rounded overhang to the collar and E, which lacks a rim, has an unusual form of fingernail line, overlapping to give an impression of twisted cord.

Pot **III.F** (Fig. 30) has the appropriate bevelled rim with fingernail herring bone, curved collar and clear overhang, but the decoration on the collar is unusual for two reasons, the use of twisted cord (cord which had been finely whipped before twisting) and the circular *oculus* motif. Although it is badly shattered it can be reconstructed as two full triple circles surrounding what seems to be a definite dimple and enclosed by further arcs of cord. Such *oculus* motifs are rare in any style of Late Neolithic pottery but do occur on about four pots from Durrington Walls (Wainwright and Longworth 1971, 70, fig.29).

Pit cluster III includes another group of pots (**III.G, H, J, and K** (Fig. 30)) with curved collars but in this case the rims are not bevelled but pointed and the decoration is mainly by incisions, a series of roughly scored hatched triangles. It is likely that they are unshouldered, although in most cases insufficient of the neck remains to establish the angle.

It is possible that G and H are part of the same vessel. G has a line of fingernail marks on the top of the rim, which cannot be seen on H, but very little of the rim survives on H, a sherd, which demonstrates the variable depth of the collar. **III.J** is also very similar in shape and decoration, perhaps smaller in diameter, but made from a highly oxidised red clay. **III.K** is only rather tentatively ascribed to this group; it is made in a pale soft fabric and decorated with twisted cord. **III.I** has the more normal bevelled rim, but is completely undecorated as far as is known.

These vessels with collars and pointed rims are rather more difficult to find among the Fengate ware on other sites. However West Heslerton and Marton-le-Moor can again provide some parallels, from the same context as the bevelled rims. At least two bowls from Heslerton, 2BA 60 AS/AP and 2BA 60 AX/AR and pot 25 from Marton-le-Moor (Manby 1999, 71, fig.42 and in prep.) have relatively pointed rims and one shares the same decorative scheme on the collar. A similar pot (57.9) comes from pits at Thirlings, Northumberland (Miket 1976, fig.7: 11). All have pits below the collar, which the Llandygai pots do not, and the reconstructions suggest that they have a conical profile, which is likely to be the case at Llandygai.

The major vessel from Pit Group VI, **VI.A** (Fig. 33) has a straight collar decorated with panels of horizontal, vertical and oblique lines of fingernail marks and a rim with variously placed fingernail marks on its flat top. Such a collar would not be out of place on an Early Bronze Age Collared Urn, and the size and profile would also be appropriate, however the paired fingernail rustication over the neck, and especially the body, are not typical of Collared Urns in Britain and betray a Fengate origin. This vessel is the only pot in Pit 6034; it was broken in antiquity and is restorable in part, but not as large sections, though all parts of the pot except the shoulder are represented – a situation exactly comparable to that of the Mortlake bowl, PGI.A from Pit 1052.

Two very small rimsherds, **PGIV.B** (Fig. 31) and **V.C** (Fig. 32) do not belong to the predominant Fengate types at Llandygai or elsewhere. PGIV.B is the more interesting; a fragment of upright notched rim in a smooth well-fired brown fabric. Such notched rims can be found amongst Grooved Ware in northern England and Scotland (e.g. Noltland P3a (Sheridan 1999, 117, fig 12.4) but there is also a Fengate style pot (P276) from Windmill Hill which has a notched rim (Smith 1965, fig 34). This rimsherd comes from the same pit, 4103, as PGIV.A and C which are entirely typical of the style so there seems no reason to argue for a different ascription.

**Pot PGV.C** is represented by two small sherds in a thin hard beige fabric with a slightly bevelled rim decorated with a single line of fingernail marks. In view of the almost complete dominance of herringbone decoration in this situation, this rim is a little unusual but not outside the Fengate stylistic range. It is closely associated in Pit 4133 with others which are more characteristic.

#### *The other illustrated sherds*

**PG II.D, III.L, III.M, IV.C, V.D and E** (Fig. 31) are featureless body sherds with decoration, mostly random fingernail marks, triangular stab marks or lightly incised lines. It is possible that they may belong to some of the other illustrated pots, most are certainly very similar. Three demand a little more comment. **PGIII.M** (Fig. 30) has already been discussed in the context of possible shoulders on the urn-like vessels. It is interpreted as a possible shoulder because the curvature is asymmetric. **PGII.D** (Fig. 29) has close set incised lines, perhaps in hatched panels divided vertically, which is not like any of the other Fengate pots, except perhaps on an



unstratified Llandygai sherd, which combines vertical fingernail lines and incised hatching. Such panels are more reminiscent of Grooved Ware schemes. However the sherds are associated with pots II.B and C in Pit 4012. **PGIII.L** (Fig. 30) is a representative sherd from amongst several in Pits 4062 and 4092 characterised by a soft, 'moth-eaten' beige fabric, several having a light scoring on the outer surface, as if produced by a fine comb. No shape can be reconstructed from these essentially featureless sherds, though PGIII.K is made from the same 'moth-eaten' fabric.

### ***Discussion***

The Fengate style was recognised as a distinct variant of the later Neolithic English impressed wares defined during the 1920s and was incorporated into her Peterborough series – Ebbsfleet / Mortlake / Fengate by Dr Isobel Smith in 1956. She argued that the elongation of the Mortlake rim into the Fengate collar suggested a typological and chronological sequence, which would end with the ubiquitous Collared Urn. This view was accepted by Ian Longworth in his classic study of the development of Early Bronze Age pottery (Longworth 1984, 19-21) and vessels such as PGVI.A and PGV.A would certainly help this argument.

Despite its importance, there has been no major study of the style, perhaps because assemblages have normally been small and most have been sherd collections from uninformative contexts, such as isolated pits.

For the most part Fengate style pots have been found in loose association with Mortlake style bowls and, slightly less frequently, with Grooved Ware. This has led to their relative neglect, especially as several decorative traits are shared and small sherds are difficult to accurately distinguish. As far as the Welsh distribution is concerned this is very much the case. On domestic sites such as Ogmere and Walton (Gibson 1998 and 1999) the mixture is very close. In pits, probably ritual rather than domestic, a distinction does seem to be maintained, as can be seen here at Llandygai and at other smaller sites in the Marches where the two styles are not intermixed within one pit. The same would seem to be true in Yorkshire (Terry Manby pers. comm).

Typologically the Llandygai Fengate vessels form quite a tight group dominated by the collared pots with bevelled rims and fingernail decoration, which occur in all the pit clusters. In pit cluster III there is a smaller group of vessels with pointed rims and probably a more conical shape and there is a wider range of decorative techniques, such as incision, cord and stabbed impressions. Looking at Fengate pots from other sites in Wales, it is clear that the predominant type at Llandygai is also predominant elsewhere and may turn out to be regionally distinctive.

Radiocarbon dates for the Peterborough series as a whole suggest a span of perhaps a thousand years (3500-2500 cal BC) but the expected chronological sequence of Mortlake to Fengate does not seem to be reflected in the few Fengate dates which exist (Gibson 1995, 30 and Gibson and Kinnes 1997). Three radiocarbon dates for Fengate Ware are available from Llandygai; they span the period 3346 - 3020 cal BC, exactly coincident with the span of the two dates for the Group I pits with Mortlake pottery. One date (NZA26679) was obtained on residues on a sherd of pot PGV.A; the other two come from the fill of Pit 6072 which contained sherds of pot PGVI.B.

### **Grooved Ware**

Nine Grooved Ware vessels can be recognised, one (PGVIII.A) present in substantial quantity, the others represented by only a few sherds.

### ***Context***

Grooved Ware comes from two find spots widely separated across the site. The main one, containing six pots, is located close to the Early Neolithic house, yet only contains one tiny fragment of residual Early Neolithic pottery (Pit 1553). Other pits occur close by (Pit Group VIII) but they do not contain deliberate pottery deposits, so this Grooved Ware pit, though it contains pottery deposited in exactly the same way as the Peterborough Tradition pits (one major pot broken into large segments with a few sherds of other vessels) is isolated from them by some 200m. It is also isolated from the other Grooved Ware find spots (Pits 6041 and 6043) 450m away amongst a loose clustering of pits identified as Pit Group VI. In this cluster the Grooved Ware pits are close together and adjacent to others which contain only a few grams, perhaps closer to the Fengate fabric, but not definitively identifiable. The other pits, isolated from them, contained pieces of an urn-like vessel (PGVI.A), almost certainly a Fengate pot but atypical, a fragment of a more typical Fengate collar (PGVI.B), other featureless sherds similar to PGVI.B and, in Pit 6061, a tiny thin-walled sherd with well-crushed grits which, though featureless, is reminiscent of Beaker fabrics from Llandegai Henge B. It is noteworthy that this is the only hint of Beaker pottery on this large site.

## *Catalogue of Illustrated Finds and comparisons*

### *PGVIII.A*

(Fig. 34)

Large segments of this pot survive involving almost 75% of the rim, but none of the lower body or the base. Several segments, broken in antiquity, join and the integrity of the find groups suggest that they had been quite carefully placed in the pit.

It is a flared bowl, 300mm in diameter; the height is conjectural. It has an upright rounded rim the upper 12mm thinned on the inside producing a slight ledge. The profile varies around the pot; in places the ledge is sharply defined, elsewhere it is little more than a bevel. On the outside the rim is encircled by a band 25mm deep of 4 -5 shallow grooves. Below this the pot seems to be entirely covered with random blunt stab marks made at an angle.

The fabric is thick (14mm) and rather poorly fired, yellowy beige in colour outside with a grey/brown core; the interior is sooted in places. The interior surface seems strangely 'corroded', almost as if it had been stabbed with some pointed instrument, the indentations being larger and deeper than on the outer surface. The fabric feels light despite its thickness and few inclusions are visible.

All the features of this pot suggest that it belongs to the Grooved Ware tradition: the light poorly fired fabric, the simple flared profile, the shallow horizontal grooving at the bevelled rim and the random stabbed decoration of the body. The flattened base is missing and it lacks any decoration on the inside of the rim, a feature common on pots of this type elsewhere. Parallels can be found at Hunstanton in Norfolk (Healy et al 1993) and in Yorkshire and Scotland where the relative restraint of ornamentation is comparable (Cleal and MacSween 1999).

### *PGVIII.B*

(Fig. 34)

**PGVIII.B** is a flat-rimmed vessel 280-300mm in diameter decorated with sharply cut U-shaped grooves in two encircling bands, one with two grooves, and the other with three. A band of regular stab marks may lie between the two bands of grooves. The shape is essentially straight-sided but with a slight curve towards the base. It seems to be less flared than PGVIII.A.

There are three sections of rim amounting to 140mm (c.15 % of the circumference). There is significantly less of this pot and all the others in the pit than there is of A.

The rim is flat with rounded edges, 12-14mm thick and neatly smoothed. On the outside 15mm below it are 2 sharply cut grooves 8mm apart. Another 3 sherds may all belong to a single piece (c. 120 x 60mm) which does not join to the rim but provides evidence for another band of 3 grooves cut in the same way and for the band of regular stab marks, either above or below it. These wall sherds are 10mm thick. One rimsherd has suffered damage to the surface by the join is convincing.

The fabric is hard, well-fired and dark throughout, especially near the rim. The ancient breaks are unabraded.

### *PGVIII.C*

(Fig. 34)

**PGVIII.C** is a piece from the body of a rather more curved jar, 220mm in diameter, similar to Pot B but made from a rather thicker and softer fabric, more like that of Pot D, but less eroded. The decorative scheme is like that of Pot B: 3 encircling grooves, V-shaped and deeply cut, with a plain band below and 1 or 2 grooves below that. The outer surface is buff, the inner one darker with a dark core.

These two pots are very similar to each other and to pots from sites such as Balfarg, Fife, and Flamborough, Yorkshire, where grouped horizontal grooves and limited in-filling are relatively common (Barclay and Russell-White 1993, 94-108; Manby 1974, 70-4). They could also be compared to Irish Grooved Ware in the Knowth style, which itself has been linked to Scottish material (Brindley 1999, 24).

### *PGVIII.D*

(Fig. 34)

**PGVIII.D** is another large flat-rimmed jar with deeply cut horizontal grooving but in this case in a rather more elaborate design. Unfortunately only one segment of this pot survives.

It is 300mm in diameter, decorated with 2 encircling grooves above a band of diagonal hatching fading into uncertainty due to the eroded nature of the surface. It is possible that the decorative scheme may have been open triangles. There may have been some stabbed decoration as well but the surface of the pot is so eroded that it is impossible to be certain. A possible piece of base (50 x 20 x 15mm) suggests that the bottom diameter was only 20mm less than the girth, giving a very straight jar shape. A slight outward turn at the lower edge of the sherd is probably due to the vagaries of manufacture.



The fabric is quite hard and well-fired, especially at the rim, but the surfaces are softer and so pocked that it is difficult to see the decoration, though the V-shaped grooves are deeply cut. The outer surface is beige in colour, the inner one grey with a grey/brown core.

#### *PGVIII.E*

(Fig. 34)

Four small upright rimsherds belong to a smaller jar with a possible diameter of 140mm and a wall thickness of 8mm decorated below the rim with a panel of reversed diagonal hatching. Two other sherds are judged to belong to the base of the same pot since the fabric is identical. These suggest a straight upright wall 8mm thick turning in to an unusually thin base with a diameter of 100mm. Two other wall sherds may be close to the base. The other 18 fragments in the find group are small featureless pieces with the same fabric characteristics. Both the inner and outer surfaces of all sherds are deeply pocked and eroded. The colour is pinkish beige with a dark vesicular core. Stone grits can be seen on the surface, but not in the core.

Both Pots D and E may be compared to the jar from the Amesbury Chalk Pit (Harding 1988, fig.3.b) though they do not have the internal decoration which is common in these straight-sided jars in the south of England. P8 from Trelystan near Welshpool is another comparable piece, especially similar to PGVIII.E because of its multiple hatching (Britnell 1982 164). Pot D is very much larger than E and the other comparanda, but most Grooved Ware assemblages demonstrate that similar shapes may be made in different size ranges.

#### *PGVIII.F*

(Fig. 34)

The final pot from this pit, **PGVIII.F**, is very unusual and unfortunately represented by only one sherd. It is a thin pointed rim, presumably from a small bowl decorated with applied pellets. There seem to have been two lines of these, just on the rim and 16mm below it. The two surviving on the lower row are only 6mm apart and there is a possible scar of a third. All are 9mm across and 2mm high. The fabric is smooth-surfaced, dark and vesicular.

Bowls with applied pellets are very rare but there is one from Walton (Gibson 1999, P48) and possibly another from Trelystan (Britnell 1982, P15) in Grooved Ware contexts, but the closest comparisons come from Newgrange in Ireland where small pellets occur on three bowls in a thin dark fabric similar to PGVIII.F (O'Kelly *et al* 1983, fig.37).

#### *PVI.C*

(Fig. 33)

**PGVI.C** from Pit 6041 in Pit Group VI is an undecorated bowl in a smooth, hard fabric, brown throughout. The rim is simple, pointed and slightly inturned, and it is judged that the bowl would have been quite small (*cf* one from North Deighton (Manby 1999a, fig.6:4.5)).

It is not quite as thin and fine as PGVIII.E, nor so interesting, but it probably belongs to the same range of finer bowls, which occur in small quantities in most assemblages and are not stylistically distinctive.

#### *PGVI.D*

(Fig. 33)

**PGVI.D**, also from Pit 6041 is represented by a neatly made base, 140mm across, exhibiting one flattened vertical cordon and possibly the scar of another. There are 57 other featureless sherds in the same poorly fired fabric with orange inner and outer surfaces and a black core.

#### *PGVI.E*

(Fig. 33)

**PGVI.E**, from the same context, is represented by 22 sherds from the lower body and base of what was probably a large jar (300-340mm in diameter) decorated with vertical ridges emphasised by fingernail marks (which result from pinching the clay). The fabric differs from D. The outer pink/orange surface is very soft and has been worn and weathered, but the core, tempered with a lot of well crushed stone grit, is fairly hard.

Vertical cordons and ridges are a feature of Grooved Ware in most parts of the country. A number of similar bases come from Durrington Walls in Wiltshire (Wainwright and Longworth 1971, fig.34) and from North Carnaby Temple in Yorkshire (Manby 1974, 37-52). They also occur amongst the Grooved Ware from Walton and from Trelystan in Wales. There is a substantial section from the base of a large jar (GL96.883) with a much wider vertical cordon amongst the unpublished material from Glyn, Llanbedrgoch, Anglesey (Redknap 1995, 2000).

The 47g of pottery in pit 6043 is made up of 11 featureless sherds in a fabric similar to PGVI.C.

## Discussion

The Grooved Ware from Llandygai is an important addition to the limited assemblages from Wales because of its size and variety (Longworth and Cleal 1999, 203-4,206).

In the light of these new finds it might be appropriate to re-assess the large rimless pot, B63, from Henge B at the nearby sanctuary (Lynch and Musson 2001, 68-9), though the definite indications of a rounded base are still a barrier to its ascription to the Grooved Ware series. Examination of the material from Glyn, Llanbedrgoch in the National Museum does not show very close parallels to the Llandygai assemblage, principally because of the absence of any obvious Fengate material (Redknap 1995, 2000). The Glyn vessels are much more tub-like than the Grooved Ware from Llandygai and the wide bases are all footed. However GL2000.2633/2453/2587, the most complete Grooved Ware pot from Glyn, does show a band of horizontal grooving overlaid by fingernail or stab marks below a simple rim, which is reminiscent of both B63 from the sanctuary and the more bowl-like pots, PGVIII.A-C. The rather soft beige fabric and the strange erosion of the inner surface are also superficially comparable.

Comparisons with the small assemblages from below the barrows at Trelystan (Britnell 1982) seem somewhat closer than with the larger group of material from Walton (Gibson 1999). Although both these sites are ascribed to the Durrington Walls style, the material from Llandegai, certainly from Pit 1553, should perhaps be deemed Clacton Style, now thought to be somewhat earlier than true Durrington Walls material (Garwood 1999, 157-9). If this is so, the date for the appearance of Grooved Ware at Llandygai would be round about 3000 cal BC, about the middle of the date range for the Welsh Peterborough tradition (Gibson 1995, 30).

The two dates obtained from Pit 1553 (NZA 26693 and 26694) span the period 2893-2670 cal BC and would seem to confirm the suggestion above that pots PGVIII.A-F are contemporary with the pottery from Trelystan (Britnell 1982) and rather earlier than some of the other Welsh Grooved Wares assemblages, such as that at Walton (Gibson 1999, 96-7). The two dates from pit 6041 which contained pots PGVI.C-E, sit rather awkwardly together, considering that they both come from the same sample. One (NZA26680) is earlier than expected (3482-3121 cal BC) and should perhaps be discounted. The other (NZA26681) gives a span of 2571-2458 cal BC, a little bit later than the Walton dates and sitting within the later half of the Durrington Walls style (Garwood, 1999, 156). Insofar as the pottery from pit 6041 can be assigned to a sub-style, it would fit with this later date. It is interesting that the run of dates from the Llandygai pits confirm the temporal unity of the Peterborough styles and their separation from Grooved Ware, a pattern which seems to be consistent across the whole country.

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**Table II.1: Typological Features of Fengate Vessels at Llandygai**

Feature	II A	II B	II C	II D	III A	III B	III C	III D	III E	III F	III G	III H	III I	III J	III K	III L	III M	IV A	IV B	IV C	V A	V B	V C	V D	V E	VI A	VI B
Curved collar	*	*	-		*	*	*	*	*	*	*	*	*	*	*			*			*	*					
Rim: herring bone	*	*	-		*	*	*	*	--	*	†	†	†	†	†			*			*	*					
Rim: pointed											*	*		*	*												
Pits under collar	-	-	*		†	†	†	--	--	--	†	†	--	†	--			*			*	-				†	*
Shoulder	-	-	-		?	--	†	--	--	--	--	--	--	--	--		?	--			?	-				--	--
Straight collar /flat rim																										*	
Flat base	-	-	-	-	*	--	--	--	--	--	--	--	--	--	--			--			*	-		*		*	--
Odd rim																			*				*				
Finger nail decoration	*	*			*	*	*	*	*	*	*		†					*		*	*	*	*	*	*	*	*
Incised decoration				*	*	*					*	*	†	*		*	*				*						
Cord decoration										*			†		*												
Stabbed impressions						*							†														

Key: \* Present † Definitely absent -- feature not present in surviving sherds



## PREHISTORIC POTTERY CATALOGUE

### Pottery from features around the Early Neolithic House

#### *Pottery from postholes and structural features of the house*

(Listed from east to west)

Context **1486** Find No. **1101**

Upper fill of posthole **1483**, one of the east gable posts of the building.

1101: Crumb, fine dark vesicular fabric

Context **1392** Find No. **1100, 1271, 1314**

From fill of pit **1393**, on line of gable at E end of building.

1100: 1 fragment of red/black vesicular pot 7mm thick

1271: crumbs

1314: crumbs

Context **1655** Find No. 1008

Secondary fill of posthole **1656**, SE corner of building

1008: 1 fragment, slightly odd fabric but looks Early Neolithic

Context **1441** Find No. **80**

From possible post-trench **1404**

80: 1 sherd (23 x 23 x 7mm) of red (? Re-burnt) vesicular ware and 8 tiny fragments of same.

Context **1442** Find No. **1013** and **1134**

Fill of post trench **1404**, inside E gable end of the building.

1013: 1 sherd (20 x 13 x 6mm) red/black vesicular + 6 crumbs

1134: crumbs only

Context **1443** Find No. **1012, 1040** and **1325**

Fill of post trench **1404**, inside E gable end of the building. Possibly contemporary with 1445

1012: 18 Fragments of dark vesicular except 1 crumb ? burnt stone.

1040: 1 Fragment, Pink, rather abrasive ?? **Romano-British**

1325: Frags/crumbs of dark vesicular

Context **1445** Find No. **79** and **1105, 1143**

From possible post-trench **1404** inside E gable end of the building

79: **Rimsherd** (20 x 28 x 6mm) a neatly out-turned rim with smooth but eroded (moth-eaten vesicular) surfaces. Pale beige throughout.

1105: 1 red/black vesicular fragment 6mm thick

1143: 1 dark vesicular fragment 8mm thick

Context **1446** Find No. **1011**

Fill of post trench **1404**, inside E gable end of the building; probably represents final silting of feature.

1011: Red/brown abrasive fabric with grits, fine and also rounded. Possible impressions on surface. Does not look Early Neolithic

Context **1516** Find No. **989**

Fill, with charcoal and ?burnt stone, of **1515**, a posthole within the post-trench at E gable of building

898: red crumbs ?re-fired.

Context **1369** Find No. **1139**

Upper fill with stone packing, flint and worked stone, of posthole **1370**, part of partition across E end of building.

1139: crumbs only

Context **1290** Find No. **1259, 1269, 1302**

Fill of **1291** a small posthole with packing stones, part of a partition across E end of building.

1259: 3 vesicular fragments, pink, black and brown.

1269: Fragment, brown vesicular fabric

1302: fragment of dark vesicular fabric.

Context **1340** Find No. **891** and **1016**

Fill with charcoal of **1339**, a small pit or posthole inside E end of building

891: 1 sherd (30 x 30 x 6mm) of more compact vesicular ware with semi-burnished outer surface. Not entirely typical of the other Early Neolithic wares.

1016: 1 sherd (25 x 25 x 6mm) with a fine, coke-like texture, broken at a coil; 1 fragment similar.

Context **1405** Find No. **84** and **1014**

Fill of post pipe in Posthole **1406**, one of the main aisle posts.

84: 1 sherd (15 x 15 x 7mm) dark vesicular ware, outer surface burnished. From the curve of the **neck of a shouldered bowl**

1014: 1 brown vesicular fragment 8mm thick ?burnished surface.

Context **1389** Find Nos. **82** and **77** and **1133**, **1154**, **1264**

Packing layer within Posthole **1406** with flint, Graig Lwyd flakes and burnt bone

77: **Vesicular neck sherd** (36 x 30 x 8mm), outer surface burnished, inner smooth but matt. This could be from near the **shoulder** of Find 84.

82: 1 featureless sherd (20 x 23 x 7mm) loose vesicular ware, outer surface semi-burnished. This could be part of the same pot; it is equally fine but there are more voids and the surface is matt.

1133: 1 dark vesicular fragment, 5mm thick

1154: 4 vesicular fragments (1 pink with some grits)

1264: 1 brown vesicular sherd (20 x 22 x 6mm) with burnished surface and 1 fragment

Context **1513** Find No. **92** and **1010**

Packing around post pipes 1533 and 1570 in Posthole **1532**, one of the main aisle postholes.

92: 2 pinkish sherds (22 x 25 x 6mm and 20 x 20 x 8mm) of slightly vesicular pottery with no visible grits.

1010: 4 reddish vesicular crumbs

Context **1555** Find No. **111**

From a slot (**1556**) possibly part of a partition within the house

111: Dark vesicular sherd (18 x 18 x 6mm) and 2 fragments of pinks ? burnt clay.

Context **1610** Find No. **120**

From a slot (**1611**) possibly part of a partition within the house

120: 1 small sherd (13 x 13 x 6+mm) consistent with Early Neolithic date.

Context **1526** Find No. **1257**

Fill of post-pipe within posthole **1519**, one of the main aisle posts of building.

1257: 1 crumb red/black.

Context **1403** Find No. **76**

From Posthole **1402**

76: Sherd (23 x 22 x 12mm)? from lower body of pot; vesicular ware but thicker than normal; pinky beige with smooth matt exterior.

Context **1293** Find No. **1141**

Primary fill of **1294**, a posthole on the south wall of the building

1141: 1 small sherd of thin, fine pottery possibly containing very fine grit.

Context **1683** Find No. **127**

From Posthole **1684** in west gable wall of Early Neolithic building

127: 1 sherd (40 x 25 x 11-8mm) of slightly vesicular pottery with a little grit. One edge has a straight bevel but it is more likely to be the top of a coil than a rim, or possibly due to damage with a trowel, which has certainly damaged other surfaces. It just might be part of a hemispherical cup, hence the tapered thickness. It is probably Early Neolithic, but not very typical.

Context **1709** Find No. **151** and **1261**

From recut (1707) within Posthole **1691**, one of the main West gable posts of the building.

151: 5 sherds and 3 crumbs of hard, well-fired vesicular beige/brown pottery. The largest is 30 x 25 x 8mm; some others are 10mm thick but they are all probably the same pot. 2 sherds have deep impressions one of which has caused a hollow in the outer surface. 1 sherd (20 x 20 x 8mm) has a marked ?internal curve which might be a shoulder, but it is too small for certainty. There is one crumb of red surfaced vesicular pottery.

1261: 6 small fragments of abraded pottery with unusual impression/inclusions (not decoration)

Context **1731** Find No. **172** and **1294**, **1324**

From 'recut' (1707) within Posthole **1691**

172: 2 featureless semi-burnished vesicular sherds (20 x 25 x 12mm and 20 x 25 x 9mm). One damaged by trowel. These sherds could be the same pot as the main group in Find 151

1294: crumbs

1324: 3 fragments of vesicular pottery

Context **1722** Find No. **1380**

Post-packing fill of posthole **1691**, possibly re-deposited material from the digging of 1691

1380: 1 fragment of dark vesicular pottery.

Context **1723** Find No. **1379**

Post-packing fill of posthole **1691**

1379: 4 fragments of dark vesicular pottery.

### ***Finds from Pits close to the East Gable of the house***

Context **1327** Find No. **71** and **1103, 1114, 1127**

From Pit **1328** close to East gable of the house

- 71: 1 sherd (30 x 25 x 7mm) possibly re-burnt, vesicular ware
- 1 fragment (12 x 10 x 7mm) dark vesicular ware, perhaps from a shoulder or rim.
- 1103: 2 small sherds 6-7mm thick red (?re-fired) and 5 crumbs, black
- 1114: 4 crumbs, black and pink
- 1127: 1 crumb

Context **1216** Find No. **65** and **1018, 1029**

From Pit **1249** near SE corner of building

- 65: 1 thin dark vesicular sherd (25 x 32 x 6mm) with semi-burnished outer surface
- 1 red sherd (20 x 14 x 8mm) possibly re-burnt
- 1018: 3 sherds and 8 fragments; 2 contain white grits the others are vesicular
- 1029: 3 fragments of dark vesicular fabric

### **Finds from Pit 1619 at west end of house**

Context **1631** Find No. **1030, 1125, 1138, 1186** and **1258**

Charcoal-rich layer in pit 1619, contained the butt end of a stone axe.

- 1030: 1 sherd (20 x 20 x 7mm) with an internal curve suggesting a gentle shoulder. Fabric dark vesicular with minute grits making surface slightly abrasive. 3 scraps similar. 1 thicker piece (20 x 15 x 11) of more compact fabric with minute grits. This might be close to a thickish rim.
- 1125: 3 tiny scraps, 2 dark vesicular, 1 more compact.
- 1138: 1 scrap 8mm thick of pinky/beige vesicular fabric; 1 tiny scrap more compact fabric.
- 1186: 1 fragment (10 x 10 x 7mm) dark vesicular, with outward curve which might be near rim but the edge is a coil break not the rim itself.
- 1258: 1 sherd (27 x 15 x 7mm) of pink/brown vesicular ware without minute grits, rather soapy feel.

There are 3 slightly different fabrics present, all consistent with Early Neolithic wares. A bowl with everted rim and gentle shoulder curve is suggested.

### ***Finds from Features West of the house***

Context **1703** Find Nos. **136, 141** and **1027, 1140**

From secondary fill of Posthole **1704** at west end of line of posts SW of house

- 1 fragment (15 x 20 x 8mm) of vesicular pottery with badly eroded outer surface (136)
- 10 fragments (largest 25 x 30 x 5mm) of very loose vesicular, poorly fired, featureless. 11 crumbs of the same pottery (141).
- 1 sherd (20 x 12 x 8mm) is better fired, with a red outer surface and brown interior (141).
- 1027: 2 fragments and 3 crumbs of red/brown vesicular pottery with good inner surface
- 1140: red/black crumbs only

Context **1708** Find No. **899, 892** and **877**

From Posthole **1704**

- 12 tiny fragments of red/black (washed) pottery consistent with Early Neolithic ware (899) 3 + 4 further fragments, similar (892 and 877). All are similar to the reddish sherd in Find 141

Context **1728** Find No. **1006**

Fill of possible beam slot **1727**, to the W of the Early Neolithic building

- 1006: 1 crumb

Context **1730** Find No. **1126**

Fill of pit **1729** to W of Early Neolithic building

- 1126: red/black vesicular crumbs.

Context **1744** Find No. **179**

From a burnt patch near gullies west of house

- 179: Fragment (22 x 12 x 9mm) of the **outer edge of a rim** showing that it was made as an additional coil. Vesicular ware, pink/beige smooth matt outer surface, black core.

Context **1726** Find No. **167**

From upper fill of linear hollow or ditch (**1738**) S of house, with large rubbing stone

- 167: **Rim and body of a dark vesicular unshouldered bowl** 300mm in diameter. All sherds join to form a single section of pot 135 x 100mm. There are several recent breaks but the ancient breaks suggest that there were originally 4 sherds with very slightly abraded edges; however the fact that all sherds were found close together would indicate that the piece was broken in the pit, lying inside uppermost and struck by a sharp object. Whether that was ritually significant or accidental no one can say. The fabric is very hard and well fired, 7-9mm thick; brown surfaces, semi-burnished, especially on the inner rim and interior; core black with many small angular voids and no visible stone grit. The shape is undoubtedly unshouldered, with a slightly pointed rim with a wide overhang at one end of the piece, but with a more rounded profile, like that of Find 130 from Context 1670, at the other.

Context **1739** Find Nos. **1145, 1170, 1198, 1356, 1370, 1377, 1288**

Fill of linear hollow/ditch **1738** south of house

- 1145: 1 dark vesicular fragment with good inner surface
- 1170: tiny crumbs
- 1198: 2 vesicular fragments with good inner surface

- 1356: 5 red/brown vesicular fragments 6mm thick
- 1370: 2 crumbs
- 1377: 6 fragments with vesicular fabric but containing some v. fine grits.
- 1288: 3 tiny crumbs

All the residue finds are consistent with the main find.

### ***Finds from patches of surviving old ground surface south and west of the house***

Context **1670** Find Nos. **129, 130, 131, 132, 138**

From land surface surviving in a hollow (**1669/1670**) to south of house

- 129: 3 crumbs not inconsistent with Early Neolithic date.
- 130: 1 **expanded rimsherd** of hard vesicular pottery with smooth surface (where surviving), dark throughout. The rounded top of the rim has been formed from a thin coil, which separated from the one below in antiquity (stuck for drawing). The combined piece is 30 x 20 x 11+mm
- 130: 1 **out-turned rimsherd** (20 x 22 x 8mm) in pinker, softer vesicular pottery. The thin outer edge of the rim has been curled over.
- 130: 3 crumbs and a small sherd (20 x 20 x 7mm) of hard, brown vesicular pottery.
- 131: 1 featureless sherd of dark, hard but eroded pottery with a reddish exterior and sooted interior (30 x 25 x 6mm); 2 fragments of thicker and redder ?pottery with an abrasive feel; 2 fragments of stone
- 132: 1 sherd (25 x 25 x 8mm) of poorly fired vesicular pottery with a smooth matt outer surface.
- 138: 1 tiny fragment (12 x 10 x 6mm) of **everted rim**, very hard but not burnished; 1 sherd (30 x 20 x 7mm) and 2 fragments of hard but less compact vesicular pottery .

Context **1700** Find No. **139**

From land surface surviving in a hollow (**1669/1670**) south of house

- 139: 1 sherd of vesicular pottery (20 x 23 x 7mm) with badly eroded outer surface.

Context **1713** Find Nos. **143, 144, 145, 146, 147, 149, 153, 154, 157, 168 and 1028, 1137, 1255**

From an old land surface within the south side of a hollow (**1669/1670**) south of house

- Finds 146, 147 and 153 are similar sherds, vesicular reddish in colour and 8mm thick; all are featureless.
- 143: contains 10 sherds 7-10mm thick vesicular with very moth-eaten pink/beige outer surface and dark, ?sooted interior. There is no indication of shape and no joins, though all may belong to the same pot of which 5400 sq mm may survive. There is a hint of stone grit in the fabric. An 11<sup>th</sup> sherd (20 x 17 x 7mm) may be closer to those in Find 149.
- Finds 149 and 154 are similar dark vesicular sherds. 154 contains a fragment from the **tip of a rim** (8 x 15 7mm) and a piece from a **curved neck** (lacking interior surface (15 x 20 mm)). 149 contains dark vesicular pottery, 3 joining to make a piece (53 x 48 x 6mm) from the **curved lower body** of a pot, perhaps 160mm in diameter. The other pieces might also join to make a section 72 x 48 x 6mm. The fabric is hard, smooth but matt with a rather coke-like texture (very small voids).
- 145: a small sherd (15 x 16 x 6+mm) of rather abrasive pottery, not obviously vesicular and *perhaps not Early Neolithic*
- 157 and 144 contain abrasive material, heavily gritted without good surfaces, rather similar to the **burnt material** from *Context 1758*.
- 168: is lighter than 157 but may also be **burnt clay** rather than pottery.
- 1028: 1 sherd (20 x 25 x 6mm) of dark vesicular pottery, 3 similar crumbs and 2 red slightly abrasive crumbs (see 145)
- 1137: 2 dark vesicular fragments 6mm thick
- 1255: 1 crumb

Virtually all the sherds in this context are small and abraded but recognisably Early Neolithic. Three different rimsherds suggest that very small quantities of three different pots are involved.

Context **1706** Find No. **137**

From land surface surviving in a hollow (**1716**) west of house

- 137: 1 sherd (35 x 20 x 8mm) of compact and only slightly vesicular undecorated pottery with brown surfaces and black core with a very little grit. Not entirely typical but almost certainly Early Neolithic in date.

Context **1512** Find No. **89**

From an animal burrow to W of house

- 89: Vesicular sherd (30 x 25 x 10mm) with slightly soapy feel to smooth surfaces; pink outer, pale grey inner surface.

Context **1692** Find Nos. **133 and 134**

From an animal burrow west of house

- 133: 1 sherd (30 x 30 7mm) of vesicular pottery with beige surfaces and black core.
- 134: 1 sherd from the **angle of a shoulder** (28 x 29 x 6mm) in vesicular pottery with good, semi-burnished surfaces, dark throughout. There is a definite but un-emphasised change of angle at the shoulder.

Context **1758** Find Nos. **222, 223, 224, 229 and 230**

From old ground surface surviving west of house

- All are the same doubtful material, **not identifiable as pottery**; perhaps burnt clay. All are slightly abrasive, some with visible grits. Most are hard and lumpish without obvious surfaces. The size of the lumps varies from 10 x 15 x 10mm to 25 x 19 x 19mm.

All the contexts associated with the house contain exclusively Early Neolithic pottery. The rims and the few pieces of neck and shoulder indicate that they derive from normal shouldered bowls but very little of any vessel survives. Most sherds are small and abraded, suggesting that they are essentially domestic rubbish, a conclusion reinforced by a study of the material from the sieved residues which, apart from 2 small fragments from trench 1404, is entirely consistent with the larger pieces. A very

few joins can be made between ancient breaks but they remain small pieces, except the large section of rim and body of the straight-sided pot, Find 167 from pit 1738. This might be considered a deliberate 'deposit' but the rest seem to be accidental inclusions. The nature of the finds is closely comparable to those from the house found in 1967. It should be remembered that the posthole fills were not sieved in 1967 so the quantity of crumbs etc is less.

The old ground surface contexts also include predominately Early Neolithic material, again small quantities of several different vessels. Context 1713 contains 1 sherd, which might not be Early Neolithic but it is not far from the norm. The hard, abrasive material from 1713 and 1758 is not true pottery but is difficult to explain.

### **Pottery from miscellaneous contexts within Trench 1**

Context **1821** Find No. **799**

Fill of burnt tree hollow (1822)

799: 4 tiny red fragments, not certainly Early Neolithic

Context **1069** Find No. **86**

Patch of stone deposited by colluvation and ploughing

86: 1 sherd (15 x 15 x 12mm) of hard abrasive undecorated pottery with red inner and outer surfaces and a black core. Also some tiny fragments of the same fabric. This feels as if it might be Late Neolithic or even Early Bronze Age.

Context **1002** Find No. **90**

Ploughsoil

90: 1 sherd (25 x 25 x 11mm) with red/beige inner and outer surfaces and black core. Contains well-crushed grit. Similar to Find 86.

Context **1063** Find No. **829**

Fill of animal burrow (1064)

829: Softish orange crumbs only. Similar to material from 1099

Context **1099** Find Nos. **801, 834, 835**

Fill of intensely burnt feature (1098), possibly a burnt out burrow or tree hollow

All are lumps without clear inner or outer surfaces. 834 is more beige than orange with some stone inclusions; others are without obvious inclusions. This might be burnt clay or daub rather than pottery. There is just a possibility that it might be pieces of clay moulds. There are a number of curved surfaces, but none is recognisable, more like straw or sticks.

### **Pottery from Pit Group I and other features near road: Trench 1**

There are 4 Peterborough pots here (B, C, D, and E), represented by very small quantities of sherds.

There is one small abraded sherd of Early Neolithic material which is probably residual, and one piece of a clay ?tube or possibly a tiny cup made in a fabric quite unlike the Peterborough pots.

Context **1156** Find No **58**

Layer of OGS overlying feature 1096

2 sherds and 3 crumbs

1 sherd (25 x 19 x 6mm) vesicular, rather moth-eaten surface, abraded but one small patch of burnish on outside = *Early Neolithic ? residual*

1 sherd (20 x 13 x 12mm) hard with largish grits; outer surface orange, core and inner black = *? Late Neolithic or EBA*

Context **1257** Find No **68** and **1296**

From pit 1258 cut by ditch 1034

68: Crumbs only, but *genuine pottery*; orange surface with darker core and some quartz grits. One crumb is 9mm thick.

1296: 1grm of pink/black crumbs

Context **1219** Find No **806**

From 1220, a likely animal burrow

19 pieces (crumbs and lumps) of uniformly bright orange clay, soft and light. No sign of surfaces, but a certain texturing and some stone inclusions. Some lumps are 15-18mm thick, all are rounded. This is burnt clay rather than pottery. Similar to find 835

Context **1048** Find No **22, 23, 50, 833** and **1022**

From Pit 1049

2 different Peterborough-style pots, A & B, are represented by very small quantities of sherds; the crumbs and fragments are consistent with this style, but may belong to other pots.

PG1.F. 45 x 35 x 11-12mm, with beige outer surface and darker inner and small/medium stone grits. **Decorated** with 5 evenly spaced lines of stab-and-drag decoration. No indication of size or shape of pot (22).

A featureless, thinner sherd from (23) may be part of same pot (F).

PG1.G. 50 x 35 x 14mm, with brown/beige outer surface and black inner; a less cohesive fabric than 1 with larger stone grits (some white ?quartz). **Decorated** with less coherent curved lines (4-5) of complex impressions, ?bird bone. No indication of shape or size except that the sherd is curved, possibly from near the base of a bowl (22).

Fragments with large angular grits but pinker fabric from (833) and (23) may belong and a piece from Pit 1036, (8) might also belong to this pot (G).

50: Crumbs only



- 833: Mainly crumbs but 1 undecorated piece 15 x 15 mm  
 23: Mainly crumbs, pink/beige in colour and generally consistent with the decorated sherds in 22 but not certainly from the same pots. 1 sherd (25 x 15 x 9.5mm) dark brown, rather vesicular fabric but harder than E. Neolithic and smooth but not burnished, with a slight curvature. The fabric is different from 22/23 sherds but generally similar to fine quality Peterborough sherds in Pit 1036 (7).  
 1022: 4 g of pink/black crumbs

Context **1026** Find Nos **1, 794 and 1025**

From Pit 1027. Disturbed by an animal burrow.

3 sherds from a single Peterborough pot (C) and 1 sherd from small ? cup

- 1: 1 **decorated** sherd (39 x 25 x 14mm - the only piece surviving to full thickness) Pink/beige outer surface with black core and possibly some burnt deposit on the inner surface; large fresh, angular quartz grits. Decoration just recognisable as two lines of round stab marks in grooves. (PG1.C)  
 Another sherd with poorly preserved outer surfaces are consistent with the above.  
 1 very soft, thin, yellow/beige sherd (2 x 20 x 5mm) with a rather moth-eaten but quite compact surface and no obvious signs of grits. This is sharply curved and may come from a small cup c. 70mm in diameter  
 794: Crumbs and 1 larger sherd (25 x 25 x 10mm) are also consistent with the above.  
 1025: 3grm crumbs, pink/black

Context **1035** Find Nos **6, 7, 8, 785, 790, 795, 831, 898 and 1023 and 1024**

From Pit 1036.

- PG1.B. 1 very finely **decorated** rimsherd (35 x 24 x 16 (width of rim) - 9mm (neck)) Inner bevel of rim decorated with 4 lines of small stab-and-drag marks, neatly made; outer curved flange of rim: upper angle with 1 line of tiny diagonal marks; below this, diagonally set lines of stab-and-drag marks, the raised areas between them burnished. The curve of the neck below the rim is well smoothed. The fabric is dark brown throughout, hard and well fired with some small quartz grits. (8)  
 PG1.Ba. 1 **decorated** sherd (21 x 22 x 9-12mm) probably from below a rim similar to (B). Below the almost-burnished curve of the neck are 2 lines of close-set line of ?stab-and-drag marks. Fabric dark brown throughout and very similar to B. (7)  
 PG1.D. 1 cruder, coarser **decorated** rimsherd (35 x 30 x 16 (rim) - 14mm (neck)) of same general type as B with inner edge inturned rather than bevelled and outer flange flat, decorated with 4 concentric lines of stab-and-drag marks. The curve below the rim is poorly formed and there are 2 rough lines of stab-and-drag decoration below it. (6)  
 2 fragments of the outer surface of a bowl (both 20 x 17 x 4mm) **decorated** with close-set lines of stab-and-drag marks. The fabric and quality is close B and D and the decoration could fit either. They have been assigned to D because of proximity.  
 PG1.C. 1 small bevelled overhanging rimsherd (14 x 19 x 12mm), light brown throughout with angular quartz/mica grits. The decoration is neat stab-and-drag lines and lines made with a sharp roulette. There are 3 lines on the inner bevel, 2 stab-and-drag, 1 rouletted; on the outer bevel there are 2 rouletted diagonal lines. Although generally similar to PG1.B, it is slighter and the absence of the sharp incised line on the top of the rim suggests it is a different vessel (PG1.C) (1023).  
 PG1.E. 1 sherd (28 x 26 x 12mm); outer surface and core yellowy beige with dark inner surface; ?4 lines of decoration using twisted cord and a more circular stamp. No indication of the shape of the pot (831).  
 6: 1 sherd of ?pottery/burnt clay (20 x 25 x 5mm) red/pink throughout with a rounded edge (or possibly rim). The piece has a finger-width curve and might be the end of a tube of some kind or a tiny moulded cup (diameter c. 30mm).  
 831: 1 sherd (26 x 30 x 7mm) of undecorated vesicular pottery with a slight concave curve, possibly from a neck. The sherd is abraded and may be residual Early Neolithic  
 785: 1 fragment (15 x 20mm) with red outer surface and a possibly incised line. This and fragment (790) look more similar to material from Pit 1049 than the dark sherds in (6-8).  
 Fragments and crumbs in (795), (898) and (1024) are consistent with the dark sherds in (6-8)

Context **1051**; Finds nos. **11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 26, 27, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 804, 889, 920 and 1021 .**

From Pit 1052.

This large quantity of pottery seems to belong to a **single large Peterborough bowl in the Mortlake style** (PG1.A). There is variation in colour and effectiveness of firing and the extent to which ridges are sharp or smoothed, but such variation is to be expected in pots of this kind. The system of decoration varies down the body but at each change there are sherds, which show the transition. Only Find 38 contains a sherd, which might possibly be from another pot, but it is unlikely. Find 889 is a single sherd (20 x 25 x 7mm) of dark vesicular pottery which is likely to be **residual Early Neolithic material**.

## Pottery from Pit Group II: Trench 4

These three pits contain only small pieces of pottery but the rimsherds are sufficiently distinctive to identify the style as Fengate, though the collarless curve of PGII.A can be paralleled among Grooved Ware at Durrington Walls. However the absence of a defined collar is not positively confirmed amongst any of the Llandygai pots.

Context **4048** Find No. **488**

Fill of Pit 4049.

- 488: 1 featureless sherd 25 x 15 19mm; pink outer surface with abundant angular stone grits.

Context **4022** Find Nos. **494, 815 and 1002**

Fill of Pit 4021, close to Pit 4012

- 494: 1 rimsherd (60 x 48 x 13mm); smooth compact fabric with red/pink surfaces and brown core. An **in-curving rim** with fingernail marks in a herringbone pattern on the inner bevel and 4 lines of horizontal fingernail marks on the curved

exterior with an indication of a diagonal line below (PGII.A). No indication of the base of the collar survives. Possible diameter 250mm.

815: A washed fragment with rounded stone grit, which looks similar to 494.

1002: residue, pink crumbs

#### Context 4013 Find Nos. 706, 490 and 1005

Upper fill of Pit 4012

- 706: 1 sherd (40 x 30 x 12mm) from the **base of a collar with a deep pit** below it (PGII.C). Pink, abrasive fabric.  
1 sherd (40 x 30 x 11mm) from a **neck or collar with roughly scored hatching**, thin fine lines deeply cut (PGII.D). 2 fragments (20 x 20 x 10 and 15 x 15 x 10mm) with similar scoring. A crumb is similar. The scored sherds seem harder than the collar and more heavily gritted, but they could be the same pot.
- 1005: residue: crumbs similar to 706
- 490: 1 small **rimsherd** (PGII.B) with diagonal lines made with a fingernail on the outside (18 x 25 x 11mm) similar in shape to PGII.A and to many other rims from the site. The top of the rim is damaged but there is a hint of herringbone decoration surviving. The fabric is pink with much angular grit.  
1 sherd (25 x 15 x 12mm) with **fine scoring** as Find 706  
2 undecorated sherds (50 x 34 x 13 and 20 x 30 x ?mm) which are the same fabric as the collar in 706.  
5 crumbs and 2 pieces of ? burnt clay.

#### Context 4014 Finds nos. 1389 and 1004

Main fill of Pit 4012

- 1389: 1 sherd (38 x 29 x 12mm) of red fabric with angular grits (as 490)  
1004: crumbs similar.

### Pottery from Pit Group III : Trench 4

#### Context 4068 Find Nos. 525, 526 and 1365, 1367 and 1371

Fill of Pit 4069.

Pit 4069 contains quite a substantial section of the rim of one pot (PGIII.H) and only small fragments of another. There is a faint possibility that PGIII.H is part of Pot PGIII.F from Pit 4092.

- 525: Large sherd (80 x 55 x 12mm) from a **rounded collar** with virtually no overhang (260mm external diameter) decorated with rough deeply incised cross-hatching (PGIII.H). The fabric is hard with abundant stone grits but the surfaces have been smoothed over them. Both the inner and the outer beige surface have been sooted in places. The core is black.
- 526: 4 small sherds. Two are from a **pointed rim** 40 x 15 x 8mm) with diagonal incisions on the outside, in a hard brown fabric. It joins pot PGIII.H in 525. There is another possible rim, (10 x 20 x 7mm) more sharply inturred and undecorated (PGIII.I). It is less certainly a rim; it might just be from the base of a collar, but is rather too thin. The 4<sup>th</sup> sherd is featureless
- 1365, 1367, 1371: a very small quantity of fragments and crumbs which are slightly abrasive and not obviously related to the larger pieces recorded above.

#### Context 4061 Find Nos. 520, 521, 531, 533, 534, 626, 705 and 1374, 1385

Main fill of Pit 4062.

- 520: 1 sherd (60 x 50 x 15-19mm) possibly from a **neck** where it approaches the shoulder (PGIII.M). There a light scratches on it, which might be decoration, but the pattern is not coherent. The fabric is beige/pink outside, with a black core and grey inner surface and contains large/medium stone grits. It is slightly soft to the feel.
- 521: 1 featureless sherd (40 x 25 x 10mm) and 5 smaller similar ones. The fabric has a beige surface and brown core and is compact but stony. The surfaces have eroded badly giving the pottery a *moth-eaten appearance*. This fabric is also present in small quantities in 580 from Context 4093 in this Group.
- 531: 12 sherds and crumbs of softer beige-surfaced 'moth-eaten' fabric. 2 sherds have **combed decoration** on the outer surface. 1 sherd (46 x 30 x 8mm) is curved and has diagonal lines of ? twisted cord across what is judged to be part of a **collar** (PGIII.K), the 9 others are featureless but are clearly coil-built.  
3 sherds (largest 25 x 25 x 9mm) of harder fabric with a good surface and lightly incised decoration (? Cross hatching)  
1 very thick sharply curved red sherd (60 x 40 x 19mm) with an approximate diameter of 120mm and a small piece of abrasive red-coloured pottery.
- 533: 3 sherds and crumbs of soft beige surfaced 'moth-eaten' fabric with black core. 1 sherd (55 x 50 x 8mm) has an area of comb-marking on the outer surface. The other sherds (30 x 15 x 9 and 33 x 25 x 10mm) are featureless.  
1 sherd (48 x 35 x 9+mm) possibly from a lower body with diameter about 140mm with lightly scored cross-hatching (PGIII.L). The fabric is hard, brown throughout with large angular grits. The incised pieces in 531 may belong.
- 534: 6 featureless sherds (largest 40 x 25 x 10mm) of 'moth eaten' fabric.  
1 sherd more abrasive with large quartz grits.
- 626: 1 sherd (75 x 70 x 13-15mm) from a **curved collar with a pointed inturred rim** decorated on the outside with incised counter-hatching (PGIII.J). The fabric is hard, orange/red throughout with much large angular stone grit.
- 705: 1 lump not certainly pottery  
1374 and 1385: only crumbs of slightly abrasive pottery not obviously related to the larger pieces found (except 531)

#### Context 4067 Find Nos. 522 and 627

Burnt deposit in the bottom of Pit 4062.

The 2 fragments of pottery are rather unusual; perhaps they have been re-burnt.

- 522: 1 fragment of softish pottery with orange outer surface with unusual angular grits. 2 lightly incised lines on the outer surface, inner surface lost. Fabric unlike others.  
627: 1 fragment of whitish gritted ware, which looks a little like Roman mortarium.

Pit 4062 contains only small quantities of 4 or 5 pots. There are two pots with curved collars, which are comparable to others from this pit group. The cross-hatched sherds may belong to a lower body,

which indicates that decoration regularly covered the entire body of the pot, a feature which distinguishes these Late Neolithic urn-like vessels from the later Bronze Age ones.

Context 4093 Find Nos: **529, 530, 540, 541, 532, 580 and 1026, 1146 1265, 1267, 1303, 1386**

The fill of Pit 4092. It contained a large quantity of pottery, a high proportion probably from one single vessel, but other pots are present in small quantities.

540: This rimsherd joins to Vessel PGIII.A with a recent break.

541: Sherds from stab-decorated body as in 580;

A curved sherd (30 x 12 x ? (coil break)) decorated with horizontal fingernail marks but not joining the main pieces of pot PGIII.C from 580 /530, may show the bottom of a collar; small hard sherd with internal projection.

529 and 530: These small groups of finds contained cord-decorated sherds and a few others.

529: 1 **collar sherd with arcs of double twist cord impression** and, possibly, a central depression. 1 fragment joins to make a piece 59 x 40 x 16mm.

530: A sherd (38 x 30 x 19) from the **bottom of the same collar** with a line of decoration, indicating the direction of the arcs.

1267: another piece of the overhang of the collar, which very probably joins sherd 529

**Rimsherd** (30 x 25 x 13mm) with curved cord lines on the outside and the abraded remnants of an inturned rim with herringbone finger nail marks.

1026: Fragment (15 x 14 x 12mm) of better preserved **rim** showing curved lines in cord on the outside and herring bone fingernail marks on the inside.

580: 4 fragments (c 25 x 20 x 14-15mm) with cord-decoration, which confirm the suggested re-construction of the decorative scheme: a deep (85mm) collar with an *oculus* pattern (triple circles carried out in impressed cord with arcs above and below). The inside of the circle was presumably plain but one sherd suggests that the centre may have been depressed to form a large dimple, but this is not confirmed by other pieces.

All the cord decorated pieces are in a very hard brown/black fabric with well-crushed grits and an abrasive surface, suggesting that one vessel, PGIII.E, perhaps about 300mm in diameter is involved, but little is present. Several undecorated fragments from the residues 1267 and 1026 are made from this fabric but nevertheless it is unlikely that much below the collar was present. A section of collar about 140mm wide (about 15% of the whole) might be reconstructed but the variation in condition of the rim suggests that it was never a single block and must have been deposited as broken sherds.

529: 1 sherd (50 x 40 x 16mm) with close set lines of **overlapping fingernail marks** on a curved piece which may be from a collar; hard, pink/brown fabric with large/medium stone grits. This piece has ancient breaks and the overlapping fingernail marks are unlike others present. There is another piece of fingernail-decorated collar in 580, which is probably the same pot (PGIII.D).

2 fragments of 'moth-eaten' fabric

532: 1 **rimsherd** (60 x 45 x 8mm) from a vessel, very similar to Vessel PGIII.A in 580 but with a narrower collar (28-30mm deep) and only 200mm in diameter. All breaks are ancient suggesting that this is part of a separate vessel. Hard, brown/black fabric. The collar is decorated with finger nail marks in a counter-hatched triangular scheme. The inturned rim has fingernail marks in herringbone pattern.

There is a very **similar collar sherd**, obviously from the same pot and with ancient breaks, in 580. The likelihood is that this collared pot (PGIII.B) is conical, with no shoulder

1 large sherd (80 x 60 x 15mm) from a plain section of body, close to a collar with an internal diameter of 280mm. The fabric is rather poorly fired with medium stone grits. All breaks are ancient. It is rather thicker than the upper parts of other pots.

These finds, which may come from the upper levels of the pit, seem to represent only small quantities of pots. The breaks are ancient and they may be the result of casual incorporation rather than deliberate deposition. The style of pots represented is, however, similar to the larger deposits.

580: This is the main group of finds from this pit. Large quantities of a single vessel PGIII.A (280mm external diameter at the collar) are involved and many recent breaks can be joined. However ancient breaks leave the pot separated into 3 sections amounting to about 50% of the rim circumference, though only one piece of shoulder is present and not much of the neck. A segment of base and lower wall of a plain body may belong. The vessel, therefore, was never complete. This would seem to be the main deposit and looks deliberate. However other vessels are present. Some, such as parts of a lower body with random stab decoration, are represented by quite large pieces and others by only a few small sherds. Pieces of the moth-eaten fabric with comb marks similar to the material from Context 4061: 553 and 531 (PGIII.K) are present

**'Moth-eaten' fabric** as in Finds 521, 530, 531, 533 and 534 from Context 4061. There are 9 sherds in this fabric. One (30 x 20 x 8mm) has comb decoration on the outer light beige surface; another (45 x 35 x 10mm) has a slight curve and might come from near a shoulder, but the group is essentially featureless.

1 small sherd of pale vesicular fabric similar to small sherds from sieving material from other pits not originally thought to be 'pot pits'.

All three pits in Group III contained evidence of burning and pottery within the Fengate style. Only pit 4092 had significant quantities of any one pot, a large Fengate urn (PGIII.A) with a sharply inturned rim with herringbone decoration, of which a smaller example was found higher up in the same pit. Likewise the curved pointed collar (PGIII.F) from Pit 4092, another Fengate characteristic, was popular and is found in a different fabric in Pits 4069 and 4062 (PG.III.H and J). Cord decoration (PGIII.E) is relatively rare in Fengate Ware but the few pieces here can be ascribed to this style, rather than Mortlake, because the concentric circle and arc motifs are late, commonly occurring in a grooved technique at Durrington Walls. Other fabrics and possible decorative techniques such as the 'moth-eaten' sherds and their combed decoration are intriguing, but so little remains that not much can be said about them except that the rounded collar sherd (PG.III.K), if it belongs with the other pieces, suggests

that the unusual fabric is used in traditional ways. Although these pits are approximately the same distance from the Early Neolithic house as Group I pits it is worth noting that there is no residual Neolithic material here. Many of the small residual crumbs from sieving from this group are not obviously derived from the deposited sherds and suggest material within the soils. Although the urn shapes could be mistaken for Bronze Age pottery, I think they are all definitely Late Neolithic; as is their pit burial context, although the meaning of these deposits, which could still be merely 'rubbish', is far from clear.

Although certainty is impossible, there is a faint possibility that pieces of the same pot (e.g. 'moth-eaten sherds' in Pits 4062 and 4092) might be distributed in different pits in this group, which is not the case in others, where individual pots seem to be restricted to particular pits. Pots PGIII.H and F are also possibly part of the same vessel.

#### Pottery from Pit Group IV: Trench 4

Context **4099** Find No. **539 and 993**

Upper fill of Pit 4100 which contained possible packing stones, charcoal and burnt stones.

539: 2 small sherds and 1 crumb (PGIV.D). All have an orange/red outer surface, brown core and inner surface. The feel is abrasive with much well-crushed grit. One sherd (22 x 17 x 9mm) is featureless; the other (25 x 20 x 10mm) has possible fingernail decoration.

993: residue: 1 small brown sherd (15 x 10 x 6mm). Too small to positively confirm similarity to 539.

Context **4108** Find Nos. **551, 827 and 1351**

Lower fill of Pit 4109.

551: 1 featureless sherd (25 x 25 x 7mm) and 3 crumbs of hard brown compact fabric, slightly abrasive to the feel (PGIV.E).

Despite the thinness this is not Early Neolithic; it is closer to the brown hemispherical bowl PGVI.C from Pit 6041.

827: A washed fragment (15 x 10 x 7mm) is similar but with a paler surface.

1351: residue. 1 small sherd (20 x 15 x 9mm) of dark compact fabric as 551.

Context **4104** Find No. **703**

Upper fill of Pit 4103.

703: 2 rimsherds and 2 pieces of collar and 3 crumbs (PGIV.A).

Both **rimsherds** (20 x 25 x 14 and 12 x 20 x ?mm) are similar, with internal bevel decorated with herring bone fingernail marks and the exterior having lines of fingernail marks.

1 sherd (40 x 40 x 14) comes from the **bottom of a collar** decorated with counter-hatched lines of fingernail marks. There is a pit beneath the overhang of the collar.

Another sherd (27 x 32 x 12) may also be from a collar decorated with lines which are less certainly made with a fingernail.

The fabric of all is similar: quite well-fired with outer surfaces smoothed before decoration; relatively sparse angular grits; outer surfaces pink/brown with brown core. It is judged that all 4 pieces are part of the same pot.

Context **4102** Find Nos. **543, 824 and 1003**

Lower fill of Pit 4103 contained large burnt ? packing stones.

543: 1 pink/beige sherd (25 x 30 x 12mm) with sooted inner surface (PGIV.C) is featureless except for 2 fingernail marks pinching the outer surface in a characteristic rustication technique, though the surface is not raised. Less hard and well-fired than the sherds in 703.

824: 1 pink crumb 7mm thick with ?impression on surface.

1003: residue: 2 fragments of the same slightly **inturned rim, the top cut by transverse notches** (PGIV.B). The fabric is smooth and brown throughout.

All three pits contained pottery, but in very small quantities. The style of the pottery is very similar to that in Group II and III pits; both contain fragments of characteristic Fengate collared vessels. The notched rim from 1003 is unusual. Burnt stones seem to be a notable component of the fills in this group and some of these stones gave the impression of being packing stones, so the pits may have had a practical function of some type

#### Pottery from Pit Group V: Trench 4

Only one of the two pits in this group, Pit 4133, contained pottery and all contexts are separately identified fills of this pit.

Context No. **4132** (upper fill) Find Nos. **555, 564 and 1266**

555: **Base of collar with a pit** (7mm diameter, 3mm deep); 2 fragments similar fabric. Hard fabric, brown throughout with large stone grits. Part of Vessel PGV.A, mainly in 568.

1 sherd (40 x 25 x 9mm) beige/black, rather softish fabric with a lot of angular grit and possibly some comb decoration and a very faint incised line on the outer surface.

1 red fragment (22 x 25 x 10mm) with 2 **fingernail marks**, fabric similar to sherds in 564.

3 fragments of black pottery with a lot of grits, without an outer surface (as 564)

564: 1 sherd (30 x 22 x 13mm) with a lot of grits; hard fabric, red outer and black inner surface; spaced **fingernail marks**. Similar to sherds in 555, 567 and 572.

Possible **pointed rim** (22 x 20 x 9mm) with most of the outer surface lost. Red fabric with much grit.  
1 sherd (20 x 25 mm) inner surface only of hard black fabric with lots of grit.  
1266: residue 17 small sherds and 47 fragments. 1 piece decorated with 2 fingernail marks is unusually thin for a lower body sherd. Some thinner plain dark sherds may be from the upright rim in 570 (PGV.C).

Context **4161** (fill from below large stone) Find No. **567**

567: 1 small sherd (20 x 25 x 13mm) with red outer surface, black inner and a lot of angular grit; **3 fingernail marks** in ? line. This might be part of lower body represented by 568.

Context **4149** (fill spreading up the North and west sides of the pit with a lot of charcoal) Finds Nos. **568, 569, 571, 572, 624, 625 and 590, 1142, 1311 and 1313.**

572, 625, 569: A run of **rimsherds** which join on ancient breaks to form **xxx%** of the circumference of a collared pot (Vessel PGV.A) 250mm in external diameter. The inturned rim is decorated with two lines of fingernail marks arranged in herringbone fashion. The curved outer surface of the collar (48mm deep) has concentric arcs formed by 5 or 6 lines of fingernail marks and there are spaced pits directly under the base of the collar. The pits, 20-40mm apart, are 4mm deep but do not pierce the wall. *Museum display sherds needed to complete info.*

558, 568, 570, 571, 624: Twenty-five sherds carrying faint cross-hatching in fine incised lines. The depth, thickness and spacing of the lines varies somewhat. Joining sherds show that this decoration covers the **neck** below the pits. The neck is at least 48mm deep but the shoulder does not survive. *Museum box contains 1 curved sherd with cross-hatching, which might be close to shoulder; 3 others and 3 crumbs, all with cross hatching.* Several fragments from 590, and all fragments from 1142, 1311 and 1313 belong to this pot.

Some of these sherds may come from the **body below the shoulder** for sherds from the base and close to it have rather incoherent cross-hatching, suggesting that the whole of the lower body might have been decorated in this way.

568: A substantial amount, perhaps 3/4 of a narrow (70mm diameter) **base** survives. The main piece is 42mm thick with very abundant large angular grits and decorated to the bottom with random dispersed fingernail marks. Other pieces of this base suggest that rough cross-hatched incised decoration also occurs at the bottom. A wall sherd, 40 x 30 x 17mm, which is close to the base has similar sharp incised decoration and various fragments without their full thickness suggest the same. Pieces from 1311 belong.

**The fabric** of the rim is hard and well-fired, brown throughout, with reasonably abundant stone grit, which causes the surface to be uneven. Some sherds in 572 have a pinkish surface, which is badly corroded, but the decoration is similar and the variation may be acceptable. Sherds from the neck are more beige, with a very black inner surface and core but are equally hard and contain large angular grits but they are less evident on the surface than lower down the pot. The base has a pink outer surface and is beige/grey inside; it, too is very abundantly gritted. The ancient breaks are sharp and unabraded.

All these find numbers also include a few sherds, which do not belong to Vessel PGV.A.

In 568 there is 1 sherd (55 x 35 x 14mm) with a slightly soft corroded surface with random stab marks; in 572 there is a pinkish sherd (50 x 40 x 14mm) (PGV.D) but the fingernail decoration is difficult to reconcile with Vessel PGV.A ; in 624 there is a large sherd (72 x 48 x 10mm) with extremely faint cross-hatching (PGV.F), but from the neck of a pot only 120mm in diameter, which suggests that other pots very similar to PGV.A may have existed and not been recognised among the lesser sherds.

Context **4147** (lowest full with a lot of charcoal and hazel nuts) Find Nos. **558, 559, 565, 570 and 1208, 1268, 1270, 1312**

558, 559, 570: include sherds, which are part of Vessel PGV.A of which the bulk was found at the sides of the pit. Most of the fragments from the residues from this context belong to the main pot.

558: Together with 8 sherds from the neck of Vessel PGV.A there was 1 sherd (52 x 35 10mm) with a smooth black interior and very rough beige exterior with protruding angular grits and rather incoherent decoration of deep ? nail and other marks (PGV.E). A rather similar sherd occurred in 570.

559: 1 sherd Collar with arc, and small fragment of rim.

570: contained 6 sherds and 3 crumbs of Vessel PGV.A, the largest 30 x 30 x 11mm, all decorated with cross-hatching.

1 sherd (20 x 26 x 9mm) red throughout

1 **rimsherd** (18 x 25 x 7mm), hard beige/brown throughout with small grits. The rim is upright with a fingernail mark on the top surface (PGV.C). Another piece of this rim came from 590 ; a featureless body sherd (30 x 40 x 7mm) came from 1268 and several small sherds in 1266 might belong to it, being hard and relatively thin.

1 small rough beige sherd, as above.

565: 1 **rimsherd** (35 x 26 x 9mm) from a curved collar similar to many others at the site but having decoration on the inside, below the inturned rim (PGV.B). The decoration on the inside consists of 5 lines of herringbone marks, made by a fingernail. Those on the rim are shallower than those below. The outside is decorated with shallow diagonal grooving, probably made by a fingernail. The fabric is hard, dark throughout with much large angular grit. The outer surface is uneven but has been smoothed. All breaks are sharp but ancient.

The distinctions recognised within the fills suggest quite a complex deposition history, and the fact that the bulk of Vessel PGV.A comes from the sides of the pit suggests that it might have been deliberately placed there, not accidentally incorporated in some process of back-filling. Quite a high proportion of the damaged rim is present, as is the base and these may have been the more carefully placed pieces. Smaller pieces, such as those mainly from the neck and body may have been more casually included since sherds can be recognised at all levels. In addition there are small pieces from two completely different rims PGV.B and C), perhaps part of another cross-hatched pot (PGV.F), featureless sherds from a red pot decorated with fingernail marks (PGV.D) which was equally widely dispersed through the pit, and a few pieces of badly decayed black pottery.

## Pottery from Pit Group VI: Trench 6

Context **6060** Finds Nos. **843 and 986**



The fill of Pit 6061.

- 843: 1 tiny crumb of hard beige/red pottery 5mm thick with very finely crushed grit.
- 986: another crumb of the same.

Context **6054** Find Nos **840** and **981**

Fill of Pit 6055 with charcoal and burnt flint and stone.

- 840: 6 tiny crumbs of red abrasive pottery with well crushed grit.
- 981: crumbs of the same abrasive fabric.

Context **6081** Find No. **839**

Fill of a probable tree hole [6075].

- 839: 3 crumbs of hard red abrasive fabric

Context **6042** Find No. **780** and **1361**

Fill of Pit 6043 with charcoal and flints.

- 780: 11 small featureless sherds (largest 15 x 25 x 11mm) all in the same rather 'mealy' fabric; orange/beige outer surface, black core and inner surface. It has an abrasive feel with well crushed grits, including a few larger pieces.
- 1361: 3g crumbs as 708

Context **6086** Find Nos. **867, 900, 907** and **983**

Fill of Pit 6087, a long way from the other pits in this group.

- 867: A hard orange lump with stone inclusions. Doubtfully pottery
- 900: A similar lump. Doubtfully pottery
  - 1 featureless sherd (22 x 25 x 7mm) and 1 fragment; hard red abrasive pottery
- 907: 1 featureless sherd (26 x 15 x 7mm); hard red abrasive pottery
  - 1 thick sherd (40 x 40 x 22mm) of very hard pottery with quite plentiful angular grits and a red outer and black inner surface. The outer surface is uneven with some possibly deliberate depressions. The curve suggests it might be close to a shoulder.
- 983: Crumbs of similar red abrasive pottery.

Context **6066** Find Nos. **846, 849, 850, 852, 854, 859, 930, 902, 903, 988, 984, 1070; 860, 861, 862, 857** and **1188, 1207** and **1256**

Fill of Pit 6072.

The majority of find groups from this pit contain pieces of the same pot (930). They share a very similar hard fabric with medium-sized angular stone grits. The surfaces vary in smoothness and colour according to position on the pot; most are beige - grey but a few are red/brown.

- 930: **Base of a collar** (60 x 60 x 16mm) with 3 lines of fingernail marks and a small deep pit beneath the collar (PGVI.B). The external diameter is about 240mm. A small sherd from 988 joins this collar.
- 903: 2 small fragments from the edge of a collar are likely to belong to PGVI.B.
- 850: Sherd (32 x 27 x 11mm) with coil break and 3 lines of fingernail marks
- 846: Sherd (30 x 40 x 13+mm) with coil break and fingernail marks. Both of these are likely to belong to PGVI.B
- 852: Large curved sherd (50 x 60 x 28mm) probably from close to the base. The diameter is about 120mm. The outer surface is undecorated, beige and smooth but rather pocked. The clay contains rather more grit than some of the others.
- 849, 854, 859, 902, 984 and 1070 and an unstratified find group (856) contain 6 featureless sherds which very probably belong to PGVI.B, together with a quantity of crumbs and fragments.
- 860, 861, 862, 902: 5 sherds of hard brown pottery with much angular grit which includes quartz. These are unlikely to belong to PGVI.B and have been labelled PGVI.F. The 3 sherds in 869-2 have small triple marks on the surface, randomly placed and it is uncertain whether they are any form of deliberate decoration. All are 13mm thick and likely to belong to the same pot but are otherwise featureless. 902 contains 2 thicker sherds which look to be the same fabric but have no marks on the surface.
- 857: A featureless brick-red sherd (30 x 30 x 9mm) with medium grits and an abrasive surface, but softer and 'mealy', as some sherds (PGVI.D) in Contexts 6005 and 6043 in this Pit Group. A fragment from 854 is similar.
- 1188, 1207, 1256: small quantities of crumbs consistent with the other material from the pit.

Context **6073** Find Nos. **865** and **866**

Another fill of the same pit, 6072

- 865: 1 **possible externally-bevelled rimsherd** (25 x 25 x 8mm) with a fingernail mark on the top (PGVI.G). However the bevel may be due to excavation damage. The fabric is uniformly red with very well-crushed grits.
  - 2 fragments of red/black pottery which probably belong to PGVI.B
- 866: 1 featureless red sherd (20 x 22 x 9mm) and 3 fragments similar to the possible rim above.

Most of the sherds in Pit 6072 are small and featureless but the collar of PGVI.B is sufficiently distinctive to indicate that the pottery belongs to the Fengate style, although, without the pit, one might have been tempted to call it Bronze Age. Very small quantities of 3 other fabrics (PGVI.D-type, PGVI.F and G) are represented.

Context 6005 Find Nos. 628, 766, 769, 773, 774, 775, 776 and 1109.

Fill of Pit 6041, with flints and burnt stone

- 628, 766, 773, 774, 775: all contain orange surfaced sherds with a 'mealy' fabric (PGVI.D). Only the **base** in 773 has any significant features. The other featureless sherds are likely to come from the lower body.
- 628: 17 fragments, the largest 25 x 25 x 9mm, with orange inner and outer surfaces and a black core. All are the same thickness (9mm) The pottery is poorly fired and breaks easily.
- 766: 5 small sherds, the largest 25 x 25 x ?, the other smaller, all 9mm thick. There is a hint of ? fingernail impressions on 2 sherds.

- 769: contains 16 crumbs in the same fabric.
- 773: A segment, 80mm long, of a neatly made very flat **base**, diameter 140mm, thickness 13, with a section of surviving wall 45mm high and 11mm thick. There are traces of a **flattened vertical cordon** (11mm wide and 1mm high) on this wall and a hint in the roughened surface that another one may have existed 25mm apart. There are 2 fingernail marks, which may be accidental. 22 crumbs are of similar fabric.
- 774: 16 featureless beige/orange sherds all 10mm thick, all poorly fired.
- 775: 19 featureless sherds, poorly fired, orange surfaces with black core, all 12mm thick.
- 774, 776 and 783 all contain sherds of a thicker orange/black fabric which come from the lower body of a **large pot decorated with vertical ridges** and finger nail marks (PGVI.E). The outer pink/orange surface is very soft and has been worn and weathered, but the core, tempered with a lot of well crushed stone grit is fairly hard. A small piece of base may belong to this pot but there is no indication of any upper body sherds being present.
- 774: 6 featureless sherds without obvious ridges, largest 50 x 42 x 15mm, with a soft pink/orange outer surface and black core.
- 776: A small segment of **base** much rougher than 773, diameter 100mm, thickness 17, in a fabric similar to the ridge wall sherds. Not enough survives to show whether the decoration comes right down to the base.  
A large **slab of wall** (100 x 70 x 16mm) from the body of a pot perhaps 340-300mm in diameter, **decorated with close-set ridges**. There are finger nail marks along the side of these ridges but they may be a product of manufacture rather than intended decoration, since the ridges have been created by raising them from the surface rather than by applying a separate strip of clay.  
9 other ridged sherds, clearly from the same pot but with much more worn surfaces, and 2 crumbs.
- 783: 1 sherd (47 x 40 x 16mm) with ridges, 5 others, smaller, with hints of ridges and 11 crumbs.
- 627: Residue sample contains 19g of crumbs, which could belong to either of the pink/orange pots.
- 769, 774 and 776 contain sherds from what is probably a single undecorated **hemispherical pot with a neat pointed rim**, diameter about 200mm, in a semi-burnished hard brown fabric with little visible tempering (PGVI.C). The edges are crisp and some ancient breaks join but it was not buried as a single piece. Approximately 90-120mm of the upper 55mm of the pot may be represented.
- 769: A small **rimsherd** (20 x 17 x 9mm) with ancient breaks.
- 774: 2 **rimsherds** (55 x 35 x 10-5mm and 55 x 30 x 10-5mm). Some ancient breaks join to these sherds.
- 776: 7 featureless sherds (largest 65 x 30 x 9mm) and a fragment of pointed rim.
- 1109: 36g of crumbs consistent with 628

This pit contains elements of three different pots (PGVI.C, D and E). The two larger ones are represented by bases and lower wall sherds only. The use of cordons on both may suggest Grooved Ware. The smaller hemispherical cup is a common type at many periods and can be found among assemblages in most styles, but is the only example so far seen at Llandygai.

#### Context 6006 Find Nos. 768, 630, 990

The fill of Pit 6034

All the pottery in this pit appears to belong to a single pot (PGVI.A), broken in antiquity and restorable in part, but not as large sections, though all parts of the pot are represented.

- 630: 1 base sherd 40 x 40 x ?18mm; wall above 12 thick; diameter of base 70-70mm. Decoration, vertical lines of fingernail marks, continues to the bottom.  
1 wall sherd 45 x 30 x 12mm with a poor surface.
- 768: 6 sherds from the **rim and collar** of an urn-shaped vessel (PGVI.A), 240mm in external diameter. Only 2 sherds from the rim itself survive, showing decoration on the top. They join convincingly at an ancient break, which almost coincides, with a change in the decorative scheme on the top; concentric fingernail marks and diagonal fingernail marks, which extend over the front on the rim at some points. The inner surface is poorly preserved and there is no sign of decoration there. The rim does not join to the collar below so the full profile is uncertain, but there is little doubt that they are the same pot.  
**The collar** is restored as 40mm deep and is decorated with lines of fingernail marks creating alternating panels of approximately vertical and horizontal lines. One incomplete section is slightly curved and might have been part of a concentric arc motif as on Vessel PGV.A rather than a skewed vertical, but no other sherd confirms this. The collar has been coil made and there are several sloping fractures. The bottom of the collar is sharply defined and several pieces of neck show the beginning of the curve under it. There is no evidence for pits in the wall at this point. Four sherds (3 illustrated) and a few surface fragments in Find 990 survive, combining to give a length of about 140mm which is not a continuous run.  
There is one ancient join between the collar and the neck, confirming the unity of the pot, but no other joins could be made.  
**The neck** is decorated by fingernail marks with a variable amount of rustication of the surface. Some sherds suggest that the intended scheme was paired fingernail marks in vertical lines, but it was not tidily achieved. The surviving depth of neck is 40mm. There are 9 sherds (largest 50 x 40 x 11mm) (3 illustrated) and 8 crumbs which may be from the neck, mainly the upper part. There is only one join to the collar. One fragment (20 x 23 x 10mm) shows a slight internal curve which might indicate the shoulder but not enough survives to reconstruct its angle.  
The **lower body** is represented by 3 sherds and a single small piece of the base. They all show a pattern of vertical lines of finger nail marks, alternately deep and shallow. The largest sherd (80 x 46 x 11mm) has rather abraded edges which suggests that it was not freshly broken when it was buried. The 2 other body sherds (45 x 30 x 11mm and 32 x 30 x 15mm) (1 illustrated) are less neatly decorated and rather more yellow in colour, but the variation is acceptable within one pot.  
Despite the small proportion of body present, since all pieces show decoration it is reasonable to suggest that the body was completely decorated.
- 990: Residue from sieving: 4 fragments with collar decoration.  
7 crumbs  
2 fragments possibly not from this pot; 1 orange; 1 black without angular grit.

**The fabric** of Vessel PGVI.A is consistent in all sherds though the colour varies from brown to red outside, with a black core and inner surface. It is very hard and well-fired with a lot of large/medium angular stone grit. The outer surface has been smoothed before decoration but the inner surface is very uneven with a lot of protruding grits.

This pit is unusually free of extraneous material, apart from the sherds of Vessel PGVI.A which was never complete and had become somewhat weathered since it had been broken. The rim of this pot is unlike the inturned ones favoured elsewhere on the site and it would be tempting to see it as Bronze Age, were it not for the overwhelming use of fingernail impressions and the extensive decoration of the lower body. Only in Ireland is decoration of the lower body of Collared Urns at all common and fingernail rustication is certainly not used. I would, therefore, ascribe this pot to the Fengate style.

Pit Group VI is well away from the others, on the lower slopes overlooking the river. It is amorphous and widely spread and several pits lack pottery. Five pits contain only crumbs and small featureless sherds, which are likely to be incidental inclusions. The predominant fabric is an abrasive red/black ware typified by the Fengate PGVI.B This is unlike the fabrics from the other Pit Groups where well-crushed grits are not common. Some of the tiny, thin crumbs in this fabric might possibly be Beaker pottery since it is not unlike the fabric used for Beakers at Henge B, but none has any diagnostic features. The absence of Beaker pottery on Parc Bryn Cegin where so much other Late Neolithic material was available, is noteworthy.

Pit 6072 (Context 6066/6073) has one predominant pot PGVI.B but only small sherds are present and it would be difficult to argue for deliberate deposition. The same is probably true on Pit 6041 (context 6005) where 3 pots are involved, but only in small quantities, though sherds are claimed to make up 34% of the fill content. Only Pit 6034 (context 6006) with an exclusive pottery content, suggests a deliberate burial.

### **Pottery from Pit Group VII: Trench 3**

Context **3144** Find Nos **474** and **476**

Upper fill of pit [3146].

474: 3 fragments of prehistoric pot. Seem to be genuinely without grits and quite close to PGIII 580 odd fabrics.

476: 1 sherd of prehistoric pottery. Contains a lot of burnt out inclusions, including grass. 474, 475 and 476 all have similar texture

Context **3145** Find Nos **475, 1072**

Lower fill of pit [3146], possible animal disturbance.

475: 9 fragments of prehistoric pottery

1072: 2 small sherds of prehistoric pottery from sample <292>. There is a good deal of well-crushed angular stone grit here. Good surface. This might be L. Neol/BA

Context **3154** Find Nos **878**

Fill of pit [3155].

878: Prehistoric pottery fragments from sample <294>. This seems genuinely different from the sherds from Pit 3146. There are tiny fragments of a variety of grits here. 1 sherd has v. well-crushed grit as in Grp VI pits

### **Pottery from Pit Group VIII: Trench 1**

Context 1304 Finds 1281, 1301, 1335

Fill of Pit 1305

1281: 1g, crumbs, various colours but all probably Early Neolithic

1301: 2g, crumbs, mainly Early Neolithic but 5 are pinker.

1335: 5g, 2 crumbs and 3 fragment of Early Neolithic fabric.

Context 1554

Fill of Pit 1553.

The pit contained a great deal of pottery from perhaps 6 different pots, none complete but present in quite large pieces. All the pots can be paralleled in Grooved Ware contexts such as the Walton Basin (Gibson 1999). Despite the nearness of the Early Neolithic house, no substantial residual Early Neolithic sherds were found in the pit, 20 crumbs and fragments (including an abraded rim) were found in the sieved residues from soil samples from this pit. In addition, a section from the centre of a polished stone axe and a flake of Graig Lwyd stone were found. Find numbers relate to clusters of sherds within the pit and in most cases they reflect the placing of sherds from one pot in a specific place. The deposit therefore appears deliberate and not subsequently mixed.

**95, 101, 102, 103** and possibly 2 sherds from 105: Large segments of this pot, **PGVIII.A**, survive. It has an upright rounded rim the upper 12mm thinned on the inside producing a slight ledge. On the outside the rim is encircled by a band 25mm deep of 4 shallow grooves. Below this the pot seems to be entirely covered with random stab marks made at an angle. There is 1 sherd, which might come from near the base.

The external diameter at the rim is 240mm, the thickness of the top of the rim is 5mm and of the wall sherds is 12mm.

The shape appears to be essentially straight-sided, with a gentle curve towards what would probably have been a flat base. All the find groups contain sections of the rim together with featureless sherds with random stab-decoration. Since

several pieces are in the museum it is not possible to accurately estimate what proportion of the pot is present, but it was certainly not complete since no base is recognisable. It seems to have broken vertically into straight segments about 60-70mm across and was perhaps slab-, rather than coil-, built.

The fabric is thick and rather poorly fired, yellowy beige in colour outside with a grey/brown core; the interior is sooted in places. The fabric feels light despite its thickness and few inclusions are visible.

- 105: 9 sherds, of which 7 are probably all from a single pot (**PGVIII.B**). The other 2 (50 x 45 15mm and 33 x 30 x 15mm) are likely to belong to Pot A from Find 101.

Pot B is a straight-sided, flat-rimmed vessel 280-300mm in diameter decorated with sharply cut U-shaped grooves in two encircling bands, one with 2 grooves, the other with 3. A band of regular stab marks may lie between the two bands of grooves.

There are two sections of rim amounting to 90mm (10 % of the circumference). The rim is flat with rounded edges, 12-14mm thick and neatly smoothed. On the outside 15mm below it are two sharply cut grooves 8mm apart. Another 4 sherds may all belong to a single piece (c. 120 x 60mm) which does not join to the rim but provides evidence for another band of 3 grooves cut in the same way and for the band of regular stab marks, either above or below it. These wall sherds are 10mm thick. Another small featureless sherd belongs.

The fabric is hard and well-fired and dark throughout, especially near the rim. The ancient breaks are unabraded.

- 96: A single dark, well-fired rimsherd (60 x 45 x 15-12mm) with a single thin groove 9mm beneath it. A diagonal section of the outer surface appears to have been removed leaving raised areas at either end, looking like two diagonal cordons. In other respects this rimsherd looks very similar to Pot B; the rim is a little thicker and the groove shallower and thinner (because of the loss of the surface). The estimated diameter is 240mm but the length of the sherd is not enough for certainty.

Within the variation seen in prehistoric pottery it is reasonable to suggest that this sherd comes from Pot B.

- 107: A single segment (85 x 60 x 12mm) of a straight-sided flat-rimmed pot (**PGVIII.D**) 300mm in diameter, decorated with 2 encircling grooves above an area of stabbed decoration and diagonal hatching fading into uncertainty due to the eroded nature of the surface. A possible piece of base (50 x 20 x 15mm) suggests that the bottom diameter was only 20mm less than the girth – a very straight jar shape.

The fabric is hard and well-fired, especially at the rim, but the surfaces are so pocked that it is difficult to see the decoration, though the V-shaped grooves are deeply cut. The outer surface is beige in colour, the inner one grey with a grey/brown core. The fabric is similar to Find 106, but thicker and more robust.

A single sherd (33 x 30 x 14mm) with 2-3 grooves may belong to Pot D.

- 108: A single large segment of pot and 3 crumbs probably from the same vessel. The large piece (65 x 75 x 13mm) comes from close to the rim of a rather more curved jar, 240mm in diameter (**PGVIII.C**), similar to Pot B but made from a rather thicker and softer fabric, more like that of Pot D, but less eroded. The decorative scheme is like that of Pot B: 3 encircling grooves, V-shaped and deeply cut, with a ? plain band below and 1 or 2 grooves below that. The outer surface is buff, the inner one darker with a dark core.

Also in this find are 2 small sherds which join at an ancient break forming a piece 52 x 35 x 7mm from the rim of a thin-walled vessel about 140mm in diameter (**PGVIII.F**). The piece has a rounded upright rim with 3 pellets (9-10mm across and 2mm high) below it. One pellet is close to the rim, the other two (6mm apart) and a slight scar, which might be that of a missing pellet, are little lower. Since the rim has been damaged diagonally it is possible that there might have been two rows of pellets, but this cannot be proved. The fabric is smooth surfaced, dark and vesicular with no visible grit, but the use of pellets is unknown in Early Neolithic pottery. A similar decorative scheme can be found amongst the Grooved Ware at Upper Ninepence, Walton, though on a rather heavier jar in a sandy fabric (P48, Gibson 1999, 90). It also occurs in the Boyne Valley, Ireland among Late Neolithic material.

- 106: Four small upright rimsherds belong to a pot (**1554.E**) with a possible diameter of 140mm and a wall thickness of 8mm decorated below the rim with a panel of reversed diagonal hatching (compare Trelystan P8 (Britnell 1982 164)).

Two probably join to make a section 50 x 30 x 8mm; the others are very small (22 x 25 x 8 and 10 x 22 x 8mm). One sherd (35 x 30 x 9mm) and 4 crumbs show evidence of hatched decoration.

2 sherds (40 x 45 8mm and 25 x 30 x 8mm) may possibly belong to the base of the same pot since the fabric is identical. These suggest a straight upright wall 8mm thick turning in to an unusually thin base with a diameter of 100mm. Two other wall sherds (30 x 40 x 10mm and 20 x 27 x 9mm) may be close to the base. The other 18 fragments in the find group are small featureless pieces with the same fabric characteristics.

Both the inner and outer surfaces of all sherds are deeply pocked and eroded. The colour is pinkish beige with a dark vesicular core. Stone grits can be seen on the surface, but not in the core.

- 1009 and 1136: finds from sieved residues. 20 fragments of Early Neolithic material including one small piece of eroded everted rim (drawn). 4 crumbs may be from the pinker Late Neolithic material.

Variable quantities of four flat-rimmed straight-sided jars with variations on the same decorative scheme of grooved bands and stabbed rustication were placed, presumably with some care, into the pit. Much smaller quantities of two other smaller pots are included, perhaps less deliberately.

### APPENDIX III: ANALYSIS OF TEN POT SHERDS FOR ORGANIC RESIDUES BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY.

Ben Stern

#### Sample preparation

Visible residues from the interior of each sherd were sub-sampled with a spatula. Weighed portions of each sub-sample were extracted with three aliquots of ~3 ml DCM:MeOH (dichloromethane:methanol 2:1, v/v), with ultrasonication for 5 min. followed by centrifugation (5 min 2000 rpm). Excess BSTFA (N, O- bis(trimethylsilyl)trifluoroacetamide) with 1% TMCS (trimethylchlorosilane) (*Pierce*) was added to derivatise the sample which was warmed overnight. Excess derivatising agent was removed under a stream of nitrogen. The samples were diluted in DCM for analysis by GC-MS. A know quantity of C<sub>34</sub> *n*-alkane was added to each extract as an internal standard.

#### Instrumental (GC-MS)

Analysis was carried out by combined gas chromatography-mass spectrometry (GC-MS) using a Hewlett Packard 5890 series II GC connected to a 5972 series mass selective detector. The splitless injector and interface were maintained at 300°C and 340°C respectively. Helium was the carrier gas at constant inlet pressure. The temperature of the oven was programmed from 50°C (2 min.) to 340°C (10 min.) at 10°C/min. The GC was fitted with a 15m X 0.25mm, 0.1µm OV1 phase fused silica column (MEGA). The column was directly inserted into the ion source where electron impact (EI) spectra were obtained at 70 eV with full scan from m/z 50 to 700.

#### Results

The results are presented as total ion chromatograms of the BSTFA derivatized solvent extract. These show each separated component of the solvent extract as discrete peaks, the area under each peak being representative of the abundance. The lower figures show a selected area of the chromatograms to illustrate the area of interest. Where identified, components have been labelled.

IS = internal standard, C<sub>34</sub> *n*-alkane

P = phthalate plasticiser

WE = wax ester, with carbon number

C = saturated fatty acid, with carbon number. u = underivatised

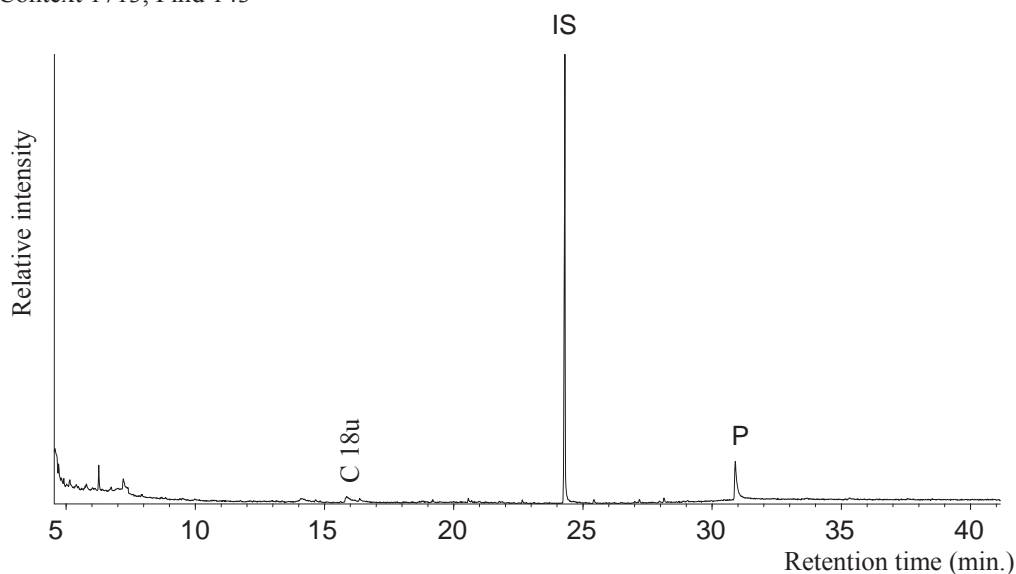
OH = long chain alcohol, with carbon number

MAG = monoacylglycerol, with carbon number

DAG = diacylglycerol, with carbon number

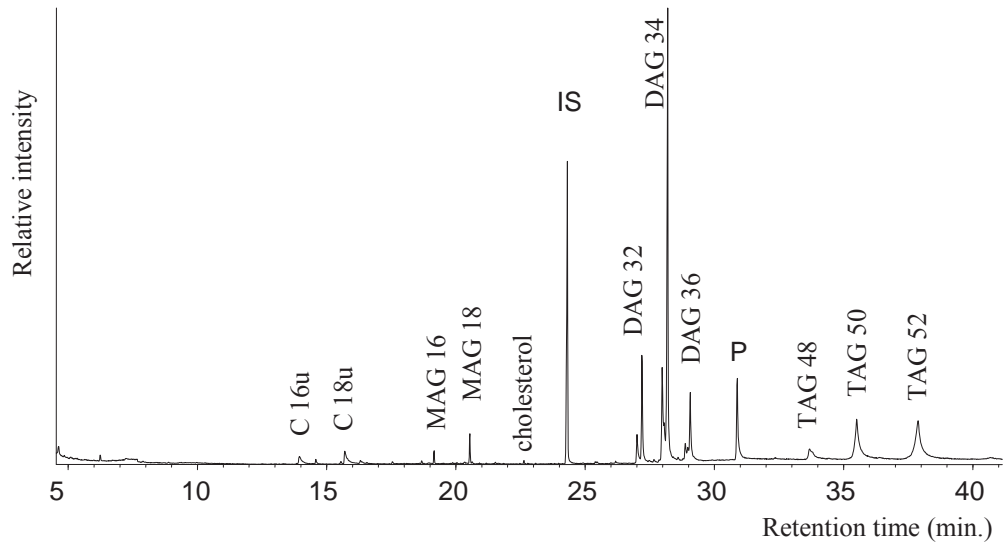
TAG = triacylglycerol, with carbon number

1431713, Context 1713, Find 143

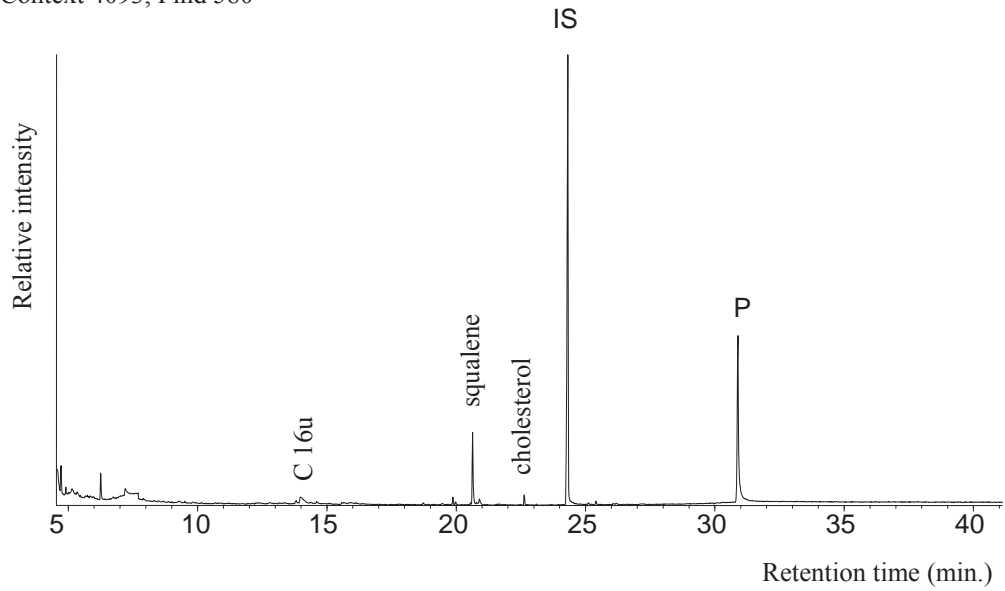




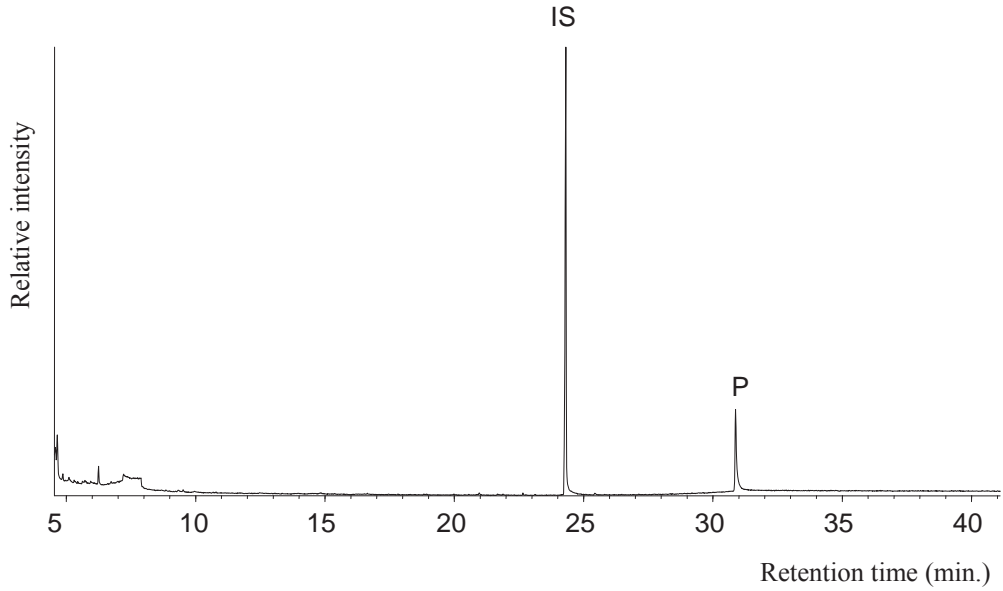
6005773, Context 6005, Find 773



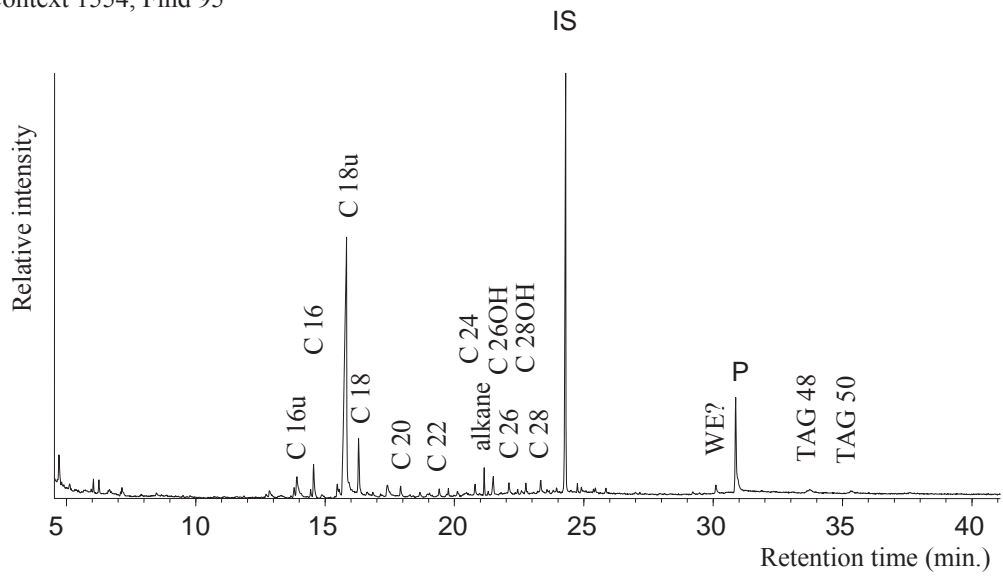
4093580, Context 4093, Find 580



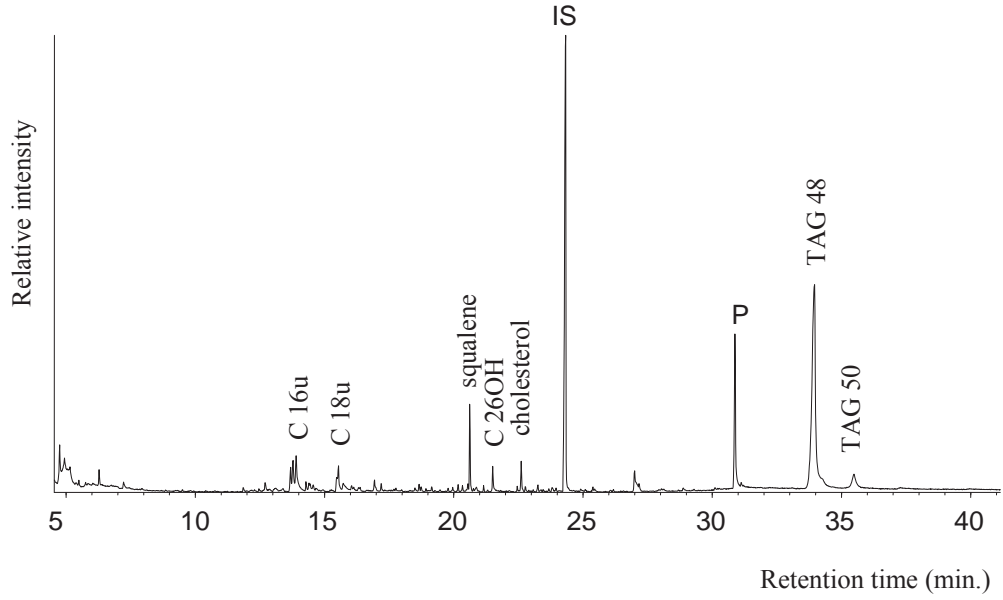
105140, Context 1051, Find 40



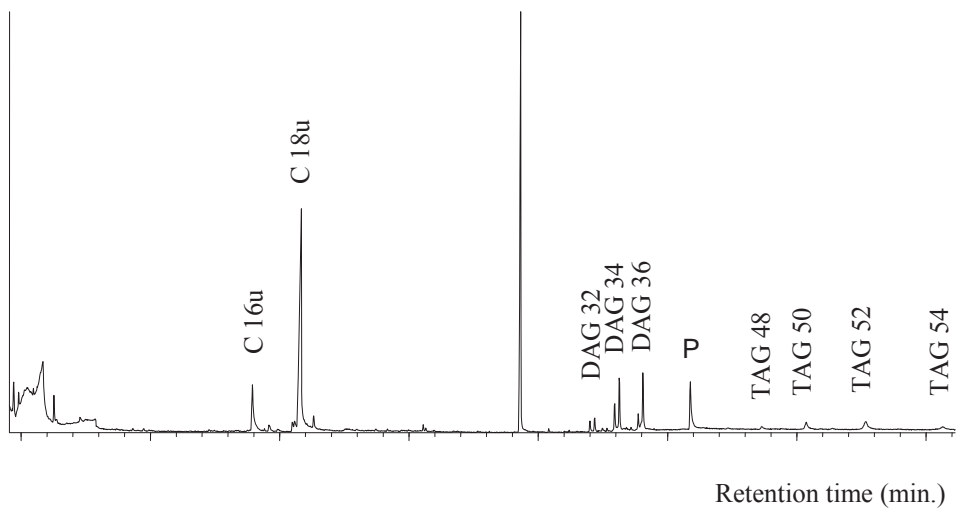
155495, Context 1554, Find 95



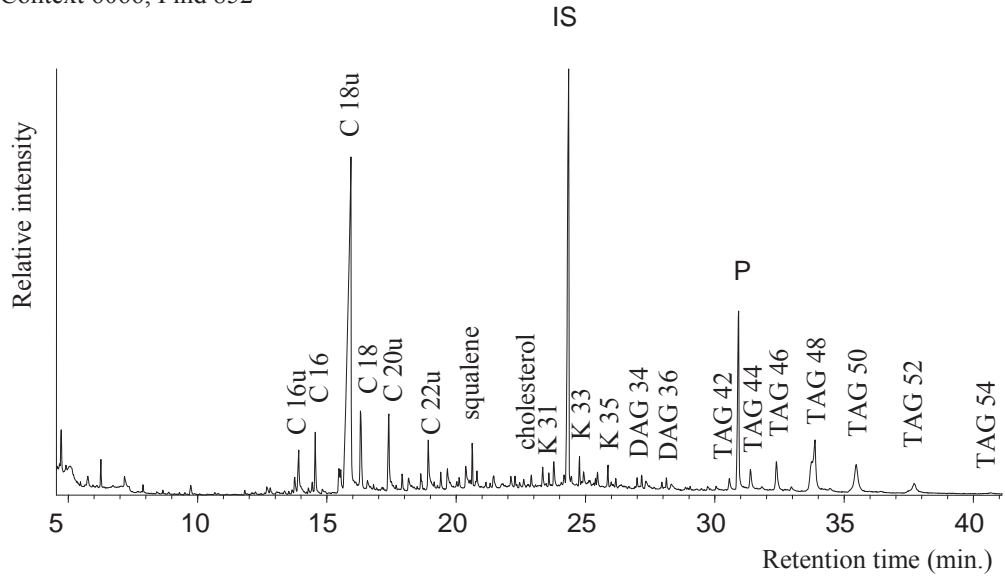
1554107, Context 1554, Find 107



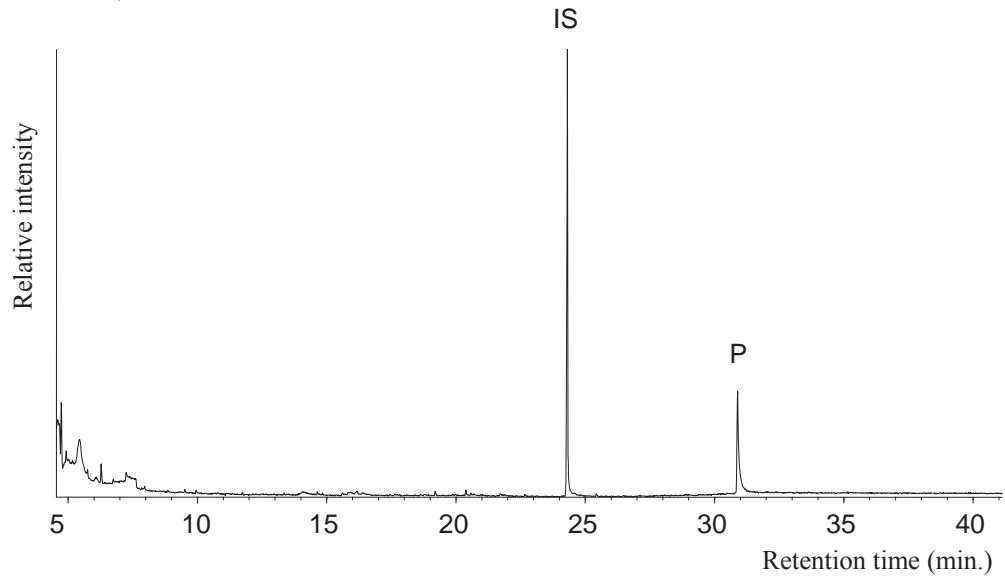
1670131, Context 1670, Find 131

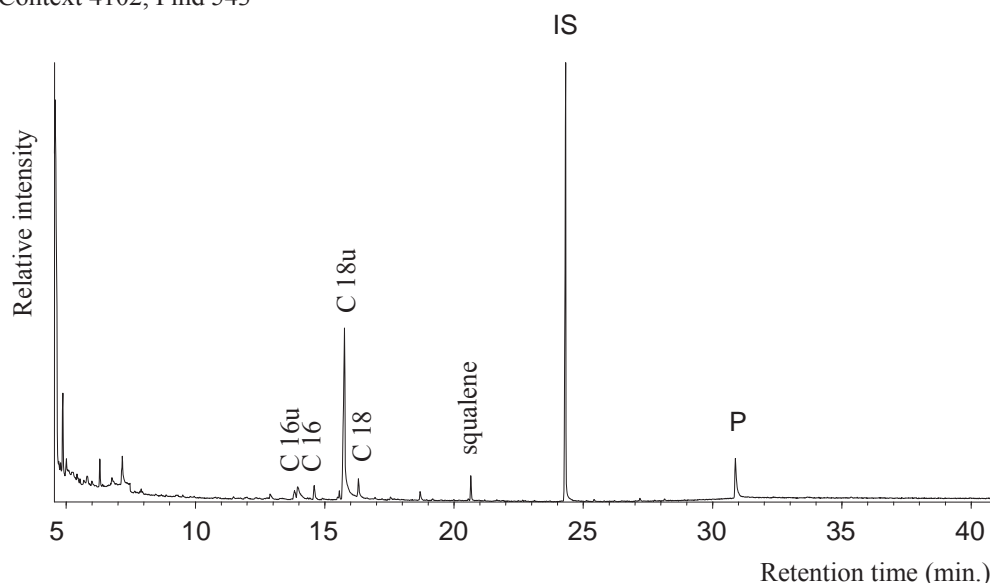


6066852, Context 6066, Find 852



10261, Context 1026, Find 1





### Summary

In the analysis of archaeological organic residues at trace levels many of the components extracted are known contaminants e.g. modern synthetic phthalates (P). These originate from a number of sources including packaging materials, sample preparation and instrumental artefacts etc. However, this contamination is easy to recognise and does not interfere with the analysis of any authentic lipids.

Cholesterol at low abundances was extracted from four sherds. Cholesterol is a marker for animal fats. However, the compound squalene was identified from many samples, this is important as both cholesterol and squalene are found on human fingerprints, and although cholesterol survives over archaeological time, squalene rapidly degrades. This implies that the cholesterol is not indigenous to the sherds and a result of recent handling.

Five of the sherds (Context 1713, Find 143; Context 4093, Find 580; Context 1051, Find 40; Context 1026, Find 1 and Context 4102, Find 543) yielded either no, or trace amounts of lipid. This is fairly typical of a residue study, where in my experience ~50% of sherds yield no lipid.

The remaining five sherds (Context 6005, Find 773; Context 1554, Find 95; Context 1554, Find 107; Context 1670, Find 131 and Context 6066, Find 852) yielded triacylglycerols and their degradation products the diacylglycerols, monoacylglycerols and the fatty acids. For the fatty acids, even carbon numbers were dominant across a range of C<sub>16</sub> to C<sub>28</sub>, with C<sub>16</sub> and C<sub>18</sub> the most abundant. Unusually, underivatised fatty acids (e.g. C<sub>18u</sub>) were recovered, this is either an instrumental/methodological artefact where the BSTFA derivatising agent has insufficiently derivatised the sample, or a result of degradation of the acylglycerols inside the instrument. Nevertheless this does not interfere with any conclusions.

The above evidence indicates that the original content was a triacylglycerol oil or fat, which has since partially degraded. The wide range of fatty acids, especially the longer chain ones, is indicative of a plant oil although this cannot be stated with certainty given the degradation of the sample.

In addition, odd carbon numbered ketones (C<sub>31</sub> to C<sub>35</sub>) were recovered from sample Context 6066, Find 852, these compounds are produced by heating an oil or fat, and are therefore likely to be produced during cooking.

Sample Context 1554, Find 95, yielded a possible wax ester and a number of long chain alcohols. Whilst the degraded state of these compounds cannot absolutely identify the origin of these, one possibility is beeswax. However, these compounds also occur in soil, so caution must be applied in interpretation.



## APPENDIX IV: THE ROMAN POTTERY FROM PARC BRYN CEGIN, LLANDYGAI

Jeremy Evans with contributions by M Ward

Some 129 sherds of Roman pottery were presented for examination, weighing 0.686kg.

### Fabric descriptions

BB1 - Black Burnished ware category 1, Poole Harbour area, Dorset. Williams (1977)

M01 - A whiteware pipeclay mortarium with red or black angular grog trituration grits. Mancetter-Hartshill.

M02 - Wilderspool Raetian type mortaria. The fabric has a dark blue-grey core with thin orange margins and surfaces with a thick dark red slip on the rim, with common translucent quartz sand temper c0.4mm. No trituration grits survive.

O01 - An oxidised fabric with an orange core, margins and surfaces, 'soapy' and 'clean'.

O02 - An oxidised fabric with an orange core, margins and surfaces, with a 'clean' matrix with occasional-some moderate sand c0.3mm.

O03 - An oxidised fabric with an orange core, margins and surfaces, with common moderate sand temper c0.3mm.

O04 - An oxidised fabric with a buff-orange core, margins and surfaces, with common fine-ish sand, c0.1-0.2mm.

O05 - An oxidised fabric with a buff-orange core, margins and surfaces, 'soapy', with some very fine lime >0.1mm.

O06 - An oxidised fabric with a blue grey core and orange margins and surfaces, with common coarse translucent quartz, c0.3-0.5.

O07 - An oxidised fabric with a buff-white core and margins and orange, oxidised surfaces, with some fine sand >0.1mm. Roman or post-mediaeval.

R01 - A greyware with an orange-brown core and grey margins and surfaces, with common moderate sand temper c0.2-0.3mm.

SGS - South Gaulish samian ware.

CGS - Central Gaulish Lezoux samian ware.

EGS - East Gaulish samian ware.

### Catalogue of rimsherds and diagnostic sherds

#### Trench 2

Context 2098                      SF221                      Fill of small hole

Two fragments of possibly prehistoric pottery with a black core and brown margins and surfaces, 'clean', Wt >1g

#### Trench 3

Unstratified                      SF715

a) Five sherds, two joining, from a BB1 jar rim, with a cavetto-like rim, early-mid 3<sup>rd</sup> century. D. 14cms, RE 7%, Wt 6g

b) A BB1 jar rim, slightly beaded rim tip and wavy line burnish on rim beneath this, perhaps Hadrianic-early Antonine. D. 16cms, RE 5%, Wt 2g (Fig. 66)

Unstratified                      SF689

Three joining excoriated, eroded, samian rimsherds, probably CG ware, Dr 33, AD 120-200. D. 10 cms, RE 12%, Wt 5g

Context 3176                      SF481                      Fill of 3177, curving gully in evaluation trench near Roundhouse A

A largely excoriated samian bodysherd, probably from the base of a dish of form 18 or 18R, but the surfaces are mostly missing, SG, AD 70-110, Wt 5g

Context 3231                      SF602                      Fill of 3230, inner drain, Roundhouse A

A BB1 simple rimmed dish rim fragment, probably 3<sup>rd</sup>-4<sup>th</sup> century. D. ?cms, RE >2%, Wt 3g

Context 3267                      SF563                      Fill of 3266, inner drain, Roundhouse A

A badly eroded samian bodysherd, probably Les Martres and therefore cAD 100-125 Wt >1g

- Context 3271                      SF576                      Fill of 3059, outer storm drain, Roundhouse A  
A BB1 dish/bowl simple base, interior burnished, exterior has acute lattice and sooted. Hadrianic-mid Antonine. D. 9cms, BE 11%, Wt 10g
- Context 3271                      SF575                      Fill of 3059, outer storm drain, Roundhouse A  
Two joining fragments of a BB1 bowl bodysherd, interior burnished, exterior acute lattice or pointed arcs. Perhaps Hadrianic-mid Antonine. Wt 3g
- Context 3271                      SF582                      Fill of 3059, outer storm drain, Roundhouse A  
A badly eroded crumb lacking its surfaces. The orangey red fabric suggests East Gaulish ware of the Antonine period: probably from Rheinzabern c A D 160-180/200 rather than Heiligenberg c 135-160, but its identification as East Gaulish ware is itself uncertain. Wt >1g
- Context 3271                      SF574                      Fill of 3059, outer storm drain, Roundhouse A  
A BB1 flange rimmed bowl rim fragment, slightly sooted, Hadrianic-Antonine. D. ?cms, RE 1%, Wt >1g (Fig. 66)
- Context 3271                      SF574                      Fill of 3059, outer storm drain, Roundhouse A  
A BB1 flange rim bowl rimsherd with intersecting pointed arc decoration. Mid 2<sup>nd</sup> century. D. 16cms, RE 9%, Wt 18g
- Context 3386                      SF1263                      Fill of 3387, inner drain, Roundhouse A  
A BB1 dish base, exterior sooted, exterior decorated with pointed or intersecting arcs, perhaps mid-later 2<sup>nd</sup> century. D. 10cms, BE 10%, Wt 7g
- Context 3693                      SF659                      Fill of pit 3694 in centre Roundhouse C  
A largely excoriated samian dish bodysherd lacking almost all surfaces, SG, AD 70-110. Wt 6g
- Context 3711                      SF650                      Upper fill of northern enclosure ditch  
A samian bodysherd and a flake (possibly joining). There is a squared cleat hole on one side. Date uncertain, probably CG, AD120-200. Wt 3g
- Context 3829                      SF671                      Heap of stones  
A Mancetter reeded hammerhead mortarium with red painted vertical bands on rim, cAD 220-350. Fab M01. D. 37cms, RE 5%, Wt 24g (Fig. 66)
- Context 3830                      SF672                      Burnt stone mound  
A samian basesherd, eroded, excoriated on one side, probably though not certainly SG, AD 70-110. Wt 8g
- Context 3831                      SF674                      Fill of 3842, SW end of ditch of Roundhouse D  
Two completely excoriated samian bodysherds, probably burnt SG ware, AD 70-110. Wt 4g
- Context 3928                      SF690                      Fill of shallow gully 3929, related Roundhouse D  
a) Two BB1 jar rim fragments with wavy line burnished decoration, 2<sup>nd</sup> century. Wt 3g  
b) A BB1 jar rim fragment with a beaded rim and wavy burnished line beneath, 2<sup>nd</sup> century. D. ? cms, RE >2%, Wt 2g  
c) A BB1 jar rimsherd, probably 2<sup>nd</sup> century. D. 15cms, RE 5%, Wt 2g
- Context 3991                      SF719                      Fill of gully 3992, running NW from Roundhouse D  
Three joining oxidised sherds from a flagon rim, probably 1st-early 2<sup>nd</sup> century, Fab O03. D. 6cms, RE 20%, Wt 9g
- Context 3991                      SF717                      Fill of gully 3992, running NW from Roundhouse D  
Three sherds from a samian footring base. Central Gaulish dish form 31. An Antonine product, quite probably after c A D 150, but the piece is badly abraded and precise dating is difficult. Any signs of wear in use therefore cannot be discerned on the footring. Wt 25g, B.D. 10cms, BE 20% (Fig. 66)
- Context 9012                      SF692                      Upper fill of trackway 9083

A Raetian type mortarium rimsherd with red slip on the rim, probably Antonine, probably from Wilderspool. D. c26cms, RE 6%, Wt 37g (Fig. 66)

Context 9161                      SF734                      Fill of gully 9162, SW of Roundhouse H  
A very eroded excoriated samian chip, lacking surfaces, but taken to be SG rather than CG ware, cAD 70-110. Wt >1g

Context 9164                      SF735                      Occupation layer in interior Roundhouse H  
An eroded and excoriated samian bodysherd, burnt as the fragments of the slip are black, presumably CG, AD 120-200. Wt >1g

Context 9164                      SF736                      Occupation layer in interior Roundhouse H  
A BB1 simple rimmed dish rim fragment, exterior decorated with intersecting arcs, 3rd-4th century. D. ? cms, RE >1%, Wt 8g

Context 9164                      SF740                      Occupation layer in interior Roundhouse H  
An eroded and largely excoriated samian bodysherd, exterior burnt, slip is black. Presumed to be SG rather than CG but not certainly so, AD 70-110. Wt 3g

Context 9164                      SF741                      Occupation layer in interior Roundhouse H  
A BB1 eroded bodysherd and a BB1 simple rimmed dish rim, perhaps 3rd-4th century. D. ?cms, RE 3%, Wt 10g

Context 9164                      SF745                      Occupation layer in interior Roundhouse H  
A BB1 simple rimmed dish rim, perhaps 3rd-4th century. D. ? cms, RE 3%, Wt 7g (Fig. 66)

Context 9164                      SF746                      Occupation layer in interior Roundhouse H  
A very eroded, excoriated samian bodysherd, lacking all surfaces, CG, AD 120-200 Wt >1g

Context 9182                      SF748                      Fill of 9163, inner drain of Roundhouse H  
A BB1 dish base sherd, interior burnished, exterior base decorated with a continuous loop burnished line, wall decorated with pointed arcs or arcs, perhaps mid-late 2nd century. D. 21cms, BE 8%, Wt 10g

#### ***Trench 4***

Context 4058                      SF492                      Stony hollow  
An eroded samian bodysherd, lacking most surfaces, probably CG rather than EG, cAD 120-200. Wt 2g

#### **Discussion**

##### ***Chronology***

In terms of the date distribution of material from the site the peak would appear to be in the Flavian-Trajanic period, however the BB1 would appear to extend throughout the 2nd century and into the earlier 3rd century at least. The mortaria include a reeded Mancetter hammerhead mortarium that must date to after at least the second decade of the third century. There is no positive evidence of occupation beyond this, although a number of BB1 dishes could be of later date, but the assemblage is small, even for this type of site, and absence of evidence is not evidence of absence.

##### ***Roundhouse A***

This contains a fragment of Les Martres samian dated AD 100-125 and several pieces of BB1 including a simple rimmed dish rim from the inner gully (3267 and 3231). The latter is a common 3<sup>rd</sup>-4<sup>th</sup> century form but does occur occasionally in the Hadrianic-Antonine period.

The outer ring ditch (context 3271) produced two sets of BB1 bodysherds from different vessels of Hadrianic-mid Antonine date and an East Gaulish sherd, perhaps from Rheinzabern, dated AD 160-180/200.

Overall material from this roundhouse dates from cAD 100 to the late 2<sup>nd</sup> century, with possibly 3<sup>rd</sup> century material also included, but the minimal date range might be AD 100-200.

##### ***Evaluation trench near roundhouse A***

The curvilinear gully (3177), possibly a roundhouse ring ditch contains a South Gaulish samian sherd, Dr 18 or 18R dated AD 70-110.

#### *Enclosure ditch to roundhouses C, D, and H*

This contained three sherds of oxidised ware and a Central Gaulish samian ware sherd dated AD 120-200 from 3711.

#### *Roundhouse C*

Roundhouse C only produces a single sherd, a South Gaulish samian dish bodysherd from 3693 a pit in the centre of the house, dated AD 70-110. Given the quantity of pottery from the other roundhouses it is tempting to suggest that the absence of BB1 is significant here. Were that to be the case then use of this hut might have ceased by early in the 2<sup>nd</sup> century AD

#### *Roundhouse D*

This produced two South Gaulish samian bodysherds dated AD 70-110 from its ring-ditch 3831. There were also fragments from three BB1 jar rims of Hadrianic-Antonine date from associated gully 3928. Gully 3991 also produced a later 1<sup>st</sup>-early 2<sup>nd</sup> century flagon rim and a sherd of Central Gaulish samian ware dated AD 150-200. There was also an Antonine Raetian type mortarium rim from 9012, stones north-east of the roundhouse.

All this material fits within the date bracket AD 70-200.

#### *Roundhouse H*

This had associated with it a South Gaulish samian sherd dated AD 70-110 from 9161, a gully to the south-west. A Central Gaulish samian sherd dated AD 120-200, A BB1 simple rimmed dish with intersecting arc decoration of late 2<sup>nd</sup> to 4<sup>th</sup> century date, a South Gaulish samian bodysherd dated AD 70-110, two BB1 simple rimmed dish rims likely to be of 3<sup>rd</sup>-4<sup>th</sup> century date although they could be earlier, and a further Central Gaulish samian bodysherd dated AD 120-200 all from context 9164. There was also a BB1 dish base of mid-later 2<sup>nd</sup> date.

The material from roundhouse H certainly covers the date bracket AD70-200, but the three BB1 dishes are unlikely to all be of 2<sup>nd</sup> century date and its occupation as measured by pottery deposition would seem to extend into the 3<sup>rd</sup> century AD.

#### ***Fabric Supply***

It is of note, that as on other rural sites in the region, the pottery from Parc Bryn Cegin is almost entirely composed of Romanised material. Nearly all of the pottery seems to have come to the site via the Romanised distribution system, unlike the situation in north-western England (Dore 1983), and the sources of supply are similar to those at Segontium.

Amphora is present, slightly surprisingly, at 1.6% by count and 34.1% by weight. Amphorae are only present on four of the seven North Welsh rural sites in Table IV.1, and levels here are relatively high, but in a very small assemblage. Table IV.1 shows the fabric proportions (excluding mortaria) from rural sites and Segontium (after Casey et al 1993, Tables 16.1 and 17.2). As might be expected the only fabric represented is the commonest national type, Dressel 20 oil amphorae.

It is not clear that the presence of these fabrics implies the presence of their former contents at the sites, rather than simply a trade in empty containers.

The principal fabric in the assemblage is BB1 at 42.6% by count and 43.1% by weight (excluding amphorae which otherwise distort all the other fabric figures). The figures at first sight seem high, but actually comparison with Table IV.1 shows that these are very low figures for a North Welsh rural site, most other sites having this as the vast majority of the assemblage. Typical figures are the 76% from Bush Farm, 93% from Graeanog (Evans 1998), 86% from Melin y Plas and 64% from Bryn Eryr. Sites with comparable levels of BB1 are the apparently high-status site of Cefn Cwmwd with 45% by count and 36% from the small assemblage from Cefn Du, where the nature of the assemblage is enigmatic, although there are high-status aspects to it.

Nene Valley and other colour-coated wares are absent, as they are from lower status sites in Table IV.1.

Mortaria are represented by two sherds (1.6% by count) one is from a Mancetter-Hartshill vessel and the other is a Raetian type rimsherd, probably of Wilderspool origin and Antonine.

These two vessels represent the commonest source, Mancetter, and the second commonest source, Wilderspool, for mortaria from north Welsh rural sites (Evans forthcoming a, Anglesey).

Oxidised wares form a major part of the assemblage at Parc Bryn Cegin, at 36.5% by count. The majority of material in this class would appear to be of Flavian-Trajanic type, although some later pieces in Severn Valley ware, or a fabric of related tradition, also appear on some north Welsh rural sites, as for example the 3rd-4th century constricted-necked jar with bifid rim from Cefn Cwmwd (Evans forthcoming a, Fig 21.1, No 8).

Comparison with other North Welsh sites (Table IV.1) shows how unusual the Parc Bryn Cegin assemblage is in its level of oxidised wares. Most sites, if oxidised wares are present at all, have less than 10%, with the highest level being 14% from Cefn Cwmwd. These, and the dating of the samian ware from this site, imply relatively quite major coarse pottery use on Parc Bryn Cegin in the pre-Hadrianic period. This is most unusual, most sites showing scant evidence of pre-Hadrianic Roman pottery deposition and particularly scant evidence of pre-Hadrianic coarse pottery use.

Reduced wares are generally uncommon on north Welsh rural sites. There is only a single sherd at Parc Bryn Cegin amounting to 0.8% of the assemblage. This is fairly typical with only Bryn Eryr, of the rural sites in Table IV.1, having more than 2% of greywares. At Bryn Eryr the only reduced ware form was again of 2nd century date, as at Cefn Cwmwd, and corresponding to the peak of reduced wares at Segontium (Webster 1993, Table 17.3). Once again the level of greywares at Parc Bryn Cegin demonstrates how the pottery assemblages on the rural sites are a highly selected assemblage from what was available on the local markets, with nearly 18% of the Segontium assemblage being greywares, and similar levels coming from other forts. The lack of greywares from most rural sites probably suggests a general lack of interest in jars (or other forms) with fabrics not well adapted to cooking on an open fire or in the ashes, except on those sites with assemblages associated with higher status assemblages.

Table IV.1 Major fabric classes at North Welsh rural sites (by % count, Segontium by min vessels)

Fabric Class	Graeanog	Bush Farm	Melin Y Plas	Bryn Eryr	Cefn Cwmwd	Cefn Du	Segontium	Parc Bryn Cegin
Dressel 20 amphora	0	0	0	0.2	0	9	2.9	1.6
Other amphora	0	0.2	0	0	0	0	1.3	0
BB1	92.5	76.6	96	63.0	45.4	36	20.2	42.6
Shell-tempered	0	0	0	0	0	0	5.8	0
E Yks calcite grit	0	0	0	0	0	0	0.8	0
Nene Valley	0	0	0	2.8	0.5	0	3.0	0
Rhenish	0	3.6	0	0	0	0	0.2	0
Oxidised	5.2	6.9	0	7.6	14.6	9	18.4	36.5
White-slip flagon	0	1.2	0	0	1.0	9	Not determinable	0
Reduced	0	1.1	0	11.0	0.5	23	17.8	0.8
SG samian	0.9	0	0	4.3	1.0	0	13.1	5.4
MdV samian	0	0	0	0	0.5	0	0.5	0.8
CG samian	0.3	2.7	1	7.1	18.6	5	5.0	8.5
EG samian	0	0	0	0	1.6	0	0.5	0.8

Samian ware levels on the rural sites are generally very low, except at Bryn Eryr and Cefn Cwmwd (see Samian below), and nearly always have a Central Gaulish peak, despite the considerable amounts of samian reaching Segontium in the Flavian-Trajanic period.

Parc Bryn Cegin is the only rural site with a strong South Gaulish samian representation.

## Samian

### Summary

M Ward

The eighteen sherds represented a maximum of 14 vessels, of which approximately 39% was South Gaulish and 50% Central Gaulish ware with a further 6% from Les Martres and 6% from East Gaul. There was only one probable rimsherd (0.12 EVES). By weight the proportion of wares was 61% SG to 39% CG, the average sherd weight being only 3g. All the fragments were in very poor condition, most having suffered considerable erosion/decomposition as well as general abrasion in the soil; few sherds retained surfaces. Consequently only one vessel was firmly identifiable by form or fabric, an Antonine Central Gaulish Dr 31 bowl, otherwise none of the other vessels was precisely datable within the Flavian-Trajanic and Hadrianic-Antonine periods; one (dish) was probably Flavian; one Trajanic product of Les

Martres-de-Veyre was suspected; one (cup) may have been an Antonine product of Lezoux. Only three vessels were recognisable forms (one cup, one bowl and one dish). One indeterminate form, most likely a Central Gaulish product had seen cleat-type repair work, probably using lead.

### Further comments

Jerry Evans

Most of the samian ware comes from stratified deposits, and very little of it can be identified to form. The only identified forms are a South Gaulish Dr18/18R, a Central Gaulish Dr33, and a Central Gaulish Dr 31.

Table IV.2: The Chronology of the Samian from Parc Bryn Cegin (by number of vessels represented)

Period	Vessels Represented by sherds from Unstratified deposits	Vessels Represented by sherds from Stratified deposits
Flavian		1
Flavian-Trajanic		5
Trajanic - early Hadrianic		1
Hadrianic		
Hadrianic - Antonine	1	4
Early - mid Antonine		
Antonine		2
Antonine - mid Third Century		
Mid - late Antonine		
<b>Totals</b>	<b>1</b>	<b>13</b>

Table IV.2 shows the date distribution of the Parc Bryn Cegin samian, it is most unusual in that nearly half of it is pre-Hadrianic. Other north Welsh rural sites produce some South Gaulish samian, but nearly all of them are dominated by Central Gaulish material. The only exceptions are the multi-period enclosure site of Castell Bryn-Gwyn on Anglesey which has produced sherds from three samian vessels, all Flavian and South Gaulish, with the Drag. 33 cup and platter form 15/17 represented (Wainwright 1962, 48) and perhaps Graeanog (Evans 1998) where, in a very small samian assemblage, there is marginally more South Gaulish material.

Cefn Cwmwd produced two South Gaulish samian vessels of first century AD date; 25 sherds of Flavian South Gaulish ware were also forthcoming from the Bryn Eryr farmstead (Longley et al. 1998); later first century samian also comes from Graeanog, Caernarfonshire (Evans 1998), Cefn Graeanog II, also Caernarfonshire (Going and Marsh 1998), and Dinorben, Denbighshire (Simpson 1964, 198; Boon and Savory 1971, 60).

Thus it is clear that these rural sites started to access Roman pottery supplies from shortly after the conquest, although they all seem to have been aceramic up until that point. However, initial access was often largely centred on samian ware, with relatively small quantities of pre-Hadrianic coarse pottery being used on these sites. Table IV.3 gives approximate proportions of samian ware and coarse pottery of pre-Hadrianic date from those sites with South Gaulish samian ware for which full catalogues are available.

Table IV.3 approximate quantities of samian ware and coarse pottery of pre-Hadrianic date from north Welsh rural sites

Site	SGS No	SGS %	Pre-Hadrianic coarse pot (max)	% pre-Hadrianic coarse pot
Cefn Cwmwd	2	6%	31	94%
Graeanog	3	15%	17	85%
Bryn Eryr	25	19%	107	81%
Parc Bryn Cegin	7	13%	46	87%

As can be seen samian ware is strongly represented on three of the four sites, the odd one out being Cefn Cwmwd where samian is strongly represented in the Hadrianic-Antonine period, as at Bryn Eryr. These levels of samian ware can be compared with the average (by weight) of 9.9% for samian amongst pottery



assemblages from Roman military sites in Britain, 8.2% in the case of major civilian sites, and 1.9% and 1.4% amongst assemblages from small towns/roadside settlements, and rural sites respectively (Willis 1999). There is little doubt that even at Cefn Cwmwd samian ware is disproportionately represented compared to the national pattern. Willis (forthcoming) has discussed this in the Cefn Cwmwd report. He argues that there is “a clear trend of selective acquisition of samian vessels amongst many indigenous communities, (or a selective trading of these wares to such communities). Hence pottery assemblages from rural sites of the mid and late first century AD often show an initially strong incidence of samian wares (e.g. Millett 1980), with a disproportionately high level of decorated vessels, predominantly bowls, being present (Willis 1997). This trend, whilst not universal, follows a wave pattern through Britain, as regions were incorporated into the Empire: samian is in the vanguard of Roman material appearing on indigenous sites, where it would have appeared novel. Further, it seems that sites of higher status, or distinctive identity, display the pattern to a greater extent, and the phenomenon is most apparent at sites in those regions lacking a deep pre-existing habit of ceramic use, and discard on site (cf. above). It would seem that there was a fashion for samian amongst local populations as a means of status or cultural display.

By the early second century AD this selective acquisition is typically no longer apparent, as pottery consumption at rural sites become much more focused upon functional vessels rather than those, such as samian, used in communal situations for display. Typically, therefore the proportions of samian are more modest and there is relatively less decorated ware.

Willis is certainly right about the early use of samian ware in North Wales as Table IV.3 shows, but it is less certain that high levels of decorated ware are part of this phenomenon. Where they do occur they tend to be on sites which display high status aspects in the 2<sup>nd</sup> century also, as, for example, Bryn Eryr.

Wider use of Roman pottery only takes place from the Hadrianic period onwards with the arrival of BB1 in the area. It is very clear from the differences between rural assemblages and that from the fort at Segontium that BB1 was differentially acquired on the rural sites. It is equally clear from the sooting patterns on vessels from these sites that BB1 was being used chiefly for cooking, and it would appear that most pottery use on the rural sites is because new cooking equipment became available to them which they found very useful. At some sites such as Bryn Eryr and Cefn Cwmwd samian ware is common in the second century and a very high proportion of it is decorated ware. This is fairly certainly being used for status display

Samian ware amounts to 15.5% of the entire pottery assemblage by count and 14.6% by weight (excluding amphorae) at Parc Bryn Cegin. This is a very high level, but no decorated ware has been identified from the site. This is also unusual.

Table IV.3 shows two other rural sites with high samian levels, Bryn Eryr and Cefn Cwmwd, but both of these had also very high levels of decorated ware. These latter two assemblages have both been interpreted as being of 'high status' in a region which did not have a strong tradition of ceramic use and consumption in the pre-Roman Iron Age and Roman periods and this seems borne out by other evidence from Cefn Cwmwd.

This makes the interpretation of the high samian ware level at Parc Bryn Cegin rather more problematic.

The average samian sherd weight at Parc Bryn Cegin is 3.6g, that from Cefn Cwmwd is 6.2g, and that at Bryn Eryr is similarly low (Longley et al. 1998, Table 1). Average sherd weights for samian in the order of 10 to 15.5 grams would appear to be normal for standard site deposits (cf. Fitts et al. 1999; Willis 2005). Thus the samian from Parc Bryn Cegin follows the typical North Welsh pattern, both for samian and coarse pottery, which is quite different from the national pattern. Willis (forthcoming) in discussing the Cefn Cwmwd assemblage notes that “It is of note that the samian assemblages from Melsonby and the Stanwick complex (North Yorkshire) have equally low average weights” (of 4.9g and 5.6g; data: Fitts et al. 1999). Haselgrove has posited (pers. comm.) that pieces of this fine ware were perhaps deliberately broken at Stanwick and Melsonby prior to their deposition, a practice which also seems likely in the case of the samian from Traprain Law. Alternatively, attrition via trampling, re-working and weathering may be significant in the case of Cefn Cwmwd, as well as Bryn Eryr. Whatever the explanation in the case of Cefn Cwmwd, a large proportion of these pieces from this site, as recovered, had reached their optimum point of breakage.

Table IV.4 Fabric proportions at Parc Bryn Cegin

Fabric	% Nosh	% Wt	% Wt	% MV	% RE	% BE	x sherd wt
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			excluding amphora				
A01	1.6	34.1	-	0	0	0	117
B01	42.6	28.4	43.1	66.7	43.7	71.6	
M01	0.8	3.5	5.3	6.7	5.7	0	24
M02	0.8	5.4	8.2	6.7	6.9	0	37
O01	11.6	5.1	7.7	6.7	6.9	8.8	2.3
O02	13.2	4.8	7.3	0	0	0	1.9
O03	7.0	2.8	4.2	6.7	22.9	0	2.1
O04	2.3	2.8	4.2	0	0	0	6.3
O05	0.8	0.1	0.2	0	0	0	1
O06	1.6	3.1	4.6	0	0	0	10.5
P00	1.6	0.1	0.2	0	0	0	0.5
R01	0.8	0.1	0.2	0	0	0	1
SGS	5.4	3.9	6.0	0	0	0	3.9
MDV	0.8	0.1	0.2	0	0	0	1
CGS	8.5	5.4	8.2	6.7	13.8	19.6	3.4
EGS	0.8	0.1	0.2	0	0	0	1
N	129	686g	452g	15 rims	87%	102%	5.3g

### ***Finewares***

Finewares levels at Parc Bryn Cegin are high at 15.5% by count and 14.6% by weight (excluding amphorae), they comprise entirely samian ware.

Rural sites in the lowland zone (Evans 1993; Longley *et al* 1998) generally exhibit fineware levels of around 2-3% and rarely exceed 5%. Most of these North Welsh sites fall within this range (Table IV.1), but two stand out, Bryn Eryr and Cefn Cwmwd with fineware levels more appropriate for urban or military sites (Evans 1993). Both sites assemblages on this indicator seem to indicate strongly high-status pottery use. Parc Bryn Cegin undoubtedly groups with these sites on this measure, although, as noted above, it differs from both these sites markedly in not having a large proportion of decorated samian ware.

### ***Function***

Table IV.5 shows the functional analysis of the Parc Bryn Cegin assemblage by minimum numbers of rims in comparison with data from other north Welsh rural sites.

Table IV.5 North Welsh sites functional analysis (by minimum numbers of rims)

Site	Jars	Dishes	Bowls	Mortaria	Beakers	Constricted necked jars & flagons	Min no of vessels
Bush Farm	44%	27%	18%	6%	6%	0	n=55
Graeanog	56%	28%	4%	8%	4%	0	n=25 rims
Cefn Graeanog (Going and Marsh forthcoming)	64%	23%	11%	0%	3%	0	n=66
Bryn Eryr	33%	24%	31%	2%	7%	2%	n=45 rims
Cefn Cwmwd	23%	31%	12%	29%	2%	2%	n=42 rims
Parc Bryn Cegin	33%	25%	13%	13%	6%	6%	n=15 rims

The data from Graeanog, Cefn Graeanog and Bush Farm have high jar levels, which fall within a range typical of rural sites, although the Bush Farm data are at the lower end of the range. In contrast Bryn Eryr and Cefn Cwmwd have low jar levels, which can be compared with urban and military sites (cf. Webster 1993, table 17.4) and high tableware levels (i.e. dishes and bowls). Tableware levels are high at Cefn Cwmwd, Bryn Eryr and also at Bush Farm, are often higher than at military and urban sites (cf. Webster 1993, table 17.4) because the functional diversity of these rural sites is lower and drinking vessels are rare upon them.

It is clear from these data that Bryn Eryr and Cefn Cwmwd would seem to have high-status assemblages, both in terms of their functional composition, and also their levels of finewares and in the composition (and quantity) of their samian assemblages.

The Parc Bryn Cegin data group with Cefn Cwmwd and Bryn Eryr in terms of low jar levels, although tableware levels at 38% are not quite as high as on those sites. Mortaria are quite strongly represented at 13%, this could be a result of the small assemblage size, but it could relate to the Cefn Cwmwd pattern.

At Cefn Cwmwd there were a very high proportion of mortaria (29% by count and 33% by weight). This is so far a unique pattern for North Wales, although it is known on other highland zone rural sites in Cumbria (Evans forthcoming b, Table 1) where 27% of a composite assemblage from several rural sites consists of mortaria. Around a third of these mortaria fragments are quite heavily burnt, although this may relate to their disposal rather than use. In the Cumbrian case this author (forthcoming b), following Reece (1988), has suggested that these mortaria may have been used for activities associated with dairying.

### ***Sherd size***

The average sherd size at Parc Bryn Cegin is 5.3 g. This is comparable with the 7.0g at Bush Farm Port Dinorwic, 7.0g at Bryn Eryr, 5.1g at Melin Y Plas and 4.3g at Graeanog. These latter figures being far lower than for 25 groups from northern military, urban and villa sites (Evans 1985, Table 1.3), which ranged between 10g and 30g. The only clear exception amongst the rural sites to this pattern of low average sherd weight is at Cefn Cwmwd, which had an average sherd weight of 12.8g. The Cefn Cwmwd figures would seem to suggest that pottery was being used, or rather disposed of, in a rather different manner here to that on the other North Welsh sites.

### ***Rivets***

At Parc Bryn Cegin a single sherd has evidence of riveting, SF650, a Central Gaulish samian sherd of unidentifiable form which had evidence of a cleat X type riveting hole which would have contained a lead rivet. This gives a riveting rate for the assemblage of 0.9%, although on a small group.

The concentration of rivets on samian is the usual pattern on lowland zone sites (Evans and Rátkai forthcoming a; Wilson 2002), with occasional riveting of amphorae and mortaria, and more rarely other vessel types. The rate of riveting on lowland zone sites is generally low, around 0.1% or less of all sherds. (0.16 per cent at the urban northern site of Baines Farm, Catterick, 0.19% at the Warwickshire small town of Alcester, 0.08% at the rural site of Thornwell Farm, Chepstow, 0.0008% on a series of rural sites in West Yorkshire, and 0.1 per cent at the rural site of Worberrry Gate, Somerset.)

In North Wales riveting is usually at a rather higher level, 2.5% at Bryn Eryr, 0.6% at Graeanog and 0.24% at Bush Farm, Port Dinorwic. Further most of this riveting was on BB1, with 15 rivet holes from these three sites, compared to two on samian. Also at all the other North Welsh sites where there is evidence the riveting it is with circular-sectioned iron staples, even on the samian, rather than the more usual, but weaker, lead, and the rivets on the samian ware are also of this type, whereas on lowland zone sites they are almost invariably of the 'cleat' X-cut type. It might be worth noting that modern repairs with iron staples can result in a serviceable vessel.

At Cefn Cwmwd there is a riveting rate (no of rivet holes/(total sherd no/100)) of a massive 6.7%. It would seem to be of note that the highest riveting rates amongst these sites come from Bryn Eryr, Cefn Cwmwd and Melin y Plas, all on Anglesey and arguably with more difficult contacts with Segontium, which would appear to be the obvious local market centre for BB1. The particularly high rate at Cefn Cwmwd might suggest that there was a clear demand here for much greater pottery supplies than were available.

Thus the Parc Bryn Cegin riveting rate would seem to be fairly typical for a North Welsh rural site.

### ***Conclusions***

Material from the site the peaks in the Flavian-Trajanic period, but extends throughout the 2nd century and into the earlier 3rd century at least. There is no positive evidence of occupation beyond this, although a number of BB1 dishes could be of later date, but the assemblage is small, even for this type of site, and absence of evidence is not evidence of absence.

The assemblage appears unusual for a North Welsh 'native' site. Most such sites have assemblages dominated by BB1, and although some South Gaulish samian ware may occur most of the other pottery is of Hadrianic or later date.

In contrast here, as the samian identifications confirm, nearly half of the samian is pre-Hadrianic and 41% of the coarsewares could be, their being oxidised wares. Samian comprises around 15% of the assemblage by count, a very high level, but there is no evidence that any of it was decorated.

The functional composition of the assemblage is also unusual, only five jar rims are present amongst the fifteen rimsherds (33%) a low level for such a site, and below the general range for rural sites, whilst table wares (dishes and bowls) also comprise 38% of the assemblage, a fairly high level.

The site would seem to have unusually strong early (Flavian-Trajanic) pottery use, which might suggest stronger than average contacts with the military or a military vicus.

It would seem to be of higher status than some rural sites, but the lack of any evidence of decorated samian ware is disconcerting given that large quantities of this have proved to be a good indicator of high-status sites in the region previously. The presence of a seal box on the site would also, perhaps, suggest closer than usual connections with the military.

Overall the site would seem to be of fairly high status in the early Roman period and to perhaps, have reasonably close military contacts.

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### Catalogue of undiagnostic sherds

Cut number	Fill/layer number	Find number	Context	Pottery description
<b>Trench 2</b>				
	2002	SF688	Ploughsoil	A tile fragment, probably post-Roman. Wt 48g
2104	2098	SF256	Fill of small hole with beads	A fragment of oxidised fired clay, 'clean'. Wt 3g
2104	2098	SF309	Fill of small hole with beads	Nineteen fragments of oxidised fired clay. Wt 17g
<b>Trench 3</b>				
	3000	SF711	Unstratified	An oxidised bodysherd, Fab O06. Wt 6g
	3000	SF732	Unstratified	An oxidised bodysherd, Fab O01. Wt >1g
	3000	SF733	Unstratified	An eroded oxidised bodysherd, Fab O01? Wt >1g
	3002	SF649	Ploughsoil	An oxidised bodysherd, very eroded, Fab O02. Wt 5g
	3002	SF714	Ploughsoil	A small Dressel 20 amphora chip, 1st-3rd century. Wt 6g
	3002	SF731	Ploughsoil	An oxidised bodysherd, Fab O01? Wt 3g
	3018	SF467	Ploughsoil above roundhouse A	A BB1 jar base bodysherd. AD 120+ Wt 6g
3204	3205	SF704	Fill of gully in evaluation trench to W of Roundhouse A	A small oxidised bodysherd, fabric O05. Wt >1g
	3209	SF485	Ploughsoil above roundhouse A	A BB1 jar shoulder sherd bodysherd, exterior sooted. AD 120+ Wt 8g
3217	3218	SF629	Colluvium filling top of S enclosure ditch	Five oxidised, 'clean', fired clay fragments. Wt >1g
3230	3231	SF 493	Fill, inner drain, Roundhouse A	a) A BB1 (?jar base) bodysherd. AD120+ Wt >1g b) A greyware bodysherd, Fab R01. Wt >1g
3230	3231	SF496	Fill, inner drain, Roundhouse A	Three BB1 jar base sherds, could be from one vessel but not necessarily, and 11 BB1 jar bodysherds. AD120+ D. 11cms, BE 26%, Wt 34g
3175	3259	SF584	Primary fill of S enclosure ditch	Three joining oxidised jar bodysherds, Fab O02? Wt 3g
3275	3322	SF573	Primary fill, inner drain, Roundhouse A	A tile fragment, presumably tegula. Roman Wt 109g
3339	3338	SF702	Upper fill of post-mediaeval ditch	An eroded oxidised fragment, perhaps Fab O01 if Roman, probably post-mediaeval. Wt 5g
3496	3366	SF583	Fill of inner drain, Roundhouse A	An oxidised bodysherd from a large closed vessel, Fab O02? Wt 11g
3496	3495	SF606	Fill of inner drain, Roundhouse A	An oxidised bodysherd and four chips, Fab O03. Wt 2g
3549	3548	SF611	Fill of inner drain Roundhouse A	A BB1 fragment. AD 120+ Wt >1g
3566	3565	SF614	Fill of gully inside Roundhouse A	A BB1 jar base bodysherd. AD 120+ D. 7cms, BE 12%, Wt 8g
3700	3699	SF645	Lower fill C19th boundary ditch near Roundhouse H	An oxidised bowl with a footring base. Fab O01. D. 9cms, BE 9%, Wt 6g
3712	3711	SF666	Upper fill of enclosure ditch around Roundhouses C, D, and H	An oxidised bodysherd, Fabric O01. Wt 10g
3712	3711	SF658	Upper fill of enclosure ditch around Roundhouses C, D, and H	Two joining oxidised flakes, Fab O01. Wt >1g
3726	3725	SF668	Fill of storm drain, Roundhouse C	An oxidised flagon handle with three cordons, Fab O03?. Wt 8g
3992	3991	SF717	Fill of gully running NW from Roundhouse D	Two oxidised bodysherds, Fab O01. Wt 9g
3350	3999	SF716	Primary fill of enclosure ditch of Roundhouses C, D and H	Two oxidised joining everted jar rim fragments, Fab O01. D. 14? Cms, RE 6%, Wt >1g
	9168	SF739	Land-drain cutting Roundhouse H	An eroded oxidised bodysherd, Fab O02. Wt 5g
	9168	SF763	Land-drain cutting Roundhouse H	Five oxidised bodysherds, Fab O02. Wt 4g
	9176	SF742	Stone deposit west of Roundhouse D	A Dressel 20 amphora bodysherd, 1st-3rd century. Wt 228g
9184	9183	SF876	Upper fill pit in Roundhouse H	Two eroded oxidised bodysherds, Fab O02. Wt >1g

9186	9185	SF887	Fill of gully within Roundhouse H	Four BB1 jar bodysherds, AD 120+. Wt 2g
	9187	SF750	Occupation layer Roundhouse H	A BB1 dish/bowl base sherd, AD120+. D. c20cms, BE >6%, Wt 27g
9191	9189	SF737	Fill of posthole, Roundhouse H	A BB1 bodysherd, perhaps from a dish or bowl, AD120+. Wt 3g
9285	9267	SF759	Stone layer of trackway SE of Roundhouse H	Three joining eroded oxidised bodysherds, Fab O02. Wt 3g
	9303	SF928	Ploughsoil patch near structure F	Two oxidised eroded bodysherds, Fab O01. Wt 2g
	9303	SF929	Ploughsoil patch near structure F	Three oxidised bodysherds from the same vessel, Fab O07. (Roman) or post-mediaeval. Wt 4g
<b>Trench 4</b>				
	4002	SF654	Ploughsoil	Three oxidised sherds from the flange rim of a thick-walled bowl or mortarium. Fab O04. Wt 19g
4271	4270	SF616	Posthole fill adjacent building next to Roundhouse E	Two joining oxidised fragments, Fab O01? Wt >1g



## APPENDIX V: POST MEDIEVAL POTTERY

Jonathan Goodwin

### Non-technical summary

Stoke-on-Trent Archaeology undertook, on behalf of Gwynedd Archaeological Trust, an assessment of potential for further analysis on a small assemblage of ceramic material excavated from Parc Bryn Cegin, Llandygai, Gwynedd. The material was divided into fabric/ware types and vessel forms and was quantified by means of sherd count. The bulk of the material was post-medieval in date (mainly late 17<sup>th</sup>-late 18<sup>th</sup> century) with one medieval sherd. The post-medieval coarsewares were found to have affinities with material produced at the Buckley and Prescot potteries and may well represent the distribution of wares from these potting centres to North Wales.

Nonetheless, the Parc Bryn Cegin material has limited potential for further analysis as the post-medieval features from which the material derived are peripheral to the substantial evidence for earlier, prehistoric activity which survives on site. Further examination of the material from the post-medieval ditches and field drains would do little to facilitate a greater understanding of these features and the site in general. The only potential area for further research is in comparing the possible Buckley/ Prescot material with known wares from these production centres. This may aid a better appreciation of the identification and distribution of Buckley and Prescot wares in North Wales.

### Introduction

Gwynedd Archaeological Trust carried out a programme of archaeological work (including strip, map and record and trial excavation) at Parc Bryn Cegin, Llandygai, Gwynedd, North Wales. The project revealed evidence of early and late Neolithic, Bronze Age, Iron Age/Romano-British and post-medieval activity on site. Post-medieval features comprised a series of field boundary ditches and drains from which a small assemblage of pottery was recovered. Stoke-on-Trent Archaeology was commissioned by Gwynedd Archaeological Trust to undertake an assessment of potential (in accordance with section 6 of English Heritage's *Management of Archaeological Projects*, 1991) on this material.

A total of 82 ceramic vessel sherds and two clay pipe bowl fragments were recovered from 29 contexts during excavations at Parc Bryn Cegin. The material was divided into fabric/ware types and vessel forms and was quantified by means of sherd count. Only one sherd, that from [3686], was examined under a x20 microscope. A full list of the material from the site is provided in appendix V.1: table V.1 shows fabric and ware type; table V.2 provides a list of vessel forms by ware type; table V.3 a list of spot dates for contexts, and table V.4 provides a full catalogue of post medieval ceramic finds.

### Ceramic vessel sherds

Coarsewares dominate this group, principally in the form of undecorated coarse earthenwares, which constitute 51.3% of the total assemblage. Small numbers of slipwares (9.8%), blackwares (3.7%) and mottled wares (2.4%) also occur, along with single examples of iron-poor ware, Cistercian ware and a Midlands purple ware (each representing 1.2% of the total). A handful of refined wares, such as creamware, both decorated and undecorated white earthenware and bone china also feature, comprising just 26.8% of the complete assemblage.

The material spans a maximum period of some 600 years, from the 13<sup>th</sup>/14<sup>th</sup> to the 20<sup>th</sup> century, with a concentration of wares datable to the late 17<sup>th</sup> to early 18<sup>th</sup> centuries. The earliest sherd is the buff, green-glazed ware SF644 from [3686], which has distinct similarities to mid to late medieval (13<sup>th</sup> to 15<sup>th</sup> century) iron-poor wares found in Staffordshire and surrounding counties. The late 15<sup>th</sup> to early 17<sup>th</sup> centuries are represented by single examples of Midlands purple ware and Cistercian ware SF718 [3000] and SF56 [1154] respectively. The underside of the Midlands purple ware jar or cistern has a firing scar and glaze splashes, indicating its use as a saggar in the firing of Cistercian wares.

The late 17<sup>th</sup> and 18<sup>th</sup> centuries are well represented by coarse earthenwares in a limited range of forms, chiefly storage jars, some with heavy rims, and pans with sloping sides. Fabrics range from orange to purple in colour and are, in the main, laminated with white clay. This lamination is more obvious in the earlier examples, dating from around the late 17<sup>th</sup> to early 18<sup>th</sup> century (such as SF55, from [1113]), and may suggest a lesser level of clay preparation. Black or dark brown, iron-rich lead glazes feature on all but one example and are commonly applied to the interiors of pans and the interiors and exteriors of jars. The iron content of the glaze seems in some cases to derive from the clay body itself and in others from a slip coat applied to the body before glazing. It is also possible, in some cases, that iron (or other colouring agent) formed a component of the liquid lead glaze.

The slipwares also belong to this period and are present as thrown pans and dishes with everted rims, in the same basic fabric type as the coarse earthenwares. Decoration is simple, with trailed patterns in white

slip. Only one example, SF1076 from [4002], features a trailed design of more than one colour slip. A few, fragmentary examples of blackwares and mottled wares complete the coarsewares from this group.

The bulk of the refined wares date from the late 18<sup>th</sup> to the late 19<sup>th</sup> centuries. The group includes creamwares; white earthenwares, undecorated or with transfer-printed, painted or applied-slip designs; slip-decorated redware; and one example of bone china. The forms are mostly teawares (teapots, jugs, cups and saucers) or tablewares (plates only).

A single sherd of undecorated white earthenware, SF904 from [9304], and a buff kitchenware sherd, SF468 from [4047], look to date to the very end of the 19<sup>th</sup> century or 20<sup>th</sup> century.

A number of production sources can be suggested for the medieval and early post-medieval wares present within the assemblage.

The medieval sherd from [3686] has close parallels, in terms of fabric colour and inclusions to white and iron-poor wares found in Staffordshire and the Midlands as a whole (Ford 1995, 33-35; Ratkai 2004, 12; Goodwin 2005, 2-3). A single vessel in a hard grey-buff fabric with green glaze was recovered from excavations at Montgomery Castle (fabric B.7) and was thought to be a product of the Sneyd Green kilns, Stoke-on-Trent, or at least a related source (Knight 1990/91, 8). Other fine, green- to amber/yellow-glazed sandy whitewares from Montgomery (fabric B.9) were considered to derive from Shropshire (*ibid.*, 9). Comparable fabrics from Newton, Powys, have been attributed to the petrologically-identical clays of the Flintshire and Shropshire/Staffordshire coalfields (Jones 1988, 2; Courtney & Jones, 1988, 10). Alternatively, excavated sherds described as whitewares from Conwy Castle were ascribed to the Chester area (Butler & Evans 1977, 27), as were finds from Beaumaris Castle, thought to stem from a kiln site in Audlem (Dunning 1977, 8-9).

The distinctive orange and white laminated fabrics of the post-medieval coarsewares mark them as potential products of the Buckley potteries in Flintshire. Ceramic groups excavated from Pinfold Lane and Brookhill, Buckley (Davey 1987, 93-120; Amery & Davey 1979, 49-85), dating from the mid 17<sup>th</sup> to early 18<sup>th</sup> centuries, display similar fabric types and a range of thrown slipwares and lead-glazed coarse earthenwares. A comparison between the Parc Bryn Cegin material and Buckley sherds held in the Post-Medieval Reference Collection at The Potteries Museum & Art Gallery, Stoke-on-Trent, demonstrated clear similarities between the two groups. It is possible, however, that the wares may have been produced further afield at Prescott, on the South Lancashire coalfields. Coarsewares with black glazes and laminated, red and white fabrics comparable to Buckley products have been recovered from excavations in Prescott (McNeil, 1982/83, 59; Davey 1987, 98), examples of which feature in the Post Medieval Reference Collection. Both production centres had the means of distributing their wares to North-West Wales; by the 19<sup>th</sup> century, Buckley utilised established overland and coastal routes to supply a network of small local markets in North Wales, whereas Prescott was able to transport its goods through the port of Liverpool (Davey 1987, 98).

It is more difficult to indicate a point of origin for the wares of the 19<sup>th</sup> century, as this was a period of standardised, mass-production and global marketing. The potteries of north Staffordshire, Swansea, Liverpool and Bristol are all possible candidates.

### **The clay pipes**

Two clay pipe bowls, SF504 and SF594, were recovered from contexts [3000] and [3443] respectively. Both share the same spurred form, with leaf-moulding on the front and back seams. The example from [3000] is a slightly smaller size than the bowl from [3443] and shows signs of having been filed down around the bowl mouth, presumably to allow the pipe's continued use after a break in this area. This is a common, widely available form, with examples from Bristol dated to c.1825-1845 (Jackson, Beckey & Baker 1991, 124-5, no. 94), from Carmarthen dated to the 19<sup>th</sup> century (Brennan, Evans, James & Dale-Jones 1996, 73, fig. 22, no. 130) and from Nottingham dated to c.1850-60 (Hammond 1982 76, fig. 27, no. 182) and c.1870 (*ibid.* 46-7, fig. 12, no. 57).

### **Conclusions**

The Parc Bryn Cegin material has limited potential for further analysis. The post-medieval features from which the material derived, are peripheral to the more substantial archaeological evidence uncovered by the project, which focused on much earlier activity. Further examination of the material from the post-medieval ditches and field drains would do little to facilitate a greater understanding of these features and the site in general. As a body of ceramic material, the Parc Bryn Cegin assemblage is small and offers only a glimpse at the range of wares available to consumers in North Wales during the late 17<sup>th</sup> to late 19<sup>th</sup> centuries.

### Acknowledgements

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**Appendix V.1: Catalogue of ceramic material from Parc Bryn Cegin**

Table V.1: Fabric/ware types by context

Context	Fabric/Ware Type																
	IPW	CW	BW	MPW	SW	MW	CEW	CRW	WEW	WEW-TP	WEW-P	WEW-SD	REW-SD	BC	STW	BEW	
1001							1										
1007							1										
1113					2		2										
1125								2									
1132							6		1		7						
1145		1															
1251							1										
1408							12										
1411															1		
1440			1		1	2	9										
1536										2							
2001			1														
2020							3										
2036												1					
2086											3		1				
3000				1			1										
3063										1							
3156									1					1			
3332			1														
3406							1										
3486							1										
3522															1		
3686	1																
4002					5												
4047																1	
4056							3										
9085							1										
9304									1								
<b>Totals</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>42</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>82</b>
<b>% totals</b>	<b>1.2</b>	<b>1.2</b>	<b>3.7</b>	<b>1.3</b>	<b>9.8</b>	<b>2.4</b>	<b>51.3</b>	<b>2.4</b>	<b>3.7</b>	<b>3.7</b>	<b>12.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>2.4</b>	<b>1.2</b>	<b>100</b>

Key: IPW – Iron-Poor Ware; CW – Cistercian Ware; BW – Blackware; MPW – Midlands Purple Ware; SW – Slipware; MW – Mottled Ware; CEW – Coarse Earthenware; CRW – Creamware; WEW – White Earthenware; WEW-TP – White Earthenware-Transfer Printed; WEW-TP – White Earthenware-Painted; WEW-TP – White Earthenware- Slip Decorated; Red Earthenware-Slip Decorated; BC – Bone China; STW – Stoneware; BEW – Buff Earthenware

Table V.2: Ceramic vessel forms

Form	Fabric															Total	% Total	
	IPW	CW	BW	MPW	SW	MW	CEW	CRW	WEW	WEW-TP	WEW-P	WEW-SD	REW-SD	BC	STW			BEW
Jar							29								1		30	36.7
Jar/ Cistern				1													1	1.2
Jar/Jug							1										1	1.2
Jug	1										1						2	2.4
Pan							7										7	8.6
Pan/ Jar							1										1	1.2
Pan/Dish					5												5	6.1
Dish					3	1											4	4.9
Cup		1															1	1.2
Mug			1														1	1.2
Handled Bowl			1														1	1.2
Bowl								2					1			1	4	4.9
Teapot											1						1	1.2
Tea Cup										1							1	1.2
Saucer														1			1	1.2
Plate										2							2	2.4
Ewer											8						8	9.8
Bottle															1		1	1.2
Holloware			1			1				1			1				4	4.9
Flatware										1							1	1.2
Undiagnostic							4			1							5	6.1
<b>Totals</b>																	<b>82</b>	<b>100</b>

Key: IPW – Iron-Poor Ware; CW – Cistercian Ware; BW – Blackware; MPW – Midlands Purple Ware; SW – Slipware; MW – Mottled Ware; CEW – Coarse Earthenware; CRW – Creamware; WEW – White Earthenware; WEW-TP – White Earthenware-Transfer Printed; WEW-TP – White Earthenware-Painted; WEW-TP – White Earthenware-Slip Decorated; Red Earthenware-Slip Decorated; BC – Bone China; STW – Stoneware; BEW – Buff Earthenware

Table V.3: Spot dates for contexts containing ceramic material

<b>Context</b>	<b>Probable Date Range</b>
1001	18 <sup>th</sup> century
1007	18 <sup>th</sup> century
1113	late 17 <sup>th</sup> -early 18 <sup>th</sup> century
1125	early 19 <sup>th</sup> century
1132	19 <sup>th</sup> century
1145	late 15 <sup>th</sup> -early 17 <sup>th</sup> century
1251	late 17 <sup>th</sup> -18 <sup>th</sup> century
1408	18 <sup>th</sup> century
1411	mid-late 19 <sup>th</sup> century
1440	18 <sup>th</sup> century
1536	mid-late 19 <sup>th</sup> century
2001	late 17 <sup>th</sup> -early 18 <sup>th</sup> century
2020	18 <sup>th</sup> century
2036	19 <sup>th</sup> century
2086	late 18 <sup>th</sup> -early 19 <sup>th</sup> century
3000	16 <sup>th</sup> -19 <sup>th</sup> century
3063	early 19 <sup>th</sup> century
3156	19 <sup>th</sup> century
3332	late 17 <sup>th</sup> -early 18 <sup>th</sup> century
3406	18 <sup>th</sup> century
3443	19 <sup>th</sup> century
3486	18 <sup>th</sup> century
3522	mid-late 19 <sup>th</sup> century
3686	13 <sup>th</sup> -15 <sup>th</sup> century
4002	late 17 <sup>th</sup> -early 18 <sup>th</sup> century
4047	late 19 <sup>th</sup> /20 <sup>th</sup> century
4056	18 <sup>th</sup> /19 <sup>th</sup> century
9085	18 <sup>th</sup> century
9304	20 <sup>th</sup> century



Table V.4: full catalogue of ceramic material

context	description of ware	surface dec	dec in/on  body	glz d	vessel form/ description	b a s e	b o d y	g e r i m / e d	h a n d l e	p r o f i l e	b o w l	total no.  shds	date	notes
1001	coarse e'ware				jar/jug	*						1	18th century	Orange fabric with white laminae. Splashes of dark lead glaze around exterior base. Looks to have slip coat on exterior.
1007	coarse e'ware			*	pan			*				1	18th century	Orange fabric with white laminae. Dark slip coat and lead glaze on interior and exterior.
1113	slipware?			*	pan/dish			*				1	late 17th -early 18th century?	Salmon-pink fabric with white clay pellets and laminae. Lead glaze on interior, no obvious slip coat. Possibly a fragment of slip-decorated hollow ware.
	coarse e'ware			*	pan?			*				1	late 17th- early 18th century?	Dense orange fabric with white clay pellets. Lead glaze over dark slip coat on interior.
	slipware	trailed white slip		*	pan/dish			*				1	late 17th- early 18th century	Salmon-pink fabric, lead glaze on interior

context	description of ware	surface dec	dec in/on	glz d	vessel form/ description	base	body	rim	handle	profile	total no. shds	date	notes
1113 (cont.)	coarse e'ware		body	*	jar?	*					1	late 17 <sup>th</sup> - early 18 <sup>th</sup> century?	Orange/salmon pink fabric with white clay pellets and laminae. Lead glaze over dark slip coat on interior and exterior
1125	creamware			*	bowl	*					2 (conj.)	early 19 <sup>th</sup> century	
1132	coarse e'ware			*	jar	*		*			6 (2 conj.)	18 <sup>th</sup> /19 <sup>th</sup> century	Dense orange fabric with sparse white clay pellets and minimal lamination. Dark slip coat and lead glaze over interior and much of exterior.
	white e'ware	polychrome painted		*	ewer?	*		*			6 (2 x 2 conj.)	mid 19 <sup>th</sup> century	Possible polygonal moulded form. Floral decoration.
				*	small biconical jug	*					1	mid 19 <sup>th</sup> century	Floral decoration
1145	cistercian ware			*	cup				*		1	late 15 <sup>th</sup> – early 17 <sup>th</sup> century	Soft orange fabric with brownish lead glaze on exterior.

context	description of ware	surface dec	dec in/on	glz d	vessel form/ description	b a s e	b o d y	r i m / e d	h a n d l e	p r o f i l e	b o w l	total no. shds	date	notes
1251	coarse e'ware		body	*	pan		*					1	late 17 <sup>th</sup> – 18 <sup>th</sup> century	Orange fabric with sparse white clay pellets and laminae. Dark lead glaze on interior.
1408	coarse e'ware			*	jar		*		*			6 (2 conj.)	18 <sup>th</sup> century	Dense purple/red fabric with white clay pellets and laminae. Dark lead glaze over interior and exterior.
				*	jar		*	*				6	18 <sup>th</sup> century	Orange fabric with white clay pellets and laminae. Dark slip coat and lead glaze over interior and exterior.
1411	stoneware			*	jar		*					1	mid-late 19 <sup>th</sup> century	Off-white body with clear lead glaze over interior and exterior
1440	coarse e'ware			*	jar		*	*				7	18 <sup>th</sup> century	Purple/red fabric with white laminae. Dark lead glaze on interior and much of exterior.
				*	pan		*					1	18 <sup>th</sup> century	Orange fabric with white laminae. Dark slip coat and lead glaze on interior.

context	description of ware	surface dec	dec in/on	glz d	vessel form/ description	base	body	rim	handle	profil	total no. shds	date	notes
1440 (cont.)	coarse e'ware		body	*		*					1	18th century	Buff/salmon pink fabric with white laminae. Dark lead glaze on interior and exterior.
	blackware			*	hollow ware	*					1	early 18th century	Dense purple fabric with white clay pellets and laminae. Dar lead glaze on interior and exterior.
	slipware	trailed white slip		*	dish			*			1	18th century	Salmon pink fabric. Trailed slip under lead glaze on interior.
	mottled ware			*	dish/bowl			*			1	18th century	Salmon pink fabric with white laminae and iron-ore inclusions. Lead glaze on interior.
					*	hollow ware			*			1	18th century
1536	white e'ware	transfer printed (blue)		*	plate	*					1	mid - late 19th century	'Asiatic Pheasants' pattern

context	description of ware	surface dec	dec in/on  body	glzd	vessel form/ description				g e r i m / e d						total no. shds	date	notes
1536 (cont.)	white e'ware	transfer  printed (blue)		*	plate			*							1	mid - late 19th century	'Willow' pattern
2001	blackware			*	handled bowl			*							1	late 17th - early 18th century?	Dense purple fabric with dark lead glaze over interior and exterior.
2020	coarse e'ware			*	jar			*							3 (2 conj.)	18th century	Orange fabric with white laminae. Dark slip coat and lead glaze over interior and exterior. Corrugated exterior.
2036	slip-decorated e'ware	orange/ brown slip ground with dark slip over		*	hollow ware			*							1	19th century	
2086	white e'ware	polychrome painted		*	teapot			*							1	late 18th – early 19th century	
				*	undiagnostic			*							2	19th century?	

context	description of ware	surface dec	dec in/on	glz d	vessel form/ description	b a s e	b o d y	g e r i m / e d	h a n d l e	p r o f i l e	b o w l	total no. shds	date	notes	
2086 (cont.) 3000	slip-decorated red e'ware coarse e'ware	applied slip bands	body	*	bowl		*					1	late 18th – early 19th century		
				*	pan		*						1	18th/19th century	Dense orange/red fabric with sparse white clay pellets. Dark lead glaze on exterior.
					jar/cistern	*							1	16th - 17th century	Dense purple fabric with white clay pellets. Firing scar and splashes of dark lead glaze on underside of base.
3063	white pipe clay		moulded leaves on seams		pipe					*		1	19th century		
	white e'ware	transfer printed (blue)		*	cup	*						1	early 19th century	'Two Temples' pattern	
3156	bone china	floral sprig	moulded rim	*	saucer			*				1	2nd quarter 19th century +		



context	description of ware	surface dec	dec in/on  body	glz d	vessel form/ description	b a s e	b o d y	g e r i m / e d	h a n d l e	p r o f i l e	b o w l	total no. shds	date	notes
3156 (cont.)	white e'ware			*	undiagnostic		*					1	19th century?	
3332	blackware			*	mug?		*					1	late 17th – early 18th century	Dense purple fabric with fine, dark lead glaze over interior and exterior.
3406	coarse e'ware			*	pan/jar	*						1	18th century	Dense purple/red fabric. Dark lead glaze on interior and exterior.
3443	white pipe clay		moulded leaves on seams		pipe					*		1	19th century	
3486	coarse e'ware			*	pan	*						1	18th century	Orange fabric with white laminae. Dark lead glaze on interior.
3522	stoneware				bottle/ink bottle		*					1	mid-late 19th century	Grey-bodied stoneware with iron wash on exterior.

context	description of ware	surface dec	dec in/on  body	glz d	vessel form/ description										total no. shds	date	notes																	
						b	a	s	e	b	o	d	y	r	m	/	e	h	a	n	d	l	e	p	r	o	f	i	l	e	b	o	w	l
3686	buff e'ware			*	jug?					*					1	13th-15th century?	Buff, iron-poor fabric with abundant, well-sorted, small to medium, sub-rounded quartz and sparse iron-ore inclusions. Green glaze over interior and exterior																	
4002	slipware	trailed white slip		*	Pan/dish					*	*				3 (2 conj.)	late 17th century	Orange fabric with white clay pellets and laminae. Dark slip coat and white trailed slip under lead glaze on interior.																	
	slipware?			*						*					1	late 17th century	Salmon pink/orange fabric with white clay pellets and laminae. Lead glaze over interior. Possibly fragment of slip-decorated hollow ware.																	
	slipware	Trailed white and dark slip		*	dish					*					1	late 17th – early 18th century	Dense purple/red fabric with white clay pellets. Trailed slip and lead glaze on interior.																	
4047				*	bowl					*					1	19th/20th century	Kitchenware, probably a mixing bowl																	

## APPENDIX VI: FLINT, CHERT AND QUARTZ

George Smith

### Introduction

The flint and chert pieces over 10mm in length were individually recorded and the dimensions of complete pieces recorded together with information about type, class, colour, platform, retouch etc and put onto a database. There were too few complete pieces to warrant any metrical analysis. Pieces less than 10mm were recorded as microdebitage and by count only although the numbers of different colours were recorded. Most items were given individual finds numbers on site but where several pieces were included under one number a sub-number was allocated to allow recording of each piece.

The great majority of material is of flint, mostly derived from pebbles. The few pieces of chert are clearly not the result of selection but because some chert pebbles were present amongst the flint pebbles providing the raw material. Being of poorer quality for flaking, the chert pebbles may have been actively deselected. There were also some pieces of crystal as opposed to vein quartz, the majority being pieces of microdebitage retrieved during sieving and comprised small chips or irregular fragments under 10mm maximum dimension. A few of these were slightly larger and, despite the small size of the parent material, could be seen to be struck flakes. It was clear that the material was being worked and three pieces are possibly secondarily retouched or utilised, the transparency of the material making identification difficult. These pieces are described by context along with those of flint and chert. There were also five small pieces of unworked quartz crystals: two from Pit Group 8, one from Roundhouse H in Trench 3, one from the burnt mound in Trench 2 and one from ditch 3282 associated with the roundhouses in Trench 3. These were very small but could be deliberate inclusions. A larger, square crystal found in pit 1619 next to the Early Neolithic building and in association with the broken stone axe is more likely to have been deliberately deposited.

Some contexts were sampled extensively for flotation sieving for environmental evidence and subsequent sorting of the residues produced a number of pieces of microdebitage. The sieving also produced a few larger flakes or worked pieces that had not been identified during excavation and these were recorded individually, including a few microlith pieces. The sieving was useful because it provides a more detailed view of the technology, of the raw material and of the processes of reduction and deposition. Most of the microdebitage pieces were small broad flakes, indicating edge shaping or thinning of non-microlithic implements.

### Early Neolithic building

#### Summary

<i>Category</i>	<i>Flint</i>	<i>Crystal Quartz</i>
Flake	4	2
Flake frag	6	1
Irregular frag	1	
Microdebitage	62	44
Core frag	1	2
Split pebble	1	
Retouched piece	6	2
Casually retouched piece	2	
Utilised piece	3	1

#### Raw Material

All the pieces of flint with cortex present were from pebbles.

The microdebitage comprises all pieces under 10mm length, all collected during flotation and sieving of soil samples. This consists of 62 pieces from 21 different contexts. 45 of these pieces are well burnt and may be burnt chips or pieces derived from burning fractures. There were also 44 pieces of crystal quartz microdebitage, scattered fairly evenly in 21 contexts, almost the only occurrence of such material on the site as a whole.

The colours of all the pieces, including the micro-debitage were recorded excluding those that were clearly changed by burning and these were recorded just as burnt. The rest include buff, yellow-brown, red-brown and grey flint. Some of these flint colours may have been altered by slight burning, which is not always detectable.

Only two pieces were of mottled colour and both of these came from probable secondary contexts so may derive from activity later than the main assemblage.

### **Technology**

There was an unusually high ratio of retouched/utilised pieces to waste pieces.

Only one flint core was found, a fragment of a small pebble core. The crystal quartz cores are fragmentary pieces of complete crystals with negative flake scars.

All the pieces were small, the largest complete flake being only 39mm long indicating a small size of available material. Surprisingly, the largest piece would have been a leaf-shaped arrowhead, but this was incomplete. However, the size of the blank needed for its manufacture suggests it may have been imported or made on imported material.

### **Retouched and utilised pieces**

Category	Flint	Crystal Quartz
Leaf-shaped arrowhead	1	
Scraper	2	
Spurred piece	2	
Truncated piece?		1
Piercer	1	1
Casually retouched piece	2	
Utilised piece	3	

*Arrowhead* (Fig. 15, SF88). A burnt fragment from a long leaf or kite-shaped arrowhead. The estimated original dimensions are over 50mm long and over 21mm wide. This was found amongst the packing of a post-hole and therefore was in a primary context. The tip of the arrowhead was found during flotation sieving of all the soil from the pit.

*Scrapers*. Two convex end scrapers. One is a small scraper made on a split pebble (Fig. 15, SF61). It has a fresh, sharp edge with no sign of wear. Found in Pit 1249 at the south-east corner of the building. The other is made on a larger flake but also from a pebble (Fig. 15, SF173). It is heavily burnt and incomplete but seems to have had a fresh, unabraded edge. It was found in a secondary fill in a post-hole so may be intrusive or at least not in a primary context.

*Spurred pieces*. Two pieces. One is made on a flat, ecaillé type flake possibly derived from a pebble by the anvil technique (Fig. 15, SF1238). The other is a made on a small thick flake with notches at the end and side to give two spurs (Fig. 15, SF156).

*Truncated piece*. A small flake of crystal quartz retaining its bulb and of which the distal end may be finely retouched (Fig. 15, SF894).

*Piercers*. An *ad hoc* piece on a flint flake with a point that has been secondarily retouched (Fig. 15, SF1204). The possible piercer in crystal quartz is a segment of a flake with possible abrupt secondary retouch to a point although this may be just an irregular snap fracture (??Fig. 15, SF1239).

*Casually retouched pieces*. The example illustrated has fine retouch, microchipping and possible gloss on one slightly concave edge (Fig. 15, SF83).

*Utilised pieces*. Three flakes with gloss on sharp edges from possible utilisation for cutting.

### **Comments**

This is an unusually high proportion of retouched pieces to debitage. The lack of evidence for knapping activity is perhaps to be expected inside the building.

The tool assemblage is varied and domestic including not just actual retouched types but casually retouched and utilised pieces showing that they did not derive just from deposits of newly manufactured objects.

Cutting tools, proper piercing or boring tools and fabricators are absent, but the assemblage is too small to be reliably representative of the range of possible types.

The crystal quartz pieces do not include any that are indisputably genuine tools but the material was certainly being worked in a normal manner, despite its small size and the wide scatter of microdebitage (of a similar quantity to that of flint) shows this was not just a one-off trial of an unusual and difficult material. Unfortunately we don't know what it was being used for. The only other record of its use in north-west Wales comes from the Lledr Valley in Central Snowdonia where it comes from a mixed but predominantly Later Mesolithic assemblage, which includes one possible narrow-blade microlith in crystal quartz (Smith 2001).

The only pieces of mottled flint are in probably secondary contexts so may not belong with this assemblage.

Small convex scrapers are normally regarded as typical of Beaker assemblages but they do occur in coastal assemblages of the Later Mesolithic period onwards elsewhere in Western Britain from Wales and Cornwall, where small pebbles provide the main raw material source. This was the case with the assemblage from occupation area beneath the Trefignath Neolithic chambered tomb, near Holyhead, Anglesey, where similar scrapers were found

(Healey 1987 50-9). Others were also found in verifiably early contexts at the Neolithic chambered tomb of Din Dryfol, south-west Anglesey (Lynch 1987).

The arrowhead is the only non-domestic object. This is also special as an arrowhead. It is a large example, particularly for Western Britain where small leaf-shaped arrowheads are typical in the Early Neolithic period, partly perhaps because of the small size and poor quality of locally available flint. This in any case would have been a large example amongst leaf-shaped arrowheads and may have been an even more unusual kite-shaped example because its sides are almost straight. This type is recorded as most common in Ireland and Scotland with a few recorded from Northern England from special burial deposits (Green 1984, 32). One also occurred in the Early Neolithic phase at Maiden Castle, Dorset (Sharples 1991, 223). However, they have also been found in Wales. In South Wales two were found (one a large 63mm long example) at the Neolithic chambered tomb of Gwernvale, Brecknock, in contexts contemporary with the use of the cairn (Healey and Green 1984, 126-7). In North Wales one was found at the chambered tomb of Dyffryn Ardudwy, Meirionnydd and two at the chambered tomb of Pant y Saer, Anglesey (Lynch 1969, 156). One of the latter was a large example, 60mm long, comparable to that from Parc Bryn Cegin.

The example here indicates a larger size and better quality raw material than the rest of the assemblage and so could have been imported. It was burnt and incomplete so there is a slight possibility that it could have been the tip of a fine one-piece sickle, which would be a rare but diagnostic tool-type for this period. It was certainly a delicate and probably special object. Its position, in a primary context amongst the packing of one of the main posts of the building may indicate a deliberate and meaningful deposit. The tip of the arrowhead, found during sieving, retains only one face and does not conjoin with the main piece so the arrowhead may have been complete before burning and much of it seems never to have been in the post-hole. This could be explained if it derived from an incomplete collection of the remains of the burning process as might occur in a funerary cremation buried in the pit.

## Later Neolithic pit groups

### *Pit Group 1*

#### *Summary*

	<i>Pit 1027</i>	<i>Pit 1036</i>	<i>Pit 1049</i>	<i>Pit 1052</i>	<i>Pit 1258</i>	<i>Pit 1321</i>	<i>Relict soil 1156</i>	<i>Ditch 1034</i>
Flake						1		
Flake frag	3		3	1				
Microfrag		5	71		5	1		
Retouched			1	1				1
Utilised			1					
Core								
Core frag							1	

#### *Raw Material*

All is of flint except for one piece of black chert. Only two pieces have cortex present and these are both of pebble flint, probably derived from the fluvio-glacial drift, or from beach deposits deriving from it. Black chert pebbles occur in the glacial drift and outcrops at several places in north-east Anglesey.

Of 82 pieces of microdebitage the majority derives from one pit, 1049 and of these 67 are the same yellow-brown colour, the rest in mixed colours. Only two are burnt. Two pieces are in a mottled flint light grey and dark grey flint, but the occurrence of mottling is uncertain since such small pieces may show variations within the piece. The larger flint pieces are in more evenly mixed colours, mainly light grey and mid-grey, with a few of yellow-brown and buff but none of mottled colour.

#### *Technology*

This is a very small group but mainly of debitage and this mainly of tertiary flakes. The one core is worked on a pebble of light grey flint. The use of pebble raw material is reflected in the small size of all the pieces, the largest complete piece being only 15mm long.

#### *Retouched and utilised pieces*

One piece exhibits a regular form. This is a small thin flake with microlithic truncation of the end (Fig. 28, SF 29). The other pieces have more casual retouch, there is another truncated flake and a possible spurred piece. One flake has gloss on the end, possibly from utilisation.

### *Comment*

None of these pieces is diagnostic of date or function by type or by technique. The small size of the pieces, the lack of distinct forms, the mix of colours and the scatter through several pits suggests casual, probably domestic use and deposition. The occurrence of a large number of pieces of microdebitage in Pit 1049 is distinctive. The fact that most are of the same colour suggests that they derive from a single knapping episode but are not proportionate to the number of larger waste pieces present in the pit. Of these five pieces four are mid-grey and one is yellow-brown, the same colour as the bulk of the microdebitage.

### *Pit Group 2*

#### *Summary*

	<i>Pit 4012</i>	<i>Pit 4016</i>	<i>Pit 4018</i>	<i>Pit 4020</i>	<i>Pit 4021</i>	<i>Pit 4024</i>	<i>Pit 4049</i>
Flake					6		
Flake frag					1		
Irreg frag	1						
Microfrag	32				29		
Retouched	1						
Utilised	1						
Core		1					

#### *Raw Material*

All pieces the struck are of flint. The core and one flake have pebble cortex. Six flakes and the one retouched piece are made from a dark grey-black, fine, possibly imported flint. There were also two unworked pieces of crystal quartz, which may have been deliberately collected (and deposited) objects.

The microdebitage comprises 61 pieces of which a few are burnt. Of the rest most is light or mid-grey with six pieces red-brown and four pieces mottled light grey/mid-grey. The larger waste and worked pieces are all light grey or dark grey.

#### *Technology*

Use of both small poor quality pebble and finer and probably larger imported flint raw material would lead to different types of waste. The one core present is made on a pebble and is small, single platform and conical of Mesolithic type but perhaps just represents the type of raw material that was available (Fig. 29, SF489).

#### *Retouched and utilised pieces*

The one retouched piece is a large flake of fine probably imported flint with neat serrations on one sharp side edge (Fig. 29, SF1096). The utilised piece is also made from this finer quality flint, a flake with gloss and microchipping on the side and end edges.

### *Comment*

Serrated pieces are common in flint assemblages from throughout the Mesolithic and Neolithic periods. This piece is more likely to be Later Neolithic on the grounds that earlier pieces tend to be on blades (i.e. with a length over twice its width) and this is quite a large broad flake, although it is broken and so may originally have been a blade. A similar piece was found from a pre-cairn context at the Neolithic chambered tomb of Trefignath, Anglesey, but even so the piece was regarded as of Later Neolithic affinity (Healey 1987, 56). Functionally, the distinction between serrated pieces and saws is also not clear and this piece has quite large serrations although they are contiguous, and do not form separate 'teeth'. The serrations are sharp and fresh without obvious sign of wear, suggesting that the piece was either not used or was used for cutting soft material.

The presence of a significant number of pieces of microdebitage in two of the pits indicates that there was some flint knapping in the vicinity. The most notable feature is the presence of several pieces of finer, probably imported flint. A few pieces of better quality imported flint were also recorded at the Early Neolithic settlement at Trefignath, Anglesey), where pebble flint was the main source of raw material. The better quality flint was there interpreted as from the Irish Sea drift (Healey *op cit*).



### ***Pit Group 3***

#### *Summary*

	<i>Pit 4062</i>	<i>Pit 4069</i>	<i>Pit 4092</i>	<i>Pit 4093</i>
Flake	1			
Flake frag	3	2	1	
Microfrag	1	7	49	3 (Crystal quartz)
Core frag			1	

#### *Raw Material*

All are of flint except for three minute slivers of crystal quartz. Only one waste flake has cortex and that is from a pebble. All the pieces are probably derived from pebbles, with no finer flint that could be imported.

Most of the microdebitage is from one pit, 4092 of which 38 are of the same light grey-brown. The rest is of mixed colours. The larger waste pieces and the core, however are all light grey or mid-grey.

#### *Technology*

The core fragment is only 24mm long and 23mm wide and is probably a core rejuvenation flake, struck from a small, probably conical pebble core.

#### *Comment*

There are no retouched pieces and no other pieces diagnostic of date or function. The presence of debitage, including microdebitage suggests knapping nearby and perhaps accidental incorporation of the pieces in the pits.

### ***Pit Group 4***

#### *Summary*

	<i>Pit 4100</i>	<i>Pit 4103</i>	<i>Pit 4109</i>
Flake		2	3
Flake frag	1	2	4
Microfrag	1	10	11
Retouched			1
Casually retouched	1	1	
Utilised			1
Core frag			1

#### *Raw Material*

All are of flint. None have any cortex present but one piece is of a fresh dark flint that may be imported.

Some of the microdebitage is burnt. All is of light, mid or dark grey and one piece is mottled mid/dark grey, from Pit 4109. The larger pieces are also of grey flint and two pieces are mottled, from pits 4100 and 4109.

#### *Technology*

All derive from small flakes, except for the retouched piece and one of the casually retouched pieces which are larger, being 32mm and 48mm long respectively.

#### *Retouched and utilised pieces*

The retouched piece is a neatly made convex scraper made on a large re-curved flake retouched to a neat discoidal shape (Fig. 31, SF1252). The two casually retouched pieces have no particular form. One is a large flake while both have casual retouch and possible utilisation.

#### *Comment*

This is a small but well mixed assemblage with both utilised and waste pieces indicating manufacture and use close by. Both the scraper and the larger casually retouched piece are made on good quality mottled flint, which may be imported. The scraper is neatly made and while not reliably diagnostic would be more characteristic of the Later rather than Earlier Neolithic.

## Pit Group 5

### Summary

	Pit 4133	Isolated find 30m from Pit 4133
Flake frag	1	
Microfrag	50	
Core frag	1	
Casually retouched		1

### Raw Material

All pieces are of flint. The core fragment is of pebble flint and mid-grey. The microdebitage is of mixed colours, some of which is burnt and occurs in all three layers in the pit. The flake fragment and one piece of microdebitage are of mottled mid-grey/dark grey flint. The mixed colours suggest that pebble flint was the main source but the occurrence of two pieces of mottled flint may suggest some imported material.

### Technology

The probable use mainly of pebble flint indicates that the size and quality of the material would restrict the technology. The core fragment is a flat segment of a small pebble that has had a subsequent flake removal.

### Comment

The one possibly casually retouched piece is a flake from a pebble with irregular but scraper-like microchipping on one edge. None of the pieces are diagnostic of date. The presence of a scatter of microdebitage of varied colours suggests that secondary working was taking place close by and was more extensive than indicated by the presence of only two larger worked pieces. The presence of mottled flint seems to be typically associated with Later Neolithic pottery here.

## Pit Group 6

### Summary

	Pit 6034	Pit 6041	Pit 6043	Pit 6044	Pit 6047	Pit 6055	Pit 6061	Pit 6072	Pit 6087	Unstrat
Burnt frag								1		
Flake		2	3			1	1	6		
Flake frag		4	3	1			1	6	1	1
Irreg frag								1		
Split pebble								1		
Microfrag	18	34	80		3	6		61	14	
Retouched	2	4	2					2		
Utilised		1								
Core frag		1								

### Raw material

All pieces are of flint except for two pieces of crystal quartz microdebitage in Pit 6041. This includes eight pieces of pebble flint identifiable from cortex but there are 18 pieces of dark, better quality, probably imported flint. The pebble flint pieces are of mixed colours, yellow-brown, light grey, mid-grey and dark grey. Most of the better quality flint is dark grey/black but there are a few pieces of mottled light grey or mid-grey/ dark grey with distinctive fossil inclusions.

Of the 216 pieces of microdebitage 34 pieces are burnt and the rest is dominated by light grey-brown, mid-grey and yellow-brown colours, in contrast to the larger pieces of debitage and retouched pieces, which are dominated by mottled mid-grey/dark grey flint.

### Technology

The size of the pebbles used would have allowed only small flakes but the possibly imported flint is represented by much larger flakes, fragments and worked pieces, the largest (Fig. 33, SF765) being 75mm long,

### Retouched pieces

	Pit 6034	Pit 6041	Pit 6043	Pit 6044	Pit 6047	Pit 6055	Pit 6061	Pit 6072	Pit 6087	Unstrat
Convex scraper		2								
Scraper frag?								1		
Convex scraper/knife		1								
Edge retouched knife	1							1		
Serrated piece		1								
Spurred piece			1							
Microlith	2		1							

The convex end scrapers are made on fine, dark grey-black, possibly imported flint using the quality of the material to good effect with pronounced bulbs producing flakes with re-curved bulbar faces and an acute angle for the working edge (Fig. 33, SF770 and 779?). The largest scraper also has fine utilisation chipping along one straight sharp edge (Fig. 33, SF765). This is also the largest piece in the whole site assemblage and appears to have been damaged by a heavy direct blow or possibly trampling pressure on one face. The microdebitage from Pit 6072 included one narrow spall with steep retouch, which is interpreted as the snapped-off edge of a convex scraper.

The serrated piece is a thin blade that has been blunted by steep unifacial retouch on one side and has shallow unifacial flaking and fine serrations on the other side (Fig. 33, SF781). This would be classed as a D-shaped blunted-back knife except for its serrated edge. Blunted-backs on knives have been interpreted as aids to hafting and this piece could have been hafted as part of a multi-part sickle. There is some gloss from possible wear on both the serrated edge and back. Two other pieces are fragments of large thin flakes with edge retouch. SF 858 (Fig. 33) is an edge-retouched knife. SF 979.1 (Fig. 33) has one edge backed by neat steep retouch while the opposite edge, although not retouched, is naturally sharp and so seems also to be a knife.

One piece (SF778.2, Fig. 33) has abrupt retouch on two sides of the proximal end of a flake to create a projecting 'spur', which may be a type of piercing implement.

The one possibly utilised piece is a broad flake with microchipping on one edge and is made on mottled mid-grey/dark grey flint.

The two microliths include one complete narrow-blade scalene triangle (SF979.2, Fig. 4), 12mm by 6mm, in buff-coloured flint from Pit 6034 and two probable mid-section fragments of narrow-blade microliths from Pit 6043, one mid-grey, and the other buff. The scalene triangle is made on a narrow flake retaining its bulb and retouched on the end and one side.

### Comment

Convex scrapers of the type found here are normally the most common tool type on Neolithic sites and are not typologically diagnostic except perhaps when large numbers are studied metrically. Even then their dimensions may be determined by the size of the available raw material, where pebble flint is used. The three examples here are clearly not made on flakes from the locally available pebble flint. Their size, shape and quality would be more typical of the Middle or Later Neolithic than earlier or later and comparable to scrapers from Later Neolithic sites in southern Britain, like Durrington Walls (Wainwright and Longworth 1971, 163-9), than with examples from closer at hand, e.g. at Capel Eithin, Anglesey (Aldhouse-Green 1999, 43-4).

The serrated piece is the most refined and distinctive tool type here. Simple serrated flakes or blades are frequent occurrences in Mesolithic, Early and Later Neolithic assemblages but this carefully-shaped example is more comparable to D-shaped backed knives of the Middle or Later Neolithic, e.g. at Fengate (Pryor 1978) or Durrington Walls (*op cit* 174). It is closely comparable to a knife from the Neolithic chambered tomb of Trefignath, Anglesey, in association with Late Neolithic pottery (Healey 1987, 55-6). That example was also made from possibly imported nodular flint.

Edge retouched knives and spurred pieces are common tool types that are not diagnostic of period but both the knives are on good quality flint that must have been imported.

The microlith pieces were found, like most of the microdebitage, as a result of flotation and sieving of all the soil from the pits. There were no microburins present to indicate specialised microlithic manufacture.

The microlith and two fragments are all on narrow blades and typical of the Later Mesolithic. They seem to have been made on locally available pebble flint unlike the larger implements. There are a few pieces of pebble flint

amongst the larger debitage. The microdebitage surprisingly includes a predominance of light grey-brown yellow-brown and mid-grey flint with only a few pieces of dark grey or mottled flint. This suggests that the larger implements were made elsewhere or brought to the site as blanks that needed little working while primary working was confined mainly to pebble flint.

Not a single arrowhead was found amongst this pit group or any of the other pit groups with Later Neolithic pottery. Oblique or transverse arrowheads are a typical occurrence on other classic Grooved Ware sites, such as Woodhenge or Fengate and their absence here must be significant, although difficult to explain. The groups of flint in the pits seem unlikely to be special deposits similar to the type of assemblages that are found in association with burials in as much as the finds from the pits include waste, broken, burnt and previously used pieces. This does not preclude the possibility that they were token samples of domestic debris although the scatter of disparate objects and the absence of retouched pieces in some pits seem to suggest simply inclusion as part of domestic debris. The microdebitage was almost certainly an accidental inclusion and the greatest number was in Pit 6043, which included only the spurred piece and the microlith. The microliths themselves must be accidental inclusions and residual pieces but are interesting because the fill of the pits can be regarded as providing a sample of the Neolithic environment, now lost except for what lithic pieces might survive in the modern topsoil, which was not sampled. Pit 6041 had little debitage although it included all the finer pieces, the two scrapers, the scraper/knife and the serrated piece and this is the one pit that might be regarded as special in terms of its content.

### ***Pit Group 7***

	<b><i>Pit 3111</i></b>	<b><i>Pit 3121</i></b>	<b><i>Pit 3139</i></b>	<b><i>Pit 3143</i></b>	<b><i>Pit 3146</i></b>	<b><i>Pit 3155</i></b>	<b><i>Pit 3186</i></b>	<b><i>Pit 3190</i></b>	<b><i>Pit 3236</i></b>
Flake frag						1			
Utilised					1				

The flint flake fragment was in yellow-brown flint, probably from a locally obtained pebble. The possibly utilised piece is a small rod-shaped fragment of crystal quartz (Fig. 34?, SF 1308). One end of this has some damage, possibly from use but more likely from production of the piece from the core by the anvil technique. Despite the lack of other flakes or pieces of microdebitage of crystal quartz this piece was certainly manufactured.

### ***Pit Group 8***

#### ***Summary***

	<b><i>Pit 1305</i></b>	<b><i>Pit 1309</i></b>	<b><i>Pit 1553</i></b>	<b><i>Pit 1579</i></b>	<b><i>Pit 1584</i></b>	<b><i>Pit 1586</i></b>	<b><i>Pit 1596</i></b>	<b><i>Pit 1599</i></b>
Flake frag	1							
Irreg frag	1							
Microfrag			1 crystal quartz				1 flint 1 crystal quartz	

#### ***Raw material***

The flake fragment is from a pebble core and is mid-grey as is the irregular fragment while the microfragment is light grey-brown. The irregular fragment has no recognisable bulbar or non-bulbar surface, so is probably struck from a pebble by the anvil or ecaillé technique.

#### ***Comment***

These pieces give no suggestion of date or function and the small number suggests accidental or even residual inclusion.

### **Miscellaneous areas**

#### ***Summary***

	<b><i>Tr 1 Burnt mound</i></b>	<b><i>Tr 2 Burnt mound</i></b>	<b><i>Tr 2 Plough soil</i></b>	<b><i>Tr 2 Ditch 2157</i></b>	<b><i>Tr 4 Burnt mound</i></b>	<b><i>Tr 6 Burnt mound</i></b>	<b><i>Tr 3 Pit oven</i></b>	<b><i>Tr 4 Stone deposit</i></b>	<b><i>Tr 2 Bead cache</i></b>
Flake				1					

Flake frag	1			1	1				
Irreg frag		1		1		1			
Microfrag									1
Retouched		1			1			1	
Casually retouched									1
Utilised							1		1
Core			1						

	<i>Tr 3 Plough soil North Enclosure</i>	<i>Tr 3 Round house A</i>	<i>Tr 3 Plough soil Round house A</i>	<i>Tr 3 Round house D</i>	<i>Tr 3 Plough soil Round house D</i>	<i>Tr 3 Round house G</i>	<i>Tr 3 Round house H</i>	<i>Tr 3 Plough soil Round house H</i>	<i>Tr 3 Ditches</i>	<i>Tr 4 Round house E</i>
Burnt frag										1
Flake	1	1							1	
Flake frag									1	
Irreg frag		2				1			1	
Microfrag		2				5	3 flint 1 Crystal quartz		2	
Retouched		1	2	1		1		1		
Casually retouched			1		1					
Ecaillé							1			
Core										1
Pebble frag		1								

The above table shows all the pieces from significant deposits but omits a few isolated pieces. The latter comprise a utilised piece from a possible prehistoric feature in Trench 1, a flake fragment from a possible prehistoric feature in Trench 2, two irregular fragments from a tree-hole in Trench 3, one piece of microdebitage from a possible prehistoric feature in Trench 3 and a fragment of a possible truncated piece from Trench 1 and a utilised blade of fine imported flint from Trench 6. There are also two flakes from post-medieval contexts in Trenches 1 and 4 and a few pieces from unstratified contexts that are described with the ploughsoil finds, below.

### **Raw material**

Of the pieces of identifiable origin eleven are pebble flint and three possibly imported better quality flint, one from Trench 3 Ditches, one from Trench 3 Pit oven and the other from Trench 4 Burnt mound. The very varied colours of the rest suggest the predominant use of pebble flint.

There were also two unworked pieces of crystal quartz. One came from the burnt mound in Trench 2 and is probably just a chance natural occurrence. One came from the roundhouse ditches in Trench 3 and may have been collected raw material associated with other lithic pieces in that area.

The larger size of the better quality, dark grey imported flint is shown by the piercer from Roundhouse A (Fig. 67, SF528), which is made on a flake that is incomplete and perhaps half its original length but is still 41mm long. This flake has a thin smooth, worn cortex that shows it came from a pebble not a fresh nodule showing that the better quality flint on the site, although imported may have originated from the western seaboard, rather than from inland to the east.

### **Technology**

The use of pebble flint is reflected in the small size of the complete pieces of pebble flint, the largest 28mm long, whereas two pieces of the finer imported flint are 68 and 42mm long (Fig. 51, SF472 and 585). Both cores are pebbles, one of buff flint, the other light grey flint, struck from more than one direction (Fig. 4, SF701). The *ecaillé* piece also results from working a pebble.

### ***Retouched pieces***

	<i>Tr 2 Burnt mound</i>	<i>Tr 4 Burnt mound</i>	<i>Tr 4 Stone deposit</i>	<i>T3 RHA</i>	<i>Tr 3 Topsoil RHA</i>	<i>Tr 3 RHD</i>	<i>Tr 3 RHG</i>	<i>Tr 3 Topsoil RHH</i>
Edge retouched knife	1	1						
Barbed and tanged Arrowhead			1					
Piercer					1			
Serrated piece						1		
Spurred piece				1	1			
Thumbnail scraper								1
Microlith							1	

There are two pieces associated with burnt mounds. One, from a burnt mound in Trench 2, is a fragment of an edge-retouched knife with neat scalar flaking (Fig. 51, SF881). This is made on a flake with concave profile and is a simple form of plano-convex knife indicating a date in the second millennium BC. The other, from a burnt mound in Trench 4, is another knife made by casual retouch of a flake of dark, good quality flint with fine retouch along one sharp side edge (Fig. 51, SF585). The waste pieces in ditch 2157 may derive from activity associated with the nearby burnt mounds in trench 2 but are not diagnostic of date or function although there is only pebble flint, no better quality material.

The utilised blade from pit-oven 3133 in Trench 3 has utilisation microchipping and gloss on one side edge and around the tip (Fig. 51, SF472).

The bifacial barbed and tanged arrowhead (Fig. 51, SF581) is made from light brown flint, probably from a pebble and came from a layer of rounded stones identified as a natural deposit in Trench 4.

The retouched pieces from roundhouse contexts comprise two spurred pieces from Roundhouse A, a serrated blade fragment from Roundhouse D, a thumbnail scraper from Roundhouse H and a microlith from Roundhouse G. The latter (Fig. 4, SF1228) is a small scalene triangle retouched on three sides, possibly originally retaining a bulb and made on light brown, probably pebble flint.

Small 'thumbnail' scrapers occur in all periods especially where pebble flint, like this one (Fig. 51?, SF757), is the only locally available material, so are not chronologically diagnostic. The piercer (Fig. 67, SF528) from Roundhouse A is made on the end of a large flake, the tip of which has been narrowed by alternate retouch and there is some possible utilisation microchipping on one sharp side edge. One of the spurred pieces was made by fine abrupt retouch on a flake from a pebble (Fig. 67, SF482). It is unusual because it has a longer tang-like spur than most spurred pieces and was made on the bulbar end of the flake so could be an unfinished tool such as a knife.

The three pieces from near the bead cache include one possibly casually retouched flake and one utilised piece. Both may be just a result of accidental trample damage. The former is a flake with steep inverse retouch along one side and the latter is a small flake with end damage.

### ***Comment***

The association of a few pieces with burnt mounds may provide some evidence about their use and the presence of two cutting tools is worth noting and the possible correspondence between any radiocarbon date and the typological dating of SF881.

One utilised blade (SF472) came from a layer of redeposited clayey material over Pit oven 3133 in Trench 3. This is the only lithic find from such features on the site. It may be a residual and accidental inclusion although the fact that it is in fresh condition with no damage despite being a thin and delicate flake suggests it could have been *in situ* since its deposition. The size and quality of the piece, using imported flint, means that it is likely to derive from the Later Neolithic activity on the site.

The arrowhead (SF581) is not a common type for Wales being of the Conygar Hill type as defined by Green (1984), a type most commonly found in burials in association with Food Vessels, for example at Clocaenog, Denbighshire (Savory 1980, 144 & 198). It is complete and undamaged and so is unlikely to have been moved since its deposition, suggesting that it was not a stray loss, as is often the case with arrowheads, but a deliberate deposit. If so it may be that the stony deposit was the remains of a cairn and that the arrowhead belonged with a cremation burial that may not have been recognisable if no pot accompanied it.

There is a small but significant group of material from Trench 3, which is interesting because that trench was dominated by the presence of the roundhouse settlement. Although Pit Group VII was dated to the Bronze Age it produced only one lithic piece, and is unlikely to have accounted for the other pieces in the trench. The pieces do not seem technologically or typologically different from the material associated with the Later Neolithic pits and one, the microlith is quite clearly residual. The probable explanation for the recovery of this group of material from Trench 3 was that much larger areas of topsoil were subject to view because of the extensive hand excavation needed over the



round-house settlement in that trench, compared to other trenches where topsoil was removed more completely before hand excavation. The topsoil in other trenches may therefore also have contained a small scatter of lithic pieces that were not recovered and because of the small numbers present, could not have been usefully sampled.

The microlith is of narrow blade, Later Mesolithic type. It was found during flotation sieving of soil samples, as for the other microlith pieces found in Pit group VI. Like them it must be residual as is most likely for the other lithic pieces from roundhouse contexts. The serrated blade, on yellow-brown flint, could be of the same period as the microlith. The sieving of a large quantity of soil from roundhouse contexts and the few lithic finds from them provides good evidence that there was only minor Mesolithic activity in this area.

## Ploughsoil

### Summary

The positions of most pieces of from the ploughsoil were located and these are included in the description of material from the relevant nearby features. The most significant group of material was from Trench 3, where the roundhouse settlement was found. A few, described here, were isolated and identifiable only to Trench.

	<i>Trench 2</i>	<i>Trench 3</i>	<i>Trench 4</i>	<i>Trench 6</i>	<i>Trench 8</i>
Flake	1				
Flake frag	1			2	
Irreg frag	1		1		
Split pebble		1			
Retouched	1	2			
Casually retouched			1		
Utilised	1				
Core					1
Core frag	1				
Battered piece			1		

### Raw material

All pieces are of flint and of those identifiable as to source in Trench 2 three are pebble flint, in Trench 3 two are pebble flint. In Trench 4 one is pebble and two are finer flint as is one in Trench 6. The predominance of pebble flint is shown also by very varied colours amongst all the material. The battered piece is a large flake of fresh dark grey-black, probably imported flint with distinctive irregular battering all around its edges. This is probably a stray modern introduction like a group of similar pieces found during the 1966-7 excavations and interpreted as deriving from flint brought in to supply a flint grinding mill at Tal-y-bont in the 19<sup>th</sup> century (Lynch and Musson 2004, 116).

### Technology

Both the cores were derived from pebbles, the one complete core is small, 35mm by 27mm by 19mm, struck from two perpendicular directions. The use of pebble flint is reflected in the restricted size of pieces.

### Retouched pieces

	<i>Trench 2</i>	<i>Trench 3</i>	<i>Trench 4</i>
Spurred piece?	1		
Truncated piece?		1	
Edge-retouched knife		1	
Casually retouched piece			1

None of these pieces are diagnostic of date but are of a varied group of functions that represent probable domestic activity.

### Comment

These are a few scattered pieces, none of which form a significant group or association so cannot be used to add to understanding.

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## APPENDIX VII: STONE ARTEFACTS

George Smith

### Pebble tools

#### *Artefact associated with the Early Neolithic House*

135. Found in the fill of a post-hole (1656), with other packing stones. A natural elongated oval pebble of a hard igneous stone (possibly fine-grained tuff – Jenkins, below). In shape and size it is very similar to an axe but it has not been shaped, worked or obviously utilised in any way. There is possible slight abrasion at each end but this could have been present before collection. Similar elongated pebbles are found with later Mesolithic flint assemblages in coastal Cornwall such as at Carn Greeb (Jacobi 1979, 59) and south-west Wales, such as at Nab Head (Wainwright 1963). Some examples have faceting or chipping on the tip of unknown function but possibly from use as flint fabricators. This one is certainly a collected and introduced object and may have been collected just for its curiosity value because of its elegant shape. However, its shape would have made it ideal for use as a pebble tool, as described, giving it some value and so could have been deliberately deposited as an 'unused' tool.

#### *Artefact from the Late Neolithic Pit Group VIII*

274. Pebble hammer. From Pit 1596. A long, finger-shaped natural pebble of hard igneous rock (dolerite – Jenkins, below) chipped at both ends from use as a light hammer. This was probably a fabricator or retouchoir for flint or other stone artefacts. This pit actually contained no flint but did contain two retouched flakes of possible (but not provable) Mynydd Rhiw stone and two worked pieces of Graig Lwyd stone, one a flake, the other a fragment from a ground and polished axe. The close contextual association makes it seem a good chance that the pebble tool was used to produce these artefacts. It is a shape of pebble that would have been difficult to find, giving it some value and as it is complete and undamaged, apart from its use wear, may have been deliberately deposited rather than discarded.

### Querns and rubbing stones

#### *Artefacts associated with the roundhouse settlement in Trench 3*

473. (Fig. 67) Burnishing/Rubbing stone. From the topsoil above roundhouse A. A broken fragment of an oval pebble of a fine hard dark red igneous rock, which must have been carefully collected for its hardness and smoothness and perhaps unusual colour. It has a general polish from repeated handling and one face has localised more developed polish from burnishing, possibly used in a side-to-side motion. The tip also has facets from repeated abrasion with the tool held at a slight angle to the working area. There is also a flat worn facet on one side edge, parallel to the long axis of the tool. There are also areas of light peck marks near to the end on both faces from use as a light hammer. This pebble was carefully chosen for the particular qualities of the stone, which is unusual and probably derives from the glacial drift. Similar flat stones with polish have been suggested to be leather working or metal working tools and been found in undated contexts at Capel Eithin (White and Smith 1999), Rhos-y-Gad (Lynch 1991, 365) and Melin y Plas (Davidson and Hughes forthcoming), all on Anglesey. However, this one was a multi-functional tool. The end facets are similar to those on pebble tools associated with later Mesolithic coastal sites, perhaps from use as flint fabricators but pebbles with similar facets from use as grinders have been found at the Middle Bronze Age settlement of Mellteyrn Uchaf, Llŷn (Ward and Smith 2001) and on Iron Age sites in Somerset (Coles 1987, 150-4) and so seem to have been fairly standard tools with some common, everyday use, such as in food preparation. The multiple uses shown by this tool make production of artefacts of materials such as leather, horn, bone or wood seem likely where abrading, burnishing and perhaps hole-punching or riveting were all needed.

480. Saddle quern fragment. (Orthoquartzite, possibly basal carboniferous, e.g. from Benllech, Anglesey – Jenkins, below). From a layer of stony colluvium above roundhouse A. A fragment from the edge of a sub-rounded slab of coarse conglomerate. It has one concave worn asymmetric surface showing it is from a saddle quern.

789. Saddle quern fragment. (Orthoquartzite, possibly basal carboniferous, e.g. from Benllech, Anglesey – Jenkins, below). Embedded in the subsoil within roundhouse C. A fragment of conglomerate with a gently curving outer surface, probably shaped by pecking, and one slightly concave worn asymmetric surface showing it is from a saddle quern. Querns and mortars have been found in several places elsewhere *in situ* in the floors of excavated roundhouses, where they had been set to be used, for instance at Pant y Saer, Anglesey (Phillips 1934) and Cefn Graeanog, Caernarfon (Kelly *et al* 1999, 45). This may therefore be the remains of such an *in situ* quern.

595. Saddle quern rubber fragment. (Orthoquartzite, possibly basal carboniferous, e.g. from Benllech, Anglesey – Jenkins, below). An unstratified find from trench 3. A fragment from a large, thin flat slab with one flat worn face and an outer edge that has been chipped to a curvilinear shape. If it was a saddle quern rubber the worn surface would be most likely to be asymmetric but the worn surface is quite flat. Therefore it could have been

the upper stone of a flat disc quern, a type introduced during the Roman period. However, the worn face has no concentric wear marks to confirm this.

682. Saddle quern fragment. (Orthoquartzite, possibly basal carboniferous, e.g. from Benllech, Anglesey – Jenkins, below). An unstratified find from trench 2. A fragment from a thin slab with an original curvilinear outline and one slightly concave worn face. Similar to 595. Asymmetric wear suggests it is part of a saddle quern rubbing stone.
557. Pillow stone/Working slab. (Dense sandstone or tuff – Jenkins, below). From a possibly natural animal hole or tree hollow in trench 4. A fragment from a large natural cobble. One slightly concave face has been smoothed from use, probably as a pillow stone in food preparation or leather or fibre working.
758. Whetstone. (Fine silicified sandstone or tuff – Jenkins, below). A natural elongated sub-rounded pebble, 116mm by 35mm by 21mm, that has been worn on one face. From the surface of the subsoil in trench 3, so possibly associated with the roundhouse settlement.
1032. Quern or rubber fragments. Five small shattered rock fragments, of medium-grained igneous rock, two are evidently burnt and the rest may be too. (Lower Palaeozoic, possibly Cambrian, Arfon – Jenkins, below). From a gully in trench 3, probably associated with the roundhouse settlement. Two have flat worn facets so probably derive from a broken quern or rubber.
1250. Quern or rubber fragment. Burnt fragment of medium-grained igneous rock. (Lower Palaeozoic, possibly Cambrian, Arfon – Jenkins, below). From the lower fill of pit 9315 within roundhouse G. This has one flat, worn facet and so probably derives from a broken quern or rubber.

### **Comment**

The absence of beehive rotary querns is notable as such types of querns are believed to have come into use in north-west Wales in the later 1<sup>st</sup> century AD (Hughes 1977, 6) and pottery evidence from Parc Bryn Cegin suggests some occupation at least continuing into the 3<sup>rd</sup> century AD. However, there is good evidence that saddle querns continued in use through the first millennium BC and the Roman period. One was found still *in situ* in a roundhouse excavated at Pant y Saer, Anglesey and must have still been in use until occupation ceased, sometime in 4<sup>th</sup> century AD (Phillips 1934). Rotary querns were also found at the roundhouse settlements of both Bryn Eryr (Anglesey) and Bush Farm (Caernarfon), occupied during the same period as Parc Bryn Cegin (Longley *et al* 1998). Of three roundhouse settlements excavated in advance of the new A55 road on Anglesey, two, Cefn Cwmwd and Cefn Du, produced several saddle querns and beehive rotary querns, while one, Melin y Plas produced only a saddle quern (Davidson *et al* forthcoming). The latter settlement was quite poorly preserved compared to the others and produced fewer finds so the absence of rotary querns may not be significant and the same may be the case at Parc Bryn Cegin. What was distinctive about these sites was the presence of a number of stone mortars at all of them, while none were found at Parc Bryn Cegin. Mortars were clearly important for food processing in a similar way to querns and at Pant y Saer (*op cit*) one was found *in situ* close to the saddle quern. The presence a range of mortars at the A55 settlements was suggested to be because of the introduction of new fashions of food or preparation as a result of Roman influence through involvement in the market economy. The lack of mortars at Parc Bryn Cegin could be because, as indicated by the Roman pottery, it had its peak earlier than the A55 settlements, and so was not flourishing and benefiting to the same degree from the market economy for agricultural products as were the settlements on Anglesey.

### **Spindle whorls**

463. (Fig. 67) From disturbed soil above roundhouse A, trench 3. Made from a selected flat pebble of decorative fine purple-red sandstone. Slightly chipped and ground to shape around the perimeter. The neatly central hole is 7mm diameter, parallel-sided and drilled.
471. (Fig. 67) From a drainage gully associated with roundhouse B, trench 3. Grey and burnt fragment, probably of lignite that may have originally been a more decorative black with some polish. The whorl has been broken across and split through its thickness along a natural bedding plane. The hole is 7mm diameter parallel-sided and drilled but slightly off-centre. However it may originally have been centre, the whorl later worn or damaged in use.
535. (Fig. 67) From a boundary ditch around the roundhouse settlement in trench 3. Made on a fragment split from a pebble of schist, which has natural lamina and has been chosen for its decorative banded appearance. It has one natural pebble face and one split face and has been carefully ground to shape although only part of this ground

edge remains, the rest being chipped in use. The neatly central hole is countersunk in profile showing it was bored rather than drilled, perhaps using a flint tip.

**Comment**

These three whorls are simple, common types used in the Late Iron Age and through the Roman period. Four comparable stone whorls were found nearby during the previous Llandegai excavations associated with the Iron Age and Romano-British occupation there (Lynch and Musson 2004, 103). Two of those were drilled and two were countersunk and two had slight decoration. Their main value is in showing the use of wool to produce threads and probably fabrics and therefore access to sheep products, in the absence of any direct bone evidence.

The whorls are quite plain although the stones used were in each case chosen for some decorative value by colour or texture and so they show some quality of manufacture and could have been produced by a craft specialist. This contrasts with whorls made on quite irregular fragments of local slate, such as those at Cefn Graeanog II (Kelly 1998, 42-3) and Bush Farm, Caernarfon (Longley *et al* 1998, 237), which were clearly not specialist products even though the latter (close to the fort of Segontium), seems to have been benefiting from the Romanized economy.

Three Iron Age sites in the Somerset Levels, Meare Villages East and West and Glastonbury Lake Village, have produced between them over 600 whorls providing a good overview of the range of types. Most were of stone but other materials used included bone, antler and baked clay. Meare Village East, occupied between the 3<sup>rd</sup> C BC and the early 1st C AD, produced some 190 whorls (Coles 1987, 157-68). These were of a variety of materials, mostly local limestone, mostly plain and of various sizes and cross-sections. Those of softer materials were all drilled but the stone was either drilled or, in the case of the harder stone, countersunk. Iron finds included a number of rods that might have been drills. There were also a considerable number of flints that seem to have been used or re-used on the site and have created considerable debate about the use of flint during the Iron Age. However, the flint assemblage did not include any drill or awl points that might have been used to countersink the holes in the stone whorls and the same was the case at Parc Bryn Cegin, amongst a number of flint objects recovered from the area of the roundhouse settlement.

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**Appendix VII.1**

**Table of petrology of worked stones compiled by David Jenkins**

SF	Context	Wt.	Sample	Petrology/morphology
135	1655	876g	Axe-shaped stone	Well rounded elongated pebble with random striae on surfaces. No obvious evidence of usage (e.g. terminal battering). Fine grained, buff, with small (1mm) clasts and occasional rounded vesicles.  Natural pebble of probable local origin (e.g. Snowdonia tuff?)

274	1596	430g	Possible hammer stone?	Well rounded elongated pebble but with well battered terminations and possible polish on one surface. Massive with a mesh of plagioclase laths and interstitial anhedral pyroxene and iron ores.  Typical dolerite (probably Snowdonian) with evidence of usage for battering and possibly polishing.
480	3116	1,810g	Fragment of quern stone	Angular buff coloured block with planar abraded/polished upper surface and curved lower surface. Poorly sorted sandstone with sub-angular quartz grains (1-12mm) with some pink quartz. Moderately porous with patchy fine white crystalline cement. Weak bedding parallel to main faces.  Orthoquartzite, probably basal Carboniferous, possibly NE Anglesey but lacking diagnostic features (c.f. 595, 682).
557	4141	4g	Stone	Sub-rounded stone with weathered Fe/Mn stained surface. A dense compact sandstone although some pelley structures suggesting volcanic origin.  Jenkins thinks this is a naturally abraded stone.
595	3000	1588g	Fragment of quern stone	Angular buff coloured fragment with planar polished upper surface and curved lower surface. Poorly sorted sandstone with sub-angular quartz grains (1-18mm), relatively massive with no obvious bedding.  Orthoquartzite, probably basal Carboniferous, possibly NE Anglesey but lacking diagnostic features (c.f. 480, 682).
682	2000	1408g	Quern fragment	Angular buff coloured block with curved lower surface and abraded, polished planar upper surface. Mostly fine-grained (0.5-1mm) sandstone with coarser (1-5mm) layer at upper surface. Mostly sub-angular quartz and possible rare jasper, i.e. bedding parallel to polished surface. Porous, moderately cemented only.  Orthoquartzite, probably basal Carboniferous, possibly NE Anglesey but lacking diagnostic features.
758	3002	133g	Polishing stone?	Sub-rounded elongated pebble with rectangular cross section. Hard dark bluish grey finely banded. Some edges show striations perpendicular/oblique to the edges.  A hard rock – possibly a local Snowdonian silicified tuff, and possibly used for polishing/honing.
789	9283	1502g	Quern fragment	Large fragment with an abraded/polished sub-planar surface and an outer curved surface. Coarse/medium sandstone and sub-rounded/angular quartz up to 16mm with possible jasper and platy carbonaceous material. Porous with partial interstitial white finely crystalline cement. Textural bedding perpendicular to slab.  A fragment of quern from shaped/abraded orthoquartzite of probable basal Carboniferous origin, possibly from NE Anglesey.
925	2131	200g	Daub/plaster-like material in fill 2098 with glass beads	Buff coloured (10YR6/3 'pale brown') aggregate of small gravel (5-20mm: well rounded to sub-angular with flakes of shale) in a loamy matrix with small (<5mm) irregular, soft, white calcareous fragments and some distinctly pinkish inclusions (e.g. 2.5YR6/6 'light red'). Weakly bonded, friable material with some surfaces showing shearing and fractures indicative of being smeared; some areas show pink pigmentation.  Probably fragments of daub including lime and possibly pigments.
1032	3676	53g	5 quern fragments?	Small angular varying grey fragments all with one abraded/polished planar surface. Fine/medium sandstone with 0.3-0.5mm sub-rounded quartz, occasional black iron-ore minerals and rare lithic grains. Massive with no obvious bedding.  Medium quartz sandstone, possibly Lower Palaeozoic/Cambrian? (c.f. 695, 1041)
1250	9314	36g	Quern fragment	An angular fragment with one abraded/polished sub-planar surface with some pink staining (due to firing?). Medium/coarse (1-3mm) sandstone, sub-angular/rounded grains, mostly quartz with occasional lithic (fine white rhyolite?) clasts. Massive with moderate porosity only.  Medium quartz/lithic sandstone, probably Lower Palaeozoic/Cambrian? (c.f. 694, 695, 1041, 1032).



## APPENDIX VIII: REPORT ON GRAIG LWYD LITHICS

John Llywelyn Williams

The assemblage is made of Graig Lwyd rock and a range of fine and coarse-grained fabrics are represented. The material is fresh and unweathered and fragments with adhering cortex or with developed alteration rims are very few in number. Most fragments show clean, sharp fracture surfaces similar to the material excavated at Graig Lwyd Site B rather than the heavily patinated assemblages from Site F (Williams and Davidson 1998).

### 1 - Graig Lwyd lithics within and outside the Early Neolithic Building

The lithics are divided into three groups.

#### *Group 1 – Lithics with polished surfaces*

These comprise 4 pieces, which range from the half fragment of a polished axe to a microflake. The material may be further divided into lithics within the building and those outside.

##### *Polished lithics outside the structure*

Included are the following –

From pit 1619: stone axe fragment (SF226, Fig. 15?) – (for material see appendix IX below). Burnt fragment in pit 4m west of building in association with Early Neolithic pottery sherds, flint and quartz fragments. (Note pit FB 151 in 1960 excavation was 5m S of Neo Building).

From pit 1729: flake (SF1097.1, Fig. 15) with polished surface (associated with unpolished reduction chip (SF1097.2) – cf. with similar unpolished reduction chips from within building, e.g. SF1226, 1292 etc). Flake SF1097.1 is a disk shaped example (L=45mm) removed from a polished object (axe?) with no further retouch. Vestigial flake scars observed on polished surface. Flake removed from a previously broken object to give a steep angled, faceted platform. The pit, which was c. 18m west of the building also contained 2 flint flakes, 1 microflake and some crumbs of pottery.

##### *Polished lithics within the structure*

Included are the following –

From post trench 1404: thinning flake (SF1037, Fig. 15) – thin, L=27mm with one polished surface (associated with unpolished microflake SF1224).

From posthole 1532: microflake SF1225 with polished surface associated with unpolished microflake SF1167 and burnt and broken fragment SF511.

#### *Group 2 – Unpolished lithics*

##### *Lithics outside the structure*

Included are –

From pit 1729: reduction chip (SF1097.2) associated with flake SF1097.1 above.

From pit 1647: c.23 microchips (SF1276) from pit c. 4m to NW of building (these were recovered through sieving and some are very small) in association with thin flake (SF1099) with cortex at distal end (L=37mm) with surface showing at least three earlier flake scars hinging against cortex. The latter is probably not Graig Lwyd rock.

From hollow 1669 containing relict soil/occupation deposit: SF871 – thin reduction flake struck transversely to length (flake width = 20mm; flake length = 37mm. Microflake SF1226, a small trimming/chip with angled platform identical with examples from outside building in pit 1729 (SF1097.2) and polished chip from within the building in posthole 1532 (SF1225).

##### *Lithics within the structure*

Lithics include -

Microflakes from posthole 1291 (SF1292), from post trench 1404 (SF1224), and from posthole 1532 (SF1167)– small trimming/chips with angled platforms identical with examples from outside building in pit 1729 (SF1097.2) and polished chip from within the building in posthole 1532 (SF1225).

Three reduction flakes, two from posthole 1406 (SF890) – narrow, thick, truncated reduction flake, triangular in section, and 85 – long, thin core trimming flake struck transversely to length (flake width =13mm; flake length = 43mm. One flake from posthole 1519 (SF1036), a truncated secondary reduction flake struck longitudinally.

From posthole 1532: a large, formless, reduction flake in 3 fragments (SF511); calcined with no apparent bulb; probably Graig Lwyd but await identification of axe fragment SF226 since both appear similar – probably because of being calcined.

### ***Group 3 – Non-Graig Lwyd lithics***

From pit 1619: a thick, truncated flake (SF116) with flake beds on upper surface on coarse grained rock - probably not Graig Lwyd (see addendum below).

## **2 - Graig Lwyd lithic assemblages from the later Neolithic pit groups**

### ***Pit Group I***

A series of six small pits comprise this group and in combination have produced the largest collection of Graig Lwyd lithics on site, numbering 36 pieces. They are associated with flint debitage, charcoal, hazelnut shells, burnt clay, burnt bone, burnt stone and Peterborough (Mortlake) sherds with additional residual Early Neolithic sherds in two of the pits. In general the lithics are made on a coarser textured facies of Graig Lwyd rock than the corresponding collection from within and in the vicinity of the Early Neolithic building. As a result flaking features, such as bulbs and bulbar scars, are not so well developed. The collection is divided as follows –

#### *1) Block and block fragments*

Included are - fragment SF2 (from pit 1027) (Fig. 28), which could be interpreted as an axe sharpening tranchet flake; fragment SF28.1 (from pit 1052), a thick, triangular sectioned, preliminary core reduction flake with convergent flake facets (L=7cm;W=5.5cm);

#### *2) Reduction flakes – struck transversely and longitudinally*

Included are - flake SF3 (from pit 1032), the best example in the collection of a secondary axe trimming flake struck transversely from a wide faceted platform with the ratio of width greater than length (W 6.5cm; L=3.2cm). Flake SF51.2 (from pit 1049), a transverse reduction/thinning flake; flake SF28.2 (from pit 1052), an example of a truncated secondary reduction flake struck longitudinally; and a small reduction chunk (SF1043) from pit 1027.

#### *3) Thinning/trimming flakes*

Included are - flake SF793.1 (pit 1027) example of large (L=57mm, W=35mm) thinning flake struck longitudinally; flakes SF24.1 (pit 1049), SF66.2 and SF66.3 (pit 1258) examples of thin thinning flakes.

#### *4) Trimming flakelets and chips*

Included are –

Flakelets – from pit 1049: SF24.2-4 and SF51.3; from pit 1052: SF28.3 (Fig. 28); from the relict soil context 1156: SF59.1; from pit 1027: SF793.2, and SF1043.2.

Chips – from pit 1321: SF72.1-2; from pit 1049: SF1042.2-7, and from pit 1258: SF1279.1-3.

#### *5) Thinning flakes/flakelets with polished surfaces*

Included are a group of six examples- flakes SF24.1 (Fig. 28), SF51.1, SF1042.1 (Fig. 28) and flakelet 798 from pit 1049, flake SF66.1 from pit 1258, and flake SF70 from pit 1321. The flakes vary in length between 40mm to 35mm and have been struck from simple striking platforms to produce longitudinal flakes that are either disk shaped or ‘blade’ shaped. Two disk- shaped flakes (SF51.1 and SF70 (Fig. 28)) represent the first removals from an object with a polished surface and in the other three examples partial remnants of the polished surface remain following removal by earlier flake facets. A manganese oxide concretion has formed on the surface of a number of flakes. Flakes with secondary retouch are not present.

### ***Pit Group III***

The group comprises three pits that contain sherds of Fengate pottery, flint debris, quartz, charcoal, hazelnut shells and 5 examples of Graig Lwyd rock debitage. Of the latter one fragment is a truncated, longitudinally struck thinning flake (SF1107, from pit 4092); one a small trimming flake (SF1369 from pit 4069); and the remainder are three microchips (SF1131 from pit 4092). Polished surfaces are not observed in the group.

### ***Pit Group V***

The group consisted of two widely separated pits one of which produced one flaked, unpolished chip of Graig Lwyd rock (SF1297) in association with Fengate pottery, flint, charcoal, hazelnut shells and burnt bone.

### ***Pit Group VI***

The group includes 10 pits divided into three sub-groups. One isolated pit and a pair of pits contained Fengate pottery, whilst a group of seven pits included one pit with a quantity of Grooved Ware sherds. Several of the pits also contained flint tools, charcoal and hazelnut shells. Four fragments of Graig Lwyd rock were deposited in two of the pits containing Fengate pottery. Pit 6072 produced a large (L=45mm, W=43mm), rectangular, truncated, reduction chunk displaying numerous flake removals on both faces (SF 1033). Pit 6034 contained a narrow thinning flake

retaining a small portion of cortex (SF1035.1) and two microchips (SF1035.2-3). These were associated with a thin tabular flaked fragment of a fine-grained slate? (1035.4). Examples with polished surfaces are not present.

### ***Pit Group VIII***

The group comprised of six pits placed in a rough oval arrangement and lying to the south west of the Early Neolithic building. Two fragments of Graig Lwyd rock were identified along with two flakes with an unidentified geological provenance (see appendix IX for analysis).

Fragment SF113 (Fig. 34) is a roughly rectangular fragment (L=45mm; W=45mm), with a part polished surface, which is a remnant of a larger object that has been forcibly broken. The polished convex side and a small portion of the (upper?) polished surface remain, but two large flakes have removed the greater part of this surface; a transverse single fracture has truncated all the dorsal face of the object. Fragment SF113 was associated with Grooved ware pottery in pit 1553 that also included quartz, charcoal and hazelnut shells.

Flake SF1341 (Fig. 34) is a large (L=43mm, W=30mm), oval shaped, first removal from an object with an irregular ground or polished surface; the flake has a steep angular platform. The flake was associated in pit 1596 with flint debitage, quartz, charcoal, and hazelnut shells, but no pottery.

The two flakes of undetermined provenance are interesting because they are the only retouched examples in the whole site sample in addition to having small attachments of cortex. Specimen SF1346 (Fig. 34) is a poorly constructed side scraper on a thick, cortex bound flake and is associated in pit 1305 with featureless sherds, flint, charcoal and hazelnut shells. Specimen SF109 (Fig. 34) is a thin shaping flake with slight retouch and was present with axe fragment SF113 in pit 1553.

### **Discussion**

The assemblage is interesting since the debitage represents a flake destruction rather than a flake construction sequence. Identifiable axe flaking debitage is sparsely represented, accounting for circa 7% of the sample, and when present is exemplified in single examples of primary mass reduction flakes. Thinning and secondary shaping flakes, characterised by their thinness and curved profiles, are noticeably absent, as are spalls and trimming chips which share similar typological properties. The presence of an axe-sharpening flake may be entirely fortuitous and the specimen is open to typological reinterpretation. The evidence would suggest that axes were not flaked on site.

The destruction sequence is well documented and consists of specimens that span all three of the identified typological categories. Thinning flakes, generally of formless type, but retaining remnants of a polished surface, represent the dominant class of evidence. This is supported by a single flakelet with a polished surface but the most significant fragment is the remnant core (SF113, Pit Group VIII) of a polished axe which is the likely source of some, but not of all, the thinning flakes. The reduction of such laboriously finished objects, as well as un-flaked nuclei, was undertaken on site as the destruction sequence indicates, but this was not seemingly done for any utilitarian purpose. Not a single Graig Lwyd debitage flake at Parc Bryn Cegin has been retouched to form a serviceable tool although, potentially, Graig Lwyd stone offers a convenient and plentiful source that could be exploited locally. Indeed, throughout the Neolithic of north western Wales the debitage of axe making was not used for this purpose in preference to utilising flint, a foreign and thus much more exotic commodity. It should be noted that the two flakes from another source were retouched, and may not be related to axes or other polished tools.

In conclusion it appears that Graig Lwyd polished axes, and axe making debitage was brought presumably from the area of the type source, to Parc Bryn Cegin, where it was systematically disaggregated and the resultant flaked assemblage buried in a series of pits. This act appears not to have been undertaken for any domestic/utilitarian purpose, but may be considered as a further example of the ritual fragmentation of a highly valued commodity, a phenomenon that has been identified elsewhere in the Neolithic of Britain.

Williams, J. Ll. and Davidson, A., 1998. 'Survey and excavation at the Graiglwyd Neolithic axe-factory, Penmaenmawr', *Archaeology in Wales* 38, 3-21.

### **Addendum**

All the lithics with a provenance identification query have been submitted to Dr Brinley Roberts on 19. 11. 06. His report follows a macroscopic identification with a hand lens and he could be more specific if higher magnification had been available.

Fragment SF868 – From the surface of the fill of post-medieval ditch 6091. Lower Palaeozoic erratic with poorly developed cleavage – silica cemented hornfels or devitrified rhyolite. Block showing excellent ice striations on one face and picked from the drift and flaked. Not Graig Lwyd and not an axe preform in its present condition but may have been considered as a possible block for making an axe before being abandoned.

Flake SF1035, Pit 6034, Pit Group VI - Lower Palaeozoic rock with definite cleavage, but not Graig Lwyd.

Flake SF1099, Pit 1647, adjacent to the Neolithic building – flake with definite cleavage but not Graig Lwyd.

Flake SF116, Pit 1619, adjacent to the Neolithic building – Not Graig Lwyd but possible microgranite or crystal tuff, similar to Padarn Tuff. Flake truncated, in similar manner to many of the Graig Lwyd flakes from the assemblage, and showing flaked dorsal surface.

Flake SF1107, Pit 4092, Pit Group III – probable Graig Lwyd flake

## APPENDIX IX: PETROLOGICAL ANALYSIS OF THE STONE AXE AND TWO FLAKES

Heather Jackson

### **The stone axe**

The axe was sliced to create a polished sectioned at the National Museum of Wales and the resulting thin section is described below. The thin section is currently held in the Archaeopetrology Collection of the Department of Geology, National Museum of Wales (accession number not yet ascribed).

### ***Petrological Description***

The axe (Fig. 15?) is made from a fine-grained (0.05-0.15mm) silicic tuff. It has a partially recrystallised silicic matrix, which constitutes 60% of the sample, and occasional larger crystals of anhedral quartz and plagioclase feldspar, 0.10-0.15mm in size. Minor chlorite and biotite are also present, as are lithic fragments containing biotite and quartz. Lithic fragments of this nature are not usually found in a silicic tuff, so they could indicate partial reworking of the tuffitic material. There is no evidence of any welding textures. The tuff also contains a small percentage of secondary sphene (titanite) and sericite, and patches of iron oxide measuring up to 0.15mm across, which could not be further identified.

### ***Provenance***

Unfortunately the provenance of this axe cannot be attributed with confidence, as there are many different locations from which Ordovician volcanic tuffs such as this may derive. It does not fall clearly within any of the known Neolithic axe groups.

### **The flakes**

Two flakes (Fig. 34) excavated at the Parc Bryn Cegin site were supplied to the National Museum of Wales for analysis, by the Gwynedd Archaeological Trust. These were examined visually and analysed by X-ray diffraction using a Panalytical XPERT Pro X-ray diffractometer.

### ***Visual Description***

#### *Flake 1346*

This flake is light greenish grey in colour with small (0.1mm) black encrustations of manganese on its surface. It has a 2.5mm white silica weathering crust and its surface is dotted with infrequent maroon patches up to 0.6mm across, which derive from the alteration of ferromagnesian minerals. The matrix is predominantly cryptocrystalline, although a few small (0.5mm) weathered laths of feldspar are visible.

It is texturally a fine grained quartz-rich volcanic rock such as a feldspar-phyric rhyolite or quartz-feldspar tuff.

#### *Flake 109*

This sample is a light greenish grey igneous rock containing quartz and feldspar. It has a white, 2mm thick silica weathering crust on one edge. The flake surface is scattered with infrequent irregular maroon blotches which range from 0.6mm to 2mm in size and have derived from the weathering of ferromagnesian minerals. This sample is richer in feldspar than Flake 134.6 and weathered laths of up to 0.5mm are visible on its surface.

Its macroscopic appearance suggests that it is a feldspar-phyric rhyolite or feldspar rich silicic tuff.

### ***X-ray diffraction***

Well defined peaks above background were present for both samples. These were matched with the database of known minerals and a match was found with quartz, albite and clinocllore. Quantitative analyses of the percentages of each mineral were not made, but semi-quantitative estimates of the percentages of measured minerals within each sample were. These estimates are not sufficiently accurate for detailed comparison with other samples, but suggest that the two flakes have a chemically similar composition.

#### *3.1 Flake 1346 (NMW x-1970)*

Figure 1 shows the main peaks identified from the collected diffraction pattern for Flake 134.6. Details of the parameters under which this sample was run are presented in Appendix 1. A semi-quantitative estimate of the proportions in the sample suggests that this flake is approximately 44% quartz and 56% albite. This is consistent with it having a volcanic origin.

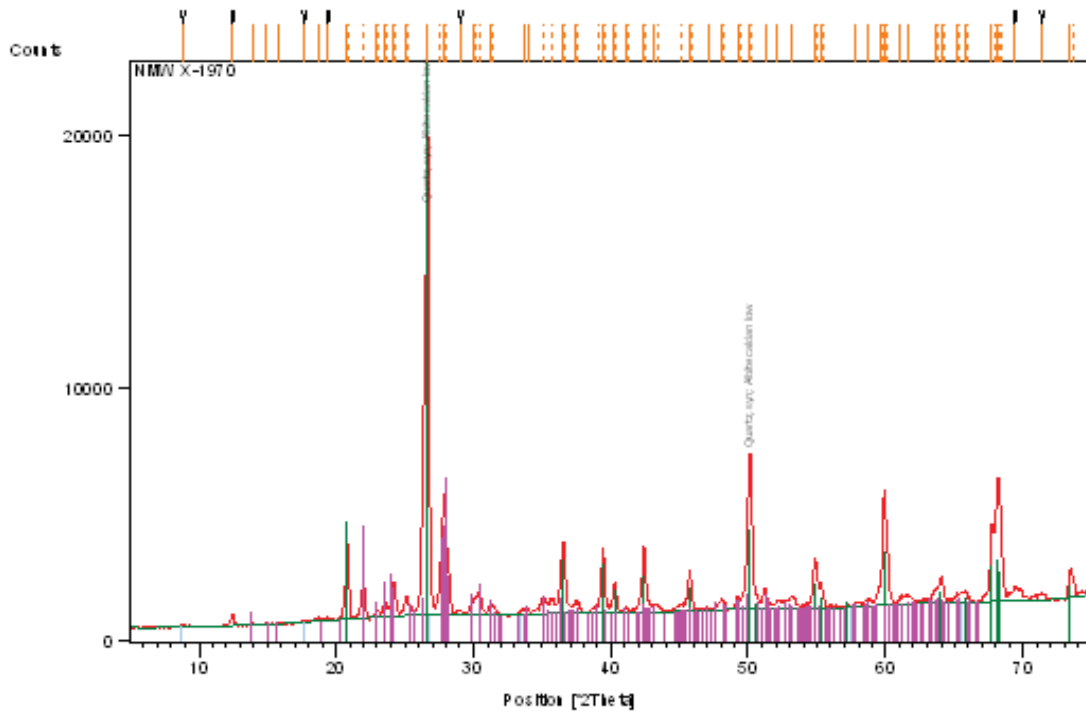


Figure 1: Diffractogram of X-ray peaks for Flake 134.6 (NMW sample x-1970)

*Flake 109*

Figure 2 shows the main peaks identified from the collected diffraction pattern. Details of the parameters under which this sample was run are presented in Appendix 2. A semi-quantitative estimate of the proportions in the sample suggests that this flake is approximately 72% quartz, 18% albite and 10% clinocllore.

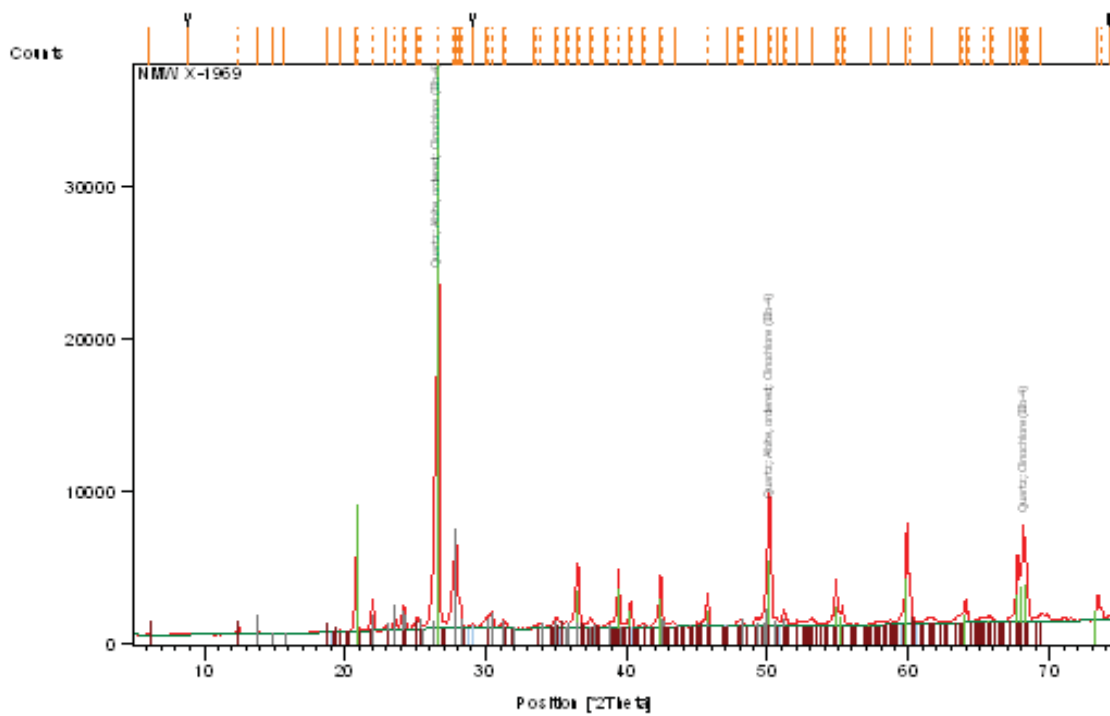


Figure 2: Diffractogram of X-ray peaks for Flake 109 (NMW sample x-1969)



Despite the apparent differences in these percentages, the traces are sufficiently similar to suggest that both flakes originally came from the same source.

### ***Comparison with other material***

The flakes from Parc Bryn Cegin were compared visually and by X-ray diffraction with items from Mynydd Rhiw Axe factory, as they appear very similar to material from this site. The composition of Mynydd Rhiw rock, when analysed semi-quantitatively, is approximately 57% albite, 44% quartz, when only these minerals are detectable. It may also contain 6% - 13 % clinocllore (in which case the percentage of quartz is adjusted accordingly). Flake 1346 therefore falls comfortably within this range and could derive from Mynydd Rhiw on the basis of its detectable mineralogy. However, Flake 109, despite containing the same minerals as those detected in Mynydd Rhiw samples, does not have them in the usual proportions. Semi-quantitative analysis is not a particularly accurate method for comparing percentages of constituents, so this alone does not discount an origin on Mynydd Rhiw for this flake.

The flakes were also compared visually under the binocular microscope with flakes from Mynydd Rhiw and Graig Llwyd. Flake 1346 appeared similar to material from Mynydd Rhiw, with the exception of the visible feldspar which has not previously been noted from this site. Flake 109 appeared less similar to Mynydd Rhiw material, partly as a result of having more visible feldspar and partly due to the presence of maroon weathered pyroxenes. Neither flake appeared similar to the material examined from the site at Graig Llwyd, as both flakes are finer grained and greener in colour than the Graig Llwyd material.

### ***Conclusions***

X-ray diffraction traces suggest that these flakes are compositionally similar to material from Mynydd Rhiw, but the textural and mineralogical features observed in the samples do not confirm this as the source. As North Wales contains many examples of silicic rocks which could share the chemical composition of the Mynydd Rhiw rock, unless examples which share the visual characteristics of these flakes are found amongst excavated Mynydd Rhiw material, it would seem most likely that these flakes originally derive from another North Wales source.

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## **Appendix IX.1**

### **Anchor Scan Parameters for Flake 1346**

Dataset Name:	NMW X-1970
File name:	C:\X'Pert Data\Geology\XRD Log\NMW X-1970.xrdml
Sample Identification:	G1857 1346
Comment:	Flake, Graig Llwyd, possible Mynydd Rhiw material Configuration=MPSS Vertical system, Owner=User-1, Creation date=9/8/2005 1:13:35 PM Goniometer=PW3050/60 (Theta/Theta); Minimum step size 2Theta:0.001; Minimum step size Omega:0.001 Sample stage=MPSS (vertical system); Minimum step size Phi:2.5 Diffractometer system=XPERT-PRO Measurement program=NMGW, Owner=User-1, Creation date=10/10/2005 11:58:10 AM
Measurement Date / Time:	3/3/2008 11:59:11 AM
Operator:	National Museum
Raw Data Origin:	XRD measurement (*.XRDML)
Scan Axis:	Gonio
Start Position [ $^{\circ}$ 2Th.]:	5.0084
End Position [ $^{\circ}$ 2Th.]:	74.9634
Step Size [ $^{\circ}$ 2Th.]:	0.0170
Scan Step Time [s]:	27.1365
Scan Type:	Continuous
PSD Mode:	Scanning
PSD Length [ $^{\circ}$ 2Th.]:	2.12
Offset [ $^{\circ}$ 2Th.]:	0.0000
Divergence Slit Type:	Automatic
Irradiated Length [mm]:	10.00
Specimen Length [mm]:	10.00

Measurement Temperature [°C]: 25.00  
 Anode Material: Cu  
 K-Alpha1 [Å]: 1.54060  
 K-Alpha2 [Å]: 1.54443  
 K-Beta [Å]: 1.39225  
 K-A2 / K-A1 Ratio: 0.50000  
 Generator Settings: 30 mA, 40 kV  
 Diffractometer Type: 0000000000008943  
 Diffractometer Number: 0  
 Goniometer Radius [mm]: 240.00  
 Dist. Focus-Diverg. Slit [mm]: 100.00  
 Incident Beam Monochromator: No  
 Spinning: No

## Appendix 2

### Anchor Scan Parameters for Flake 109 (NMW x-1969)

Dataset Name: NMW X-1969  
 File name: C:\X'Pert Data\Geology\XRD Log\NMW X-1969.xrdml  
 Sample Identification: G1857 109  
 Comment: Worked stone (flake) Graig Lwyd, possible Mynydd Rhiw material  
 Configuration=MPSS Vertical system, Owner=User-1, Creation date=9/8/2005  
 1:13:35 PM  
 Goniometer=PW3050/60 (Theta/Theta); Minimum step size 2Theta:0.001;  
 Minimum step size Omega:0.001  
 Sample stage=MPSS (vertical system); Minimum step size Phi:2.5  
 Diffractometer system=XPERT-PRO  
 Measurement program=NMGW, Owner=User-1, Creation date=10/10/2005  
 11:58:10 AM

Measurement Date / Time: 3/3/2008 10:12:55 AM  
 Operator: National Museum  
 Raw Data Origin: XRD measurement (\*.XRDML)  
 Scan Axis: Gonio  
 Start Position [°2Th.]: 5.0084  
 End Position [°2Th.]: 74.9634  
 Step Size [°2Th.]: 0.0170  
 Scan Step Time [s]: 27.1365  
 Scan Type: Continuous  
 PSD Mode: Scanning  
 PSD Length [°2Th.]: 2.12  
 Offset [°2Th.]: 0.0000  
 Divergence Slit Type: Automatic  
 Irradiated Length [mm]: 10.00  
 Specimen Length [mm]: 10.00  
 Measurement Temperature [°C]: 25.00  
 Anode Material: Cu  
 K-Alpha1 [Å]: 1.54060  
 K-Alpha2 [Å]: 1.54443  
 K-Beta [Å]: 1.39225  
 K-A2 / K-A1 Ratio: 0.50000  
 Generator Settings: 30 mA, 40 kV  
 Diffractometer Type: 0000000000008943  
 Diffractometer Number: 0  
 Goniometer Radius [mm]: 240.00  
 Dist. Focus-Diverg. Slit [mm]: 100.00  
 Incident Beam Monochromator: No  
 Spinning: No

## APPENDIX X: MICROWEAR ANALYSIS OF THE FLINT ASSEMBLAGE

Jolene Debert

### 1. Methods

The assemblages from the Early Neolithic building and mid and late Neolithic pit groups were inspected. All the flints were examined and their basic characteristics described; the results are given in appendix X.1. Only those flints that appeared to contain microwear or stereotypical traces of heat exposure were sent to SEM. The presence of usewear was determined through the examination of the flint's surface with a 10x hand lens. The usewear of each lithic tool is recorded by location (proximal or distal end, left or right lateral side, ventral, dorsal or bifacial surface) and by part of that section (body, edge, ridge, depression or arris). The type of usewear is described as (1) microchipping, i.e. small flakes removed during use not exceeding 5mm (Kooyman 2000); (2) polish, i.e. a general smoothing and removal of topography, caused by abrasion (Andrefsky 1998); and (3) striations i.e. linear scratches caused by abrasion (Kooyman 2000). Microchipping was recorded as step or feather terminating, transverse, perpendicular, isolated or grouped; polish, as fully or partially developed or rounded; and striations as perpendicular, parallel or transverse to the edge deep or shallow and isolated or grouped.

#### 1.1 Scanning Electron Microscopy (SEM) & Environmental Scanning

Electron Microscopy (ESEM) SEM and ESEM are micro-analytical techniques that use electron diffraction to image and analyse materials not observed with the resolution offered by conventional visible techniques. The operation of these instruments is identical; the only difference is the environment in which the sample is housed. The sample chamber in a standard SEM is a high-pressure gas-free vacuum (Potts et al. 1995).

This enables the electron beam to impact the sample without losing resolution or diffracting. However, to keep the sample from charging (taking on a negative charge) when expose to the electron stream, the sample must be coated with a non-charging material (gold, carbon and/or palladium). Whereas, with ESEM the vacuum is set lower allowing the introduction of water vapour; this vapour neutralises any charging on the sample's surface and the higher-powered electron beam is not interrupted so the sample is left uncoated. In both techniques an electron beam is scanned across the surface of the sample. When the electrons made contact with the surface, secondary electrons are released. These are picked up by a detector which consists of a scintillator that emits light when it was hit with the electrons and a photo multiplier that picked up the light signal and produces an amplified electrical output (Knutsson 1985, Potts et al. 1995). Collection of these secondary electrons produces the 3D topographic images.

Additional analysis involves the identification of the elements (e.g., silicon, iron, etc) of which the specimen is composed. Both techniques have similar limitations to this compositional analysis. Elements lighter than atomic number 8 (oxygen) cannot be measured in SEM and the ratio of the detectable elements is often skewed by the high quantity of metallic coating. ESEM is slightly more sensitive identify up to and including the atomic number 6 (carbon) and without the coating the spectrum produced is un-skewed representing the composition of the sample alone. However, this level of analysis was not applied to the Llandygai collection.

The microwear analysis was preformed using SEM for 19 flints and ESEM for 2 flints. The flints selected for microwear analysis were washed with soap and water, then double distilled water and finally acetone. The acetone was necessary to kill any organics as well as to dry the samples before mounting and coating. Samples were mounted onto individual aluminium stubs. Carbon tape was used to attach the lithics to the stubs. The samples 1-19 were coated with gold under a vacuum before being placed inside the vacuum-sealed chamber of the SEM. This coating, the disk and the adhesive must all be non-magnetic, to prevent "charging" which causes electron scatter (Knutsson 1985). Samples 20-21 were again mounted using carbon tape but left uncoated.

### 2. Lithic Analysis Results

#### 2.1 Flints from the Early Neolithic Timber Structure

To simplify the discussion of the flints found in association with the Early Neolithic timber structure, they have been divided into two, those found in the interior and those found outside the structure.

##### 2.11 Interior of the Structure

Sixteen flints of diagnostic size were recovered from the interior of the structure. Small flake fragments were also recovered and are included in table X.1 (appendix X.1). The majority of the larger flakes were found in post packing, posthole fill or pit fill. Fourteen of the sixteen larger flakes were retained and identified to either their stage in manufacture or lithic flake type. There were only two pieces representing the primary stage of manufacture: one split nodule and one piece of shatter. There were four flakes from the secondary stage: two secondary flakes and two shaping flakes. Three blades or microblades were recovered, two with usewear. Of the more formal retouched tool classes two scrapers and a broken projectile point were found but were not available for analysis. The only formal tool that was analysed for microwear was a spokeshave.

There is some evidence of other Early Neolithic timber structures being burnt down after use; the flints were examined for traces of exposure to heat; 54.5% show evidence of heating. However, until experiments are run to see

the extent of burning in different situations, it remains unclear if these flints were subjected to heat before or after deposition.

### *2.12 Exterior of the Structure*

The eleven flake collection sites from the exterior of the structure yielded four flakes of diagnostic size (table X.2). Regarding the stages of manufacture, one piece of shatter represents the primary stage of production. One secondary flake and one blade were also collected. An additional, secondary flake was reworked into a hafted scraper. The flints found both inside and outside the structure were recovered from postholes, pits and stakeholes. Interestingly, the flints from the exterior of the structure show a similar amount of heating, 46.6%, to those found in the interior of the structure.

### *2.2 Pit groups*

Fourteen flints were studied from pit group 1, three of which were burnt. A considerable number of flints were found in the pit group 2, the majority being flake fragments. The primary stage of manufacture could be represented in the nodule recorded during excavation; though this was not included in the analysis collection. There are two flakes from the secondary stage of manufacture: one shaping and one thinning. One finishing flake and a snapped blade both without usewear suggest that the final stage of manufacture was located somewhere in the area. Only one utilized piece was found: a shaping flake, which was included in the microwear analysis. There is only one set of flake fragments that suggests exposure to heat and these were not included in the analysis collection and thus their heat exposure cannot be confirmed.

In pit group 3 the lithics excavated were quite broken with only one flake being identifiable to the secondary stage of manufacture. Five of the thirteen flints collected showed evidence of heat exposure. However, only two of these five were included in the analysis collection and therefore, the inclusion of the other flints are based on the excavators' records of burn traces on the flint fragments. From pit group 4 the lithics collected included three pieces of primary shatter, one shaping flake from the secondary phase of manufacture, two blades, one snapped and a scraper. Only the scraper contained retouch and usewear and was retained for the microwear analysis. The lithics from pit group 5 comprised flake fragments with only one unbroken flake, therefore, no flints from this group were examined with SEM for microwear.

Pit group 6 contained a rather large lithic collection compared to other pit groups. In total 61 separate bags, often with multiple pieces were collected. The primary stage of manufacture is represented in two split pebbles, and four pieces of shatter. The secondary lithics include five shaping flakes. Two finishing flakes show possible tool manufacture in the area. Two micro blades, one blade, two snapped blades, four scrapers including one that was hafted, are the finished products found in pit group 6. Only two flakes and some fragments came from pit group 8, one flake was burnt.

### *2.3 Miscellaneous*

Some of the flints studied came from other features including two burnt mounds and an earth oven at various locations across the site. These pieces were selected for study due to being particularly fine pieces.

## **3. Microwear Analysis Results**

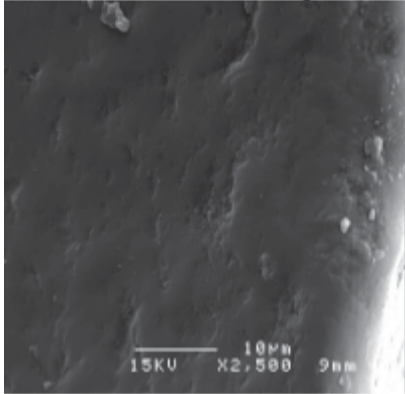
### *3.1 Early Neolithic Timber Structure*

Six flints that were associated with the early Neolithic timber structure were selected for microwear analysis. A small tan flint blade found in the upper fill of a partition post in the east of the structure was labelled sample 1 (1369.73). A tan flint spokeshave found in the packing fill of one of the main aisle posts was sample 2 (1389.1238). Sample 3 (1725.156) was collected from a gully west of the structure and was a haftable scraper. Sample 4 was a grey flint blade found in the postpipe fill of one of the main aisle posts (1405.83). A grey flint blade from the secondary fill of a postpipe on the main aisle posts was sample 5 (1569.513). Sample 6 (1703.924) was a secondary flake from the secondary fill of a posthole, the first of a line of three west of the structure.

#### *3.11 Sample 1 (SF 73)*

Sample 1 was selected for its lateral edge gloss. When examined with SEM the gloss was confirmed. The lateral edges on both the ventral and dorsal sides show considerable polish and contained a high number of striations. The two lateral edges show similar wear but the development of polish is far greater on the left lateral edge, when defined dorsally. Both the ventral and dorsal surfaces on the left edge were examined in depth. On the left ventral lateral edge gloss extends 40um from the edge (Figure X.1). Transverse striations are found within 60 um of the edge. Rounding and polish of topographic highs continues for 70 um from the edge. Similar usewear was seen on the dorsal surface.

**Figure X.1: Ventral surface, Left lateral edge**

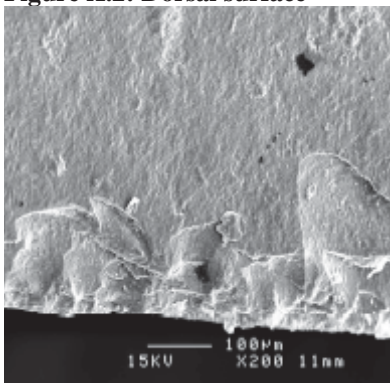


The right lateral side contained the same usewear as the left except that it was poorly developed. The gloss extended only 5 µm from the edge. Polish continues in patches for another 20 µm from the gloss, and transverse striations were found within 40 µm of the edge. This suggests that the right lateral side was used in the same ways as the left side, though it was used less intensely and/or for a shorter period of time. On the proximal end there appears to be a hafting area. This area was visible during the initial examination and was confirmed during the microwear analysis. The hafting area contained considerable levels of microchipping, creating a rough texture, which greatly contrasted with the nearby polished regions. There was some minimal rounding of topographic highs, but these were limited to small areas of the haft area, suggesting that these were the areas that contacted the haft material. Overall, only one side of the flint contains the extreme levels of wear often seen in sickle type use. The body of the tool contains little wear and the gloss is visible at the macroscopic level on this edge. This suggests that one side of the tool was used less than the other. This of course remains to be confirmed with experimental work. Nonetheless, it is clear that sample 1 was a micro blade used to cut plant material of some type, as the microwear is a kind of sickle gloss (Juel Jensen 1985, Andrefsky 1995).

### 3.12 Sample 2 (SF 1238)

Sample 2 is a spokeshave made of a caramel or tan coloured flint. The edge angle of the unifacial concave scraping area ranged between 52 and 53 degrees; which 9 are somewhat acute for scrapers but within the range for spokeshaves (Kooyman 2000). The dorsal surface was examined as only one edge can generally be seen when using SEM. The scraping surface clearly shows retouch and then within these scars are much smaller microchipping scars. The microchips are chained, that is they are continuous across the edge. The flakes appear to have been initiated on the ventral surface at a perpendicular angle in the centre and then generally angling out along the curved sides of the scraping surface (Figure X.2).

**Figure X.2: Dorsal surface**



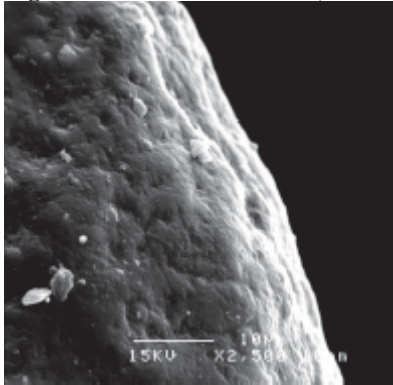
There are a few isolated striations on the dorsal surface. These striations display similar configuration to that of the microchips, perpendicular at the centre of the edge and transverse on the curved sides. There are some areas of polish on the very edge of the dorsal scraping surface and a general rounding just off the edge. However, the majority of the polish is found on the edge surface between the ventral and dorsal surfaces. This suggests that the area of contact is between the two surfaces, meaning the scraper was used in a bi-directional mode. This was confirmed when the ventral edge was examined and confirmed as having a similar microchipping pattern to that of the dorsal surface.



### 3.13 Sample 3 (SF 156)

Sample 3 is a secondary flake that has been reworked into a haftable scraper. This expedient tool is composed of pink flint. The pink colour of the flint is probably natural and not the result of exposure to heat, as there are no other secondary heat characteristics present. Sample 3 is unifacial with a retouched distal end (scraper edge) and a retouched proximal end (haft end). The scraper edge has an angle ranging from 87-92 degrees, which is well within the expected range for scraper edges (Kooyman 2000). The scraper edge was examined with SEM. There was some polish development on the topographic highs immediately around the edge on both sides. These areas are isolated and become rounding at about 1mm from the edge. Within these areas there are some transverse and perpendicular striations usually not in groups of more than 3 (Figure X.3).

**Figure X.3: Ventral surface, Distal end**

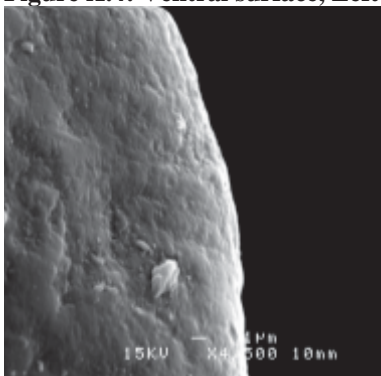


The haft area was minimally retouched and formed a tanged haft. The area around the haft had minimal usewear. The microwear included isolated microchipping. These microchips were taken off at a transverse and seemingly random orientation. There was minimal rounding on some of the topographic highs left behind by the retouch. This could possibly be a result of post-depositional damage or wear due to proximity of the area to the haft.

### 3.14 Sample 4 (SF 83)

Sample 4 is a grey flint blade, initially suspected of being a sickle blade. The termination of this unifacial blade is broken, while the proximal end is intact. When the dorsal side is in an upward position the right lateral edge has edge angles ranging from 33-36 degrees, and the left from 35-41 degrees. These edge angles are within the expected range for sickles and knives (Juel Jensen 1985, Andrefsky 1995). Both lateral edges contain similar usewear and so will be described together. Along the edge there is a band of polish that in some areas appears to form a gloss, and has completely removed all topography. 10-15  $\mu\text{m}$  away from the edge the polish is restricted to topographic highs and rounding is found in between. After 20  $\mu\text{m}$  rounding of high areas and relatively untouched low areas is seen and continues until the rounding dissipates to the natural rough texture of the material in the body of the tool about 15  $\mu\text{m}$  further. The polished areas also have parallel and transverse striations, often grouped (Figure X.4).

**Figure X.4: Ventral surface, Left lateral edge**



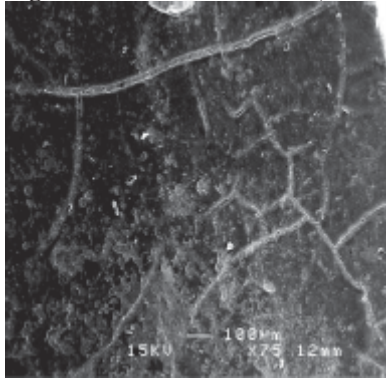
The haft area of the tool contains very few microchip scars, and very minimal retouch. Instead there is an abnormal amount of rounding, including those of high and low topography. In the areas of ridges and edges there is some development of isolated spot polish that is connected to other areas of polish by rounding. This suggests that there was considerable movement of the flint within the haft or that the flint was subjected to a post-depositional process that eroded its surface. This latter explanation can be eliminated, as the body of the tool, which should be exposed to the same process, remains relatively unworn.



### 3.15 Sample 5 (SF 513)

Sample 5 was a grey irregular flint blade. This piece was examined for microwear on the lateral sides and for exposure to heat. Under microscope examination the edges contained no usewear. Instead, the entire body of the flint contains similar microwear patterns. The surface of the flint was considerably rounded with a great reduction of original topography and with the polished areas often chained. Only the extremely low-lying areas were untouched. Several shallow steep sided pits were found. The dominant feature was cracking. These are found over the surface especially in areas of minimal topography (Figure X.5). The cracks formed acute and right angles with each other. Interestingly, these cracks were not visible at the macroscopic level, but could still represent what is normal termed crazing. Crazing is the cracking of the surface of flint, caused by escaping interstitial water vapour when flint is exposed to heat. Therefore, with the increased lustre, which is visible microscopically as surface polish, pits and the microscopic crazing, it is likely that sample 5 was exposed to heat.

**Figure X.5: Ventral surface, Left lateral edge**



### 3.16 Sample 6 (SF 924)

Sample 6 is a tan secondary flint flake originally thought to have been used as a hafted knife. However, when examined with SEM no microwear was found to support this conclusion. The haft area was devoid of microchipping and rounding. The suspected knife-edge showed no rounding, polish or striations normally found with cutting wear; instead it showed a random mixture of macro and microchipping suggestive of normal edge damage.

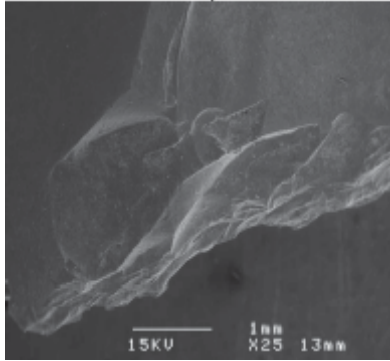
## 3.2 Pit Group 1

Three flints from pit group 1 were examined for microwear using SEM. These were numbered samples 10 through 12. Sample 10 was 1051.29, sample 11 was 1033.67 and sample 12 was 1048.25. All three samples were selected for their suspected microwear as none of them appear to have been exposed to heat. This pit group was dated to the Mid Neolithic, given their association with Mid Neolithic pottery a claim that was later confirmed with two radiocarbon dates (Kenney & Davidson 2006).

### 3.21 Sample 10 (SF 29)

Sample 10 is a light brown/grey flint blade with minimal retouch to the distal end. The distal edge angle is approximately 45 degrees. The distal area was the focus of the microwear examination. There was angular microchipping across the used edge, which was contained within the large retouch scars, suggesting that the pattern was from use and not manufacture (Figure X.6). At great magnification polish was visible at the very edge of the tool. Within the blanket of polish there were groups of striations running parallel to the edge. This usewear was confined to an area less than 2mm from the edge. This usewear is consistent with a cutting motion, suggesting that sample 10 was a minimally retouched expedient knife.

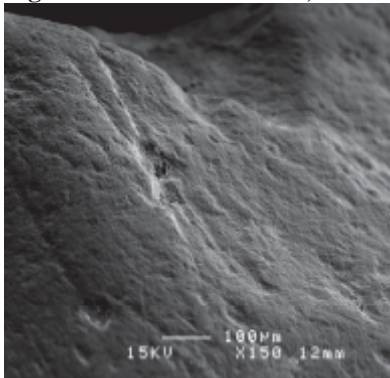
**Figure X.6: Dorsal surface, Distal end**



### *3.22 Sample 11 (SF 67)*

Sample 11 was composed of black chert or in all likelihood a silicified mudstone, though a thin section would be necessary for the determination. There is a considerable amount of retouch along the edges of this unifacial scraper. The use edge itself appears to have broken during use, been retouched and then used again. The edge angles support this hypothesis. The edge angles on the unbroken area are about 70 degrees in the area of resharpening the angles are about 110 degrees. This hypothesis, as well as, its use as a scraper was tested with microscopic examination. SEM found that the scraper edge contained considerable wear. The scars from retouch were considerably polished and extended in large interconnected areas for a considerable distance off the edge. In the polish groups of striations perpendicular and parallel to the edge were found (Figure X.7). There was little to no microchipping on the dorsal edge surface suggesting the material scraped was soft. The resharpening area showed similar though less developed wear to that on the older surface.

**Figure X.7: Dorsal surface, Distal end**



A hafting area was found in the proximal area of the tool. This area contained classic well-developed haft wear (Keeley 1982). This microwear included isolated microchips, spot polish and rounding of topographic highs. The well developed haft wear, scraper wear as well as having been resharpened, suggests that this tool was in use for a considerable period of time.

### *3.23 Sample 12 (SF 25)*

Sample 12 is comprised of a grey flint material that retains 30% cortex in the platform area. This was recorded as a thinning flake or an irregular blade with possible microwear on left lateral side when viewed dorsally. However, when examined with SEM the chipping showed no pattern and minimal associated microscopic features. This suggests that the flint was unused when deposited and has only typical non-use edge damage.

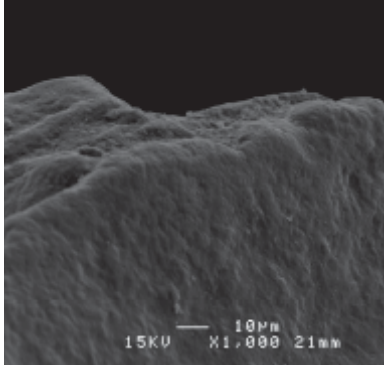
## **3.3 Pit Group 2**

Only one flint was selected from pit group 2. Flint 4014.491 was numbered 13 and examined with SEM. Pit group 2 was dated based on the presence of three large Mid Neolithic Peterborough ware pottery sherds (Kenney & Davidson 2006).

### 3.31 Sample 13 (SF 491)

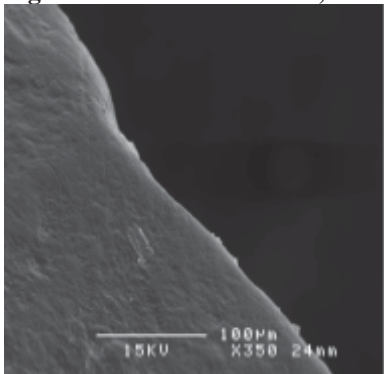
Sample 13 is a light grey flint shaping flake. This unifacial tool has cutting microwear on the left lateral edge when viewed on dorsal surface and scraping wear on the distal edge. However, there does not appear to be any area for hafting. The distal scraping area contained considerable ridge polish on the edge and rounding in the low-lying areas (Figure X.8). The ventral surface was examined and contains no microchipping scars. There are groups of perpendicular striations in the areas of polish. This lack of chipping with the ridge polish pattern and perpendicular striations suggests that the distal scraping edge was used in a uni-linear motion from ventral to dorsal surfaces.

**Figure X.8: Ventral surface, Distal end**



When the cutting edge on the left lateral side was examined, a very different usewear pattern to that of the scraping edge was seen. The polish was continuous along the edge removing the topography completely within about 1mm of the edge. There were groups of five or more striations within the edge polish; these were transverse and parallel. The transverse striations were only in one direction starting distally at the edge and going into the tool at an angle of about 30 degrees to the edge (Figure X.9).

**Figure X.9: Ventral surface, Left lateral edge**



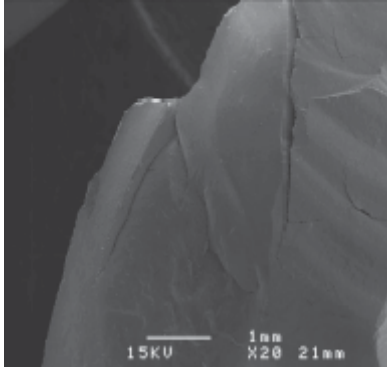
### 3.4 Pit Group 4

Two flints were selected from pit group 4 to be examined for microwear. The flint numbered 4106.826 was called sample 14 and was selected for microwear analysis due to macroscopically visible evidence of heat exposure. Sample number 15 was chosen as it contained microwear, and was numbered 4106.1252. Both flints come from the same pit fill, which is interesting as sample 15 shows no features of heat exposure and sample 14 shows quite a few.

#### 3.41 Sample 14 (SF 826)

Macroscopically, this light grey flint showed increased lustre, crazing and some black staining. These are three of the four major signs of heat exposure (Luedtke 1992). This flint was examined to confirm its exposure to heat as well look for possible microscopic secondary features. Cracks were found throughout the body of the tool, either at right or acute angles to each other and confirm the macroscopic crazing. Interestingly no pits were seen, though several areas show considerable fracturing and flaking of the surface (Figure X.10). It is possible that due to surface fracture the water vapour was able to escape and pits did not develop. It is also possible that the areas of fracture are a microscopic feature of heat exposure not typically discussed as few heated samples are examined at high magnification. Though both of these suggests will need to be tested with additional examinations and experimental work.

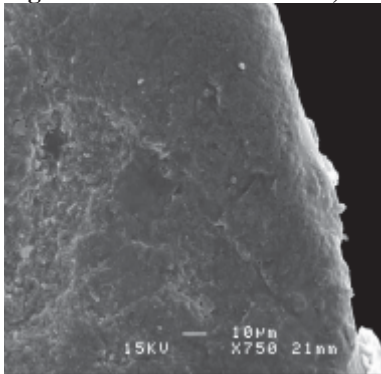
**Figure X.10: Dorsal surface, Right lateral side**



#### *3.42 Sample 15 (SF 1252)*

Sample 15 is a tan flint unifacial scraper. The use edge is on the distal corner of the right lateral side of the dorsal surface. The edge angle in the centre of the edge is 40 degrees and towards the lateral sides of the edge the angle tends towards 60 degrees. There is well developed blanket polish up to 20  $\mu\text{m}$  from the edge. This polish changes to chained then isolated as you move further away from the edge. Within the area of polish there are groups of two to five striations perpendicular to the edge. There were pits visible under the microscope that were not visible at the macroscopic level (Figure X.11). The body of the tool is relatively devoid of usewear, however, there is considerable alteration of the surface. This alteration is in the form of rounding, it is a general rounding of features and is quite different from the microwear polish found on the scraping surface. It is possible that this is the result of a post-depositional process or heat exposure, possibly also causing the formation of the pits.

**Figure X.11: Ventral surface, Distal edge**



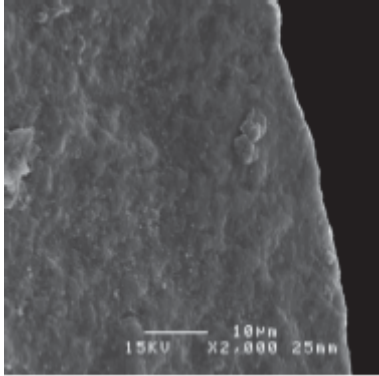
#### *3.5 Pit Group 6*

Pit group 6 is the next group to be discussed, as no flints in pit group 5 were examined for microwear. Six flints were selected from pit group 6. These flints were selected as they appeared to be retouched and used. Sample 16 was 6066.858, sample 17 was 6042.778, sample 18 was 6005.771, sample 19 was 6006.979.1, sample 20 was 6042.779 and sample 21 was 6005.781. Samples 20 and 21 were examined using ESEM unlike the other samples in which SEM was used. All samples were collected from pit fills that were dated to the later Neolithic due to the presence of later Neolithic pottery (Kenney & Davidson 2006).

#### *3.51 Sample 16 (SF 858)*

Sample 16 is a dark grey snapped flint blade. The right lateral side when looking dorsally appeared to contain no retouch but instead evidence of use. There was little to no microchipping along the use edge or elsewhere on the tool; instead there was a general rounding of the tool, suggesting that there was some nontraumatic post depositional process. The lack of microchipping on the use edge suggests that the material of use was soft. There is polish of the right lateral edge. Along the very edge, well-developed blanket polish extends no more than 10  $\mu\text{m}$ . Beyond the blanket polish, is isolated polish spots, this extends another 5-10  $\mu\text{m}$  from the edge. There are some short parallel and transverse striations associated with the polish and found in groups of three or more. The edge angle of this tool was between 40 and 43 degrees. This edge angle along with the polish and striations suggest that the tool was used to cut a soft material in a bi-directional motion. The bi-directionality is indicated by the transverse striations, which are both proximal to distal and distal to proximal off the use edge (Figure X.12).

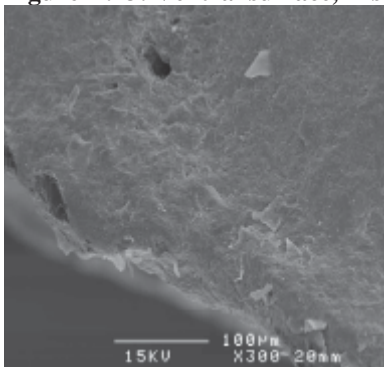
**Figure X.12: Ventral surface, Right lateral edge**



*3.52 Sample 17 (SF 778)*

Sample 17 is a hafted scraper composed of a tan and black mixed flint. The edge angle ranges between 85 and 95 degrees, which is well within the expected range for scrapers (Kooyman 2000). Midway down the lateral sides there are notches probably used for some type of haft. The interesting thing about these notches is that they are aligned perpendicular to the long axis of the tool, however the scraper edge is roughly 10 degrees off the long axis. Either suggesting that the scraper was hafted and used at angle or that after breakage of the original 90 degree scraper surface the tool was resharpened at this angle and reused. When examined microscopically pits were discovered on the surface of the tool. These are steep sided deep pits often associated with a crystalline interior (Figure X.13). These pits were found throughout the surface of the tool and are not associated exclusively with usewear. However, some of the pits are found along micro fracture zones.

**Figure X.13: Ventral surface, Distal end**

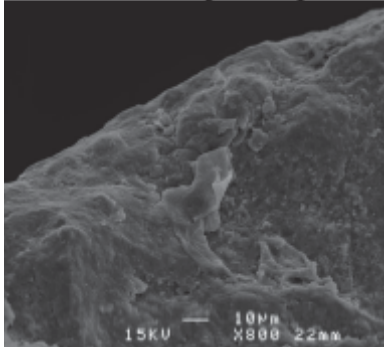


The microwear found on the scraper edge includes minor polish development on the very high areas of a narrow band along the ventral surface of the edge. There were very few striations found in the polish, when found they were isolated, short and perpendicular or transverse to edge. Microchipping was the dominant form of usewear along the scraper edge. Feather terminating microchipping is found on both the dorsal and ventral surfaces of the scraping edge. The area between the two surfaces contains some step terminating microchips with rounding and isolated polish on the ridges between flake scars. This usewear suggests a bi-directional scraping motion on a medium hard to hard material.

*3.53 Sample 18 (SF 771)*

Sample 18 is the midsection of a broken blade made of white grey flint. Only the right lateral side when viewed dorsally appears to have wear. The edge angle of this side is 45 degrees. The entire tool has a general rough surface suggesting that minimal post depositional wear took place. The used edge itself retains a considerable amount of its original topography suggesting that the tool was used for a short period of time. The usewear on the right lateral side includes polish confined to the edge of the tool. This polish is somewhat patchy being connected by areas of rounding and not extending 10 um from the edge. There were a few striations associated with the polish, these tended to be short, transverse and their location was dictated by the rough topography that still remains (Figure X.14). Overall, this appears to be a cutting tool used for a short period of time, possibly an expedient tool.

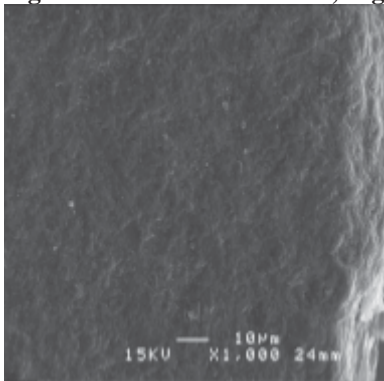
**Figure X.14: Dorsal surface, Right lateral edge**



*3.54 Sample 19 (SF 979.1)*

Sample 19 is a dark grey brown flint scraper. There is a possible break along the use surface that is opposite the termination. This area is referred to, as opposite the distal area as it is not the true proximal area. It appears that this area opposite the distal area was broken prior to tool manufacture. Additional breaks on both the left and right lateral sides suggest that this flake fragment was reworked into a scraper. The 60-65 degree edge angle of the use edge supports the idea that this was used as a scraper. The ventral scraper surface is polished within 10 µm. This polish is interconnected and in some areas forms a blanket polish removing all topography. Within the polish there are long-shallow and deep-short transverse and perpendicular striations (Figure X.15). Besides the polish there are isolated microchip scars along the surface. These are removed at a 90-degree angle to the edge.

**Figure X.15: Ventral surface, Right lateral edge**

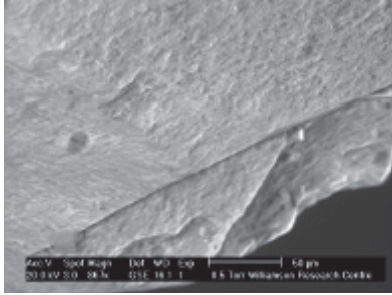


*3.55 Sample 20 (SF 779)*

Sample 20 is a dark grey flint scraper. The scraper edge is on the right lateral side of the tool when view dorsally. The termination is hinged making it difficult to rework, this may be why the right lateral side was chosen for modification. There is a notch on the right side of the proximal area suggesting that the scraper was hafted. Microwear examination of the proximal area confirms this notch as part of a haft. There was considerable microchipping in the retouch scars on the dorsal surface of the scraper edge to the sides of the main contact area of the use edge. Polish was found for 20 µm along the edge and then along the ridges of the contact edge. Polish was also seen for another 10 µm on the dorsal surface. Short perpendicular striations were found in and around the polished areas of the edge (Figure X.16). It is unclear due to the considerable polish and rounding of the contact edge if the motion of use was uni or bi-directional, however, it can be assumed that the material was medium to medium soft.



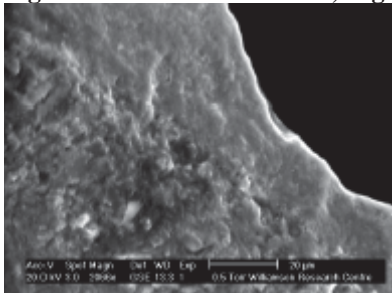
**Figure X.16: Dorsal surface, Right lateral edge**



### *3.56 Sample 21 (SF 781)*

Sample 21 is a grey flint scraper. The two lateral sides were both used. The retouching of these two edges has connected in the distal area, completely removing any trace of the termination. This is a formal unifacial tool with very even and perpendicular macrochipping to both edges. There is no evidence that this tool was hafted. The right lateral side has a more acute edge angle of approximately 45 degrees and the left lateral side has an edge angle of about 65 degrees. These edge angles suggest a cutting function for the right lateral side and a scraping function for the left lateral side. When the tool was examined microscopically these functions were confirmed. The cutting or right edge contains parallel striations and edge polish extending 10-20  $\mu\text{m}$  from the edge (Figure X.17). There is minimal microchipping suggesting that the material cut was medium to medium soft. The scraping or left edge has polish extending 20  $\mu\text{m}$  from the edge on the ventral surface, relatively few microchipping scars, though some are present with rounding and polish affecting the ridges. This is classic scraper wear though the high level of polish suggests again that the material was somewhat soft, probably medium hardness and that this tool was used for a considerable length of time.

**Figure X.17: Ventral surface, Right lateral edge**



### *3.6 Miscellaneous*

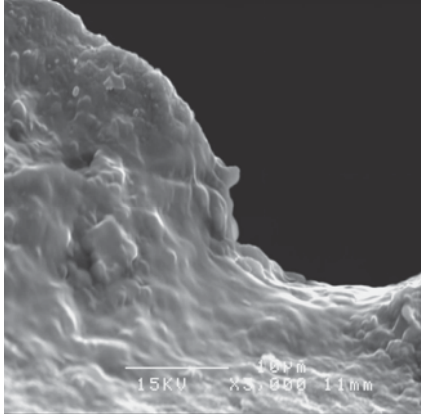
Samples 7-9 are from various locations across the site. Sample 7 (4210.585) was found on the edge of burnt mound 4199, sample 8 (2179.881) was from beneath burnt mound 2176, and sample 9 (3122.472) was found in the earth oven 3133.

#### *3.61 Sample 7 (SF 585)*

Sample 7 is a light-brown/caramel flint thinning flake or blade. The right lateral side when observed from the dorsal side has been retouched minimally. This unifacial tool appears to have been held in a haft in the proximal area. The edge angle ranges from 30 to 40°, which indicates that the edge was probably used for some type of cutting.

The haft area contains some rounding and even the start of spot polish with short striations that shows the direction of movement in the haft (Figure X.18). The use edge has parallel and transverse striations. There were isolated microchips and at an angle to the edge, which suggests that the force of the detachment was also at an angle. There is polish along the use edge, which extends into the body of the tool some 10-15  $\mu\text{m}$ . Overall it appears that this tool was used to cut materials of a medium to medium-hard texture.

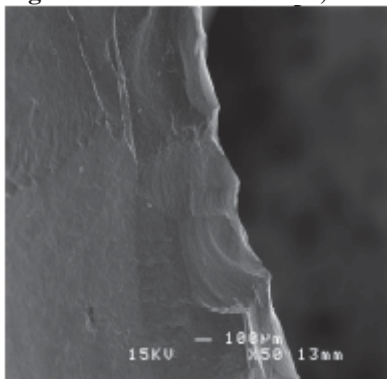
**Figure X. 18: Dorsal surface, Proximal end**



*3.62 Sample 8 (SF 881)*

Sample 8 is light grey thinning flake or blade. This unifacial tool was retouched both in the proximal and distal areas. The left lateral side when viewed dorsally meets the right lateral side due to retouch of the use edge. It appears that this tool was held in the hand as there is no evidence of a haft. The left lateral side has an edge angle of 50-57 degrees, which may indicate a cutting function for the tool. The polish along the edge extends some 15-20 um on topographic highs but only 5 um continuously on the edge and contains transverse striations that both run proximal to distal and distal to proximal off the edge. There is considerable microchipping along the edge (Figure X.19), which suggest that the material being cut in a bi-directional manner was probably of a medium to medium-hard texture.

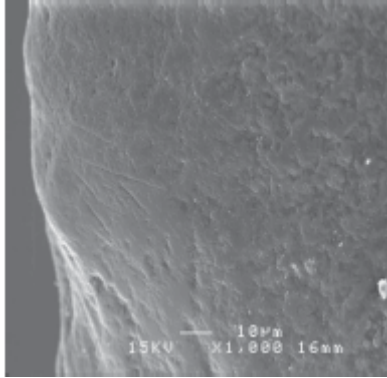
**Figure X.19: Dorsal surface, Left lateral edge**



*3.63 Sample 9 (SF 472)*

Sample 9 is a brown flint blade that appears to have been used on both the right and left lateral sides. The edge angles on both sides are similar at about 30 degrees. These edge angles suggest a cutting function. There are two notches to the sides of the proximal area, which was probably used to haft the tool. The edges contained continuous microchips. There was rounding to the majority of the ridges left behind by these scars. In some areas polish developed within 10 um of the edge. With this polish there were large numbers of striations of transverse and parallel to the edge (Figure X.20). This microwear may indicate that the material of use was medium-hard and that this tool was used for a length of time.

**Figure X.20: Ventral surface, Right lateral edge**



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## Appendix X.1

**Table X.1: Flints from Interior of Early Neolithic Timber Structure**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
1216/61	Concave scraper	Grey Flint	Cortex						Burnt	Fill of pit, neat SE corner
1255/966	Flake fragment									Fill of posthole, part of south wall
1336/1173	Flake fragment									Fill of small pit or posthole, east end inside
1369/73	Microblade	Tan Flint	Collapsed	2	Broken	L: 34-35° R: 52-53°	0%	Yes/yes		Upper fill of posthole, Partition East of Structure
1389/1238	Spokeshave	Tan Flint	Collapsed	2-3	Feather	52-53°	0%	Yes/ yes	Lustre, crazing	Packing fill, main aisle post
1389/964	Broken flake	White Flint	Broken	3	Broken	Na	25%	No/no	Burnt	Packing fill, main aisle post
1389/1230	Flake fragment								Burnt	Packing fill, main aisle post
1389/1199	Flake fragment								Burnt	Packing fill, main aisle post
1389/88	Broken projectile point									Packing fill, main aisle post
1405/83	Blade/ sickle	Grey Flint	Plano-convex, lipped/2	3	Broken	L: 35-41° R: 35-41°	15%	Yes/yes		Postpipe fill, main aisle posts
1443/963	Flake fragments								Burnt	Fill of post trench, inside east gable end
1443/1305	Flake fragments									Fill of post trench, inside east gable end
1444/1233	Flake fragment								Burnt	Fill of post trench, inside east gable end
1445/1204	Flake fragments								Burnt	Charcoal deposit post trench, east gable end
1446/968	Flake fragments								Burnt	Fill of post trench, east gable end
1526/961	Shaping flake	White Flint	Plano-Convex/ 2	3	Hinge	Na	10%	No/no	Lustre, crazing, potting, black staining	Fill of Postpipe, main aisle post
1513/962	Broken flake	Red Chert	Broken	2	Broken	Na	0%	No/no	Lustre dorsal, potting dorsal	Packing around postpipes, main aisle post
1513/923	Split nodule	Tan Flint	Na	Na	Na	Na	100%	No/no		Packing around postpipes, main aisle post
1513/97 #1	Scatter	Grey Flint	Broken	2	Broken	Na	35%	No/ no		Packing around postpipes, main aisle post
1513/97 #2	Secondary flake	Red Chert	Oval/ 3	4	Feather	Na	0%	No/no	Potting, black staining	Packing around postpipes, main aisle post
1513/962	Flake fragments									Packing around postpipes, main aisle post
1552/1194	Flake fragments									Fill of Postpipe within main aisle posthole
1552/1214	Flake fragment									Fill of Postpipe within main aisle posthole
1569/513	Microblade	Grey Flint	Cortex	3	Feather	L: 54-59° R: 42-53°	5%	Yes/yes	Lustre	2 <sup>nd</sup> fill of postpipe in posthole, main aisle post
1569/110	Blade	Carmel Flint	Cortex	1	Broken	Na	25%	No/no		2 <sup>nd</sup> fill of postpipe in posthole, main aisle post
1569/1235	Flake fragments								Burnt	2 <sup>nd</sup> fill of postpipe in posthole, main aisle post
1569/512	Shaping flake	Grey Flint	Triangular/1	2	Broken	Na	0%	No/no		2 <sup>nd</sup> fill of postpipe in posthole, main aisle post
1635/1130	Flake fragment								Burnt	Fill of short slot, South wall of structure
1670/973	Broken flake	Grey Flint	Broken	2	Broken	Na	5%	No/no	Lustre dorsal only	Occupation level, interior of structure
1709/173	Scraper								Burnt	Fill re-cut within posthole, West gable end
1709/1212	Flake fragments								Burnt	Fill re-cut within posthole, West gable end
1709/1237	Flake fragment								Burnt	Fill re-cut within posthole, West gable end
1713/150	Flake fragment									Fill re-cut within posthole, West gable end
1713/152	Secondary flake	Tan Flint	Oval/2	3	Feather	Na	25%	No/no		Occupation level, interior of structure

**Table X.2: Flints from the Exterior of the Early Neolithic Timber Structure**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
1327/1110	Flake fragment								Burnt	Fill of pit, outside east gable end
1631/228	Broken flake	Grey Flint	Broken	3	Outrepasse	Na	5-10%	No/no	Lustre, crazing, potting	Fill of large pit, West of Structure
1631/1124	Flake fragment								Burnt	Fill of large pit, West of Structure
1632/960	Flake fragment									Fill of large pit, west of structure
1648/1277	Flake fragment									Primary pit fill, NW of structure
1665/959	Flake fragments								Burnt	Fill of posthole, 1 of 3 in line west
1665/1236	Flake fragment									Fill of posthole, 1 of 3 in line west
1703/924	Secondary flake	Tan Flint	Broken	3	Feather	45-48°	0%	No/no		2 <sup>nd</sup> fill of posthole, 1 of 3 in line west
1703/1229	Flake fragment									
1725/156	Secondary flake/ Hafted scraper	Pink Flint	Irregular/ 3	2	Feather	87-92°	0%	Yes/ yes		Stake hole fill, East of Structure
1730/166	Broken flake	Grey Flint	Broken	3	Broken	Na	20-30%	No/no	Lustre both sides	Pit fill, West of Structure
1730/169	Shatter	Tan Flint	Na	3	Na	Na	0%	No/no	Lustre	Pit fill, West of Structure
1731/1285	Flake fragments	Chert								
1739/1289	Flake fragment								Burnt	

**Table X.3: Flints from Later Neolithic Pit Group 1**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
1026/817#1	Microblade	Grey Flint	Oval/ 3	2-3	Outerpasse	Na	10%	No/no		Fill of small pit 1027
1026/817#2	Broken flake	Tan Flint	Broken	2	Broken	Na	0%	No/no		Fill of small pit 1027
1026/817#3	Broken flake	Grey Flint	Collapsed	2	Feather	Na	0%	No/no		Fill of small pit 1027
1033/67	Hafted scraper	Black Chert	Retouched	3-4	Retouched	71° 109°	0%	Yes/yes		Fill of medieval ditch
1048/25	Microblade	Grey Flint	Cortex	2	Outerpasse	Na	30%	No/no		Fill of small pit 1049, by 1036, 1052
1048/49	Microblade	Tan Flint	Collapsed	2	Feather	Na	0%	No/no	Lustre dorsal	
1048/506	Shaping flake	Carmel Flint	Convex-convex, prepared, lip/ 1	2	Broken	Na	0%	No/no		Fill of small pit 1049, by 1036, 1052
1048/507	Blade	Grey Flint	Broken	3-4	Broken	42° left	0%	No/no		Fill of small pit 1049, by 1036, 1052
1048/508	Broken flake	Grey Flint	Broken	3	Feather	Na	0%	No/no		Fill of small pit 1049, by 1036, 1052
1051/10	Primary flake	Tan Flint	Triangular/ 1	3	Broken	Na	60%	No/no		Fill of pit 1052
1051/29	Blade	Dark grey Flint	Plano-convex/2	3	Retouched	46°	0%	Yes/yes		Fill of small pit 1052
1156/60#1	Split pebble	Grey Flint	Na	Na	Na	Na	60%	No/no	Lustre	Bronze age disturbance
1156/60#2	Small shatter	Grey Flint	Na	Na	Na	Na	0%	No/no	Lustre, crazing, potting	Bronze age disturbance
1303/69	Microblade	White Flint	Plano-convex, lip/1	2-3	Broken	Na	0%	No/no		Fill of pit 1321, cut by 1258 and 1034

**Table X.4: Pit Group 2**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
4013/958	13 Flake fragments									Upper fill of pit 4012
4013/1387	Flake fragments									Upper fill of pit 4012
4014/491	Shaping flake/ cutting	Grey flint	Broken	3-4	Feather	30-32°	0%		Yes/yes	Main fill of pit 4012

4014/957	2 flake fragments										Main fill of pit 4012
4014/1096	Snapped blade	Dark grey Flint	Broken	3-4	Broken	Na	0%	No/no			Main fill of pit 4012
4014/1205	11 Flake fragments									2 burnt	Main fill of pit 4012
4014/1348	4 Flint flakes										Main fill of pit 4012
4015/489	Nodule										Pit 4016 fill
4022/819#1	Broken flake	Brown Flint	Broken	1	Feather	Na	85%	No/no			Pit 4024 fill
4022/819#2	Broken flake	Brown Flint	Broken	1	Feather	Na	95%	No/no			Pit 4024 fill
4022/819#3	Broken flake	Brown Flint	Broken	2	Feather	Na	0%	No/no			Pit 4024 fill
4022/819#4	Finishing flake	Brown Flint	Crushed	3-4	Feather	Na	0%	No/no			Pit 4024 fill
4022/819#5	Thinning flake	Brown Flint	Convex-convex, lip/ 1	1-2	Feather	Na	30%	No/no			Pit 4024 fill
4022/823	Shaping flake	Brown Flint	Broken	1	Hinge	Na	0%	No/no			Pit 4024 fill
4022/838	Flake fragment										Pit 4024 fill
4022/956	33 Flake fragments										Pit 4024 fill

**Table X.5: Pit Group 3**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
4061/546	Broken flake	Brown Flint	Broken	2	Broken	Na	95%	No/no	Potting, crazing	Main fill of pit 4062
4061/955	Broken flake	Grey Flint	Broken	2	Broken	Na	0%	No/no		Main fill of pit 4062
4061/1350	Flake fragment								Burnt	Main fill of pit 4062
4061/1373	Flake fragment								Burnt	Main fill of pit 4062
4067/909	Secondary flake	Grey Flint	Cortex/1	1	Feather	Na	5%	No/no		Charcoal rich fill of pit 4062
4068/1316	Flake fragment									Fill of pit 4069 with Neolithic pottery
4068/1364	Flake fragment									Fill of pit 4069 with Neolithic pottery
4068/1366	Flake fragment									Fill of pit 4069 with Neolithic pottery
4068/1368	Flake fragments									Fill of pit 4069 with Neolithic pottery
4093/579	Broken flake	Grey Flint	Broken	1-2	Feather	Na	90%	No/no	Lustre	Fill of pit 4092 w/Neolithic grooved ware
4093/1106	Large flake									Fill of pit 4092 with Neolithic grooved ware
4093/1128	Flake fragment								Burnt	Fill of pit 4092 with Neolithic grooved ware
4093/1153	Flake fragment									Fill of pit 4092 with Neolithic grooved ware
4093/1282	Flake fragment									Fill of pit 4092 with Neolithic grooved ware

**Table X.6: Pit Group 4**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
4099/720	Broken flake	Grey Flint	Plano-convex/2	1	Cortex	Na	45%	No/no		Fill of pit 4100, pottery & packing stones
4099/1358	Flake Fragment									Fill of pit 4100, pottery & packing stones
4101/542	Shaping flake	Grey Flint	Coarse material	5	Outerpasse	Na	0%	No/no	Lustre	Lower fill of pit 4103, cuts line and shares large stones with 4099
4102/818	Broken flake	Grey Flint	Broken	3	Hinge	Na	0%	No/no		Lower fill of pit 4103 with pottery & packing stones
4102/828	Broken flake	Grey Flint	Broken	3	Broken	Na	0%	No/no	Potting, crazing, black stain	Lower fill of pit 4103 with pottery & packing stones
4102/954	Flake Fragments									Lower fill of pit 4103 with pottery & packing stones
4104/1338	Flake Fragment									Upper fill of 4103
4105/1352	Flake Fragments									Two phases of slumping in section over 4102
4105/1390	Flake Fragment									Two phases of slumping in section over 4102
4106/721	Broken flake	Grey Flint	Na	2	Na	Na	0%	No/no		Fill of pit 4109, lining cut under 4108, erosion



4106/826	Shatter	Grey Flint	Na	Na	Na	Na	0%	No/no	Lustre, crazing, black stain	deposit? Fill of pit 4109, lining cut under 4108, erosion deposit?
4106/1252	Scraper	Tan Flint	Plano-convex/1 prepared	2-3	Feather	42-58°	0%	Yes/yes		Fill of pit 4109, lining cut under 4108, erosion deposit?
4107/550#1	Snapped blade	Grey Flint	Crushed	3	Broken	Na	0%	No/no	Lustre, potting, crazing, black staining	Upper fill of 1409, with quern stone & charcoal
4107/550#2	Broken flake	Tan Flint	Broken	2	Broken	Na	05	No/no		Upper fill of 1409, with quern stone & charcoal
4107/550#3	Shatter	Tan Flint	Na	Na	Na	Na	0%	No/no	Lustre, crazing	Upper fill of 1409, with quern stone & charcoal
4107/550#4	Broken flake	White Flint	Broken	2-3	Broken	Na	0%	No/no		Upper fill of 1409, with quern stone & charcoal
4107/1150	Flake Fragment									Upper fill of 1409, with quern stone & charcoal
4107/1340	Shatter	Grey Flint	Na	Na	Na	Na	0%	No/no		Upper fill of 1409, with quern stone & charcoal
4108/552	Broken blade	Tan Flint	Broken	2	Broken	Na	10%	No/no		Lower fill of 4109, with pottery, charcoal & red soil
4108/953	Flake Fragment									Lower fill of 4109, with pottery, charcoal & red soil
4108/1336	Flake Fragments									Lower fill of 4109, with pottery, charcoal & red soil
4108/1349	Flake Fragments									Lower fill of 4109, with pottery, charcoal & red soil
4108/1357	Blade	Brown Flint	Triangular/1	3	Outerpasse	Na	0%	No/no		Lower fill of 4109, with pottery, charcoal & red soil

**Table X.7: Pit Group 5**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
4132/1234	Flake fragments									Upper fill of 4133, with pottery
4147/1104	Flake fragment								Burnt	Lowest fill of 4133
4147/1169	Flake fragments									Lowest fill of 4133,
4147/1284	Flake fragments									Lowest fill of 4133,
4149/560	Waste flake									Fill of 4133 N & W sides,
4149/952	Flake fragments									Fill of 4133 N & W sides,

**Table X.8: Pit Group 6**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
6007/633	Split pebble	Dark brown Flint	Na	Na	Na	Na	50%	No/no		Near 6041
6065/844	Flake fragment									Deposit overlaying pit 6044
6006/979	Flake fragments									Fill of pit 6034
6006/979.1	Scraper	Dark grey Flint	Broken	2	Hinge	60-65°	0%	Yes/yes		Fill of pit 6034
6005/765	Flake fragment									Fill of pit 6034
6005/767	Broken flake	Dark grey Flint	Broken	3	Broken	Na	0%	No/no		Fill of pit 6034
6005/770	Scraper									Fill of pit 6034
6005/771#1	Snapped blade	White Chert	Broken	3	Broken	R: 46°	0%	No/yes		Fill of pit 6034
6005/771#2	Broken flake	Dark grey Flint	Broken	1	Broken	Na	0%	No/no		Fill of pit 6034
6005/771#3	Finishing flake	Dark grey Flint	Crushed	4	Feather	Na	0%	No/no		Fill of pit 6034
6005/777	Shaping flake	Grey Flint	Triangular/3	2	Outerpasse	Na	0%	No/no		Fill of pit 6034
6005/781	Scraper									Fill of pit 6034
6005/782#1	Shatter	Dark brown Flint	Na	Na	Na	Na	0%	No/no		Fill of pit 6034
6005/782#2	Shatter	Dark brown Flint	Na	Na	Na	Na	0%	No/no		Fill of pit 6034
6005/782#3	Finishing flake	Dark brown Flint	Crushed, prepared	4	Feather	Na	0%	No/no		Fill of pit 6034

6005/951	Flake fragments										Fill of pit 6034
6005/111	Flake fragment										Fill of pit 6034
6042/778#1	Broken flake	Tan/ black Flint	Concave-convex/1	2	Broken	Na	0%	No/no			Fill of pit 6043
6042/778#2	Hafted scraper	Tan/ black Flint	Broken	2	Broken	86-92°	0%	Yes/yes			Fill of pit 6043
6042/778#3	Broken flake	Dark brown Flint	Broken	4	Broken	Na	0%	No/no			Fill of pit 6043
6042/778#4	Broken flake	Dark brown Flint	Broken	2	Broken	Na	0%	No/no			Fill of pit 6043
6042/779	Blade										Fill of pit 6043
6042/1200	Flake fragments										Fill of pit 6043
6042/1201	Flake fragments										Fill of pit 6043
6042/1232	Flake fragment										Fill of pit 6043
6042/1322#1	Micro blade	Tan Flint	Triangular/2	2	Feather	Na	20%	No/no			Fill of pit 6043
6042/1322#2	Broken flake	Tan Flint	Broken	2	Broken	Na	0%	No/no			
6042/1322#3	Broken flake	Light grey Flint	Broken	2	Broken	Na	0%	No/no			
6042/1362	Flake fragment										Fill of pit 6043
6063/978	Flake fragment										Upper fill of pit 6044
6048/950	Flake fragments										Fill of pit 6047
6048/1231	Flake fragment										Fill of pit 6047
6054/841	Shaping flake	Dark grey Flint	Crushed	4	Outerpasse	Na	0%	No/no			Fill of pit 6055
6054/949	Flake fragments										Fill of pit 6055
6060/948#1	Shaping flake	Grey Flint	Crushed	2	Feather/ou terpasse	Na	0%	No/no			Fill of pit 6061, pottery
6060/948#2	Broken flake	Tan Flint	Broken	1	Feather	Na	0%	No/no			Fill of pit 6061, pottery
6066/853	Broken flake	Tan Flint	Broken	1	Broken	Na	35%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/855	Broken flake	White Flint	Broken	1	Broken	Na	0%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/858	Snapped blade	Dark grey Flint	Plano-convex/2	2	Broken	R: 41-43° L: 61-72°	0%	No/yes	Lustre		Upper fill of pit 6072 pottery, large stone fragments
6066/908#1	Broken flake	Dark grey Flint	Broken	3	Broken	Na	0%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/908#2	25% of pebble	Light grey Flint	Na	Na	Na	Na	35%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/908#3	Micro blade	Tan Flint	Broken	2	Feather	Na	0%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/908#4	Broken flake	Tan/pink Flint	Broken	1	Hinge	Na	20%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/908#5	Broken flake	White/orange Flint	Convex- convex/2	2	Feather	Na	0%	No/no			Upper fill of pit 6072 pottery, large stone fragments
6066/908#6	Flake fragments								Lustre, pots, crazing, black stain		Upper fill of pit 6072 pottery, large stone fragments
6066/975#1	Broken flake	Orange/ black chert	Broken	3	Hinge	Na	0%	No/no			Upper fill of pit 6072 pottery, tone fragments
6066/97#2	2 broken flakes	White Flint	Broken	1	Broken	Na	0%	No/no	Lustre potting, crazing		Upper fill of pit 6072 pottery, large stone fragments
6066/975#3a	Broken flake	Tan Flint	Broken	1	Broken	Na	0%	No/no			Upper fill of pit 6072 pottery, large stone fragments
6066/975#3b	Finishing flake	Tan flint	Plano-convex/2	3	Outerpasse	Na	0%	No/no			
6066/975#4	2 shatter	Grey Flint	Na	Na	Na	Na	0%	No/no	Lustre, pink Pitting, crazing		Upper fill of pit 6072 pottery, stone fragments
6066/975#5	Flake fragments										Upper fill of pit 6072 pottery, stone fragments
6066/976#1	Broken flake	Brown Flint	Broken	1	Broken	Na	35%	No/no	Lustre		Upper fill of pit 6072 pottery, stone fragments
6066/976#2	Shaping flake	Tan/red Flint	Triangular/1 lipped	4	Outerpasse	Na	0%	No/no	Crazing, potting		Upper fill of pit 6072 pottery, stone fragments
6066/1071#1	Broken flake	Light grey	Cortex	1	Broken	Na	50%	No/no			Upper fill of pit 6072 pottery, stone fragments
6066/1071#2	Shatter	Light grey Flint	Na	Na	Na	Na	15%	No/no			
6066/1195	Flake fragments										Upper fill of pit 6072 pottery, stone fragments
6066/1211	Flake fragments										Upper fill of pit 6072 pottery, stone fragments

6066/1215	Flake fragments											
6073/893	Broken flake	Tan Flint	Cortex	1	Cortex	Na	15%	No/no		Burnt	Upper fill of pit 6072 pottery, stone fragments	
6073/896	Shaping flake	Light grey Flint	Broken	2-3	Outerpasse	Na	0%	No/no			Fill of pit or posthole 6072, burnt looking	
6073/977	Flake fragments										Fill of pit or posthole 6072, burnt looking	
6086/974	Flake fragments										Fill of pit 6087	

**Table X.9: Pit Group 8**

Fill/Find/	Flake type/ use	Material type	Platform shape/ #scars	Dorsal scars	Termination	Edge angle	Cortex	Retouch/ Microwear	Heat	Location
1304/1283	Flake fragments									Fill of pit 1305 part of pits S of early Neolithic structure
1304/1334	Broken flake	Light brown Flint	Broken	3	Broken	Na	0%	No/no		Fill of pit 1305 part of pits S of early Neolithic structure
1597/1251	Primary flake	White Flint	Oval/2	2	Broken	Na	50%	No/no	Crazing ventral	Fill of 1596 part of pits SW of early Neolithic structure

## APPENDIX XI: PETROLOGY OF CLASTS RECOVERED FROM PARC BRYN CEGIN

Dr David Jenkins

### Summary

A petrological examination has been made of the rock fraction from 23 contexts at the Parc Bryn Cegin excavations by GAT. This indicated that the rock types identified were all consistent with a source in the local Snowdonian glacial deposits with no obvious exotic material. There was no significant variation in composition across the site nor any significant variations according to the archaeological period of context. There was, however, evidence of a slight preference for doleritic/mafic rock types in the fired material from the burnt mounds.

### 1. Introduction

23 samples of rocks (*i.e.* mostly >30mm) recovered from excavations by GAT at Parc Bryn Cegin were examined to establish their petrology. This was done in order to

- a. identify the source of rock materials, particularly of any exotic material introduced to the site
- b. establish whether rock types varied spatially or with time across the site, and
- c. establish whether there had been any selective usage of material for a specific purpose, such as use in the burnt mounds that had been identified.

A representative 10-12 clasts were selected from rock fractions collected from each site. These were fractured to provide a surface of the fresh unweathered rock and, if necessary, also washed to provide clean surfaces. The rocks were then examined with a hand lens (x10) and where necessary with a zoom stereomicroscope (x15-x75), and the results were recorded and placed into one of 12 rock type groups. The general shape and evidence of firing in the form of red hues in the surface zones and of incipient cracking were also recorded.

### 2. Results

The results are presented in table XI.1. The samples are grouped according to trench and field descriptions together with context numbers and a broad description of shape (*i.e.* R – rounded; r – sub-rounded; a – sub-angular; A – angular). Evidence of firing through colour and/or cracking was also noted (**F**). The following 12 broad rock types were recognised, although these groups were often diverse and intergrading. Relative abundance was denoted by + (= occasional) or ++ (= common); nature and depth of any weathering rinds was also recorded. However, in view of the heterogeneity of the local deposits and the small samples sizes (12±) examined, no statistical analysis was attempted on the analytical data obtained.

1. Dark grey fine-grained micaceous **siltstone** showing bedding and/or cleavage;
2. Dark (greenish) grey **sandstones**, often poorly sorted with sub-angular grains; well cemented with minimal porosity.
3. Grey **sandstones**, reasonably well sorted with sub-rounded grains, well cemented with minimal porosity.
4. Pale (grey/brown) sandstones with rounded, well-sorted quartz dominant (**orthoquartzites**), and incomplete cementation.
5. Grey **lithic sandstones/tuffs**, generally with well-graded but variable clast sizes in a finer matrix, the clasts often lithic in nature; well cemented with minimal porosity.
6. Pale-grey/grey **rhyolitic tuffs**, often displaying weak/moderate cleavage, varying from fine grained massive with feldspar phenocrasts and welded (ignimbrite) structures to coarser tuffs with angular lithic and crystal clasts.
7. Pale-grey massive **rhyolites**, usually with white weathered surfaces, often displaying small feldspar phenocrysts and occasional fluidal structures small nodules (5mm) or banding, and often a weak cleavage
8. **Microgranite/diorite** – pale, fine grained (<2mm) crystalline with granitic texture comprising quartz, feldspar and minor ferromagnesian/iron-ore minerals, often showing a “podzolic” weathered surface.
9. **Dolerite**, dark greenish grey in colour, in which a characteristic fabric of a mesh of plagioclase laths enclosing dark clinopyroxene and iron ore minerals can be recognized.
10. Obscure **mafic rock types**, dark in colour often with deep brown weathered

zone, sometimes with visible crystals of a ferromagnesian/iron-ore minerals, but generally lacking a recognisable mineralogy or fabric under the zoom microscope – interpreted as altered dolerite, basalt or mafic tuff.

11. Purple strongly cleaved **slate**
12. White aggregates of **vein quartz**, one with fragments of grey host rock and green chlorite

### 3. Discussion

#### 3.1 Provenance of rock types

All 12 rock types identified are consistent with the local Snowdonian glacial deposits as a source, These incorporate material from the Ordovician volcanic (**7 & 5, 6**; lavas and tuffs) and sedimentary rocks (shales/siltstones; **1**) and sandstones (**2, 3, 4**) from the Nant Ffrancon valley (e.g. Bronllwyd grits) and also from a range of shales/slates/siltstones (**1,11**), and sandstones (e.g. St Anns grits; **2, 3, 4**) from the Cambrian slate belt and Arfon platform to the East. Many of these categories intergrade (e.g. **2-3-4-5**) and many could be traced to specific rock exposures, although the source of some of the sandstones (e.g. the slightly porous pale orthoquartzite – **4**) is not familiar. These rock types are accompanied by intrusive dolerites (**9**; e.g. from the Carneddau sill) and by related, but obscure, mafic rocks (**10**), some similar to a small local outcrop of granular-textured “dolerite” a km to the SSW of the site (SH 590695). There are also microgranites/ microdiorites (**8**; e.g. Bwlch y Cywion & Moel Perfedd) from the flanks of the Nant Ffrancon. Of these 12 rock groups, 9 are present within the sample of “natural” (sample 745) examined, whilst the orthoquartzites (**4**), microgranites (**8**) and dolerites (**9**) are not.

There is no evidence on site of any material from the northern Irish Sea till, which can be found exposed on the coast 2.5km to the north east, for example at Capel Ogwen (SH 617725): thus no stones of distinctive Carboniferous cherts, limestones, or of schists or coarse granites and granite gneisses were found. It can be concluded, therefore, that only local Snowdonian glacial material was present on site and utilized. Within these glacial deposits there is a predictable concentration of the harder rhyolitic rocks and well cemented sandstones over the more extensive but softer shales and siltstones. By contrast, amongst the lithic artefacts, (see appendix VII.1), the (Carboniferous) orthoquartzites and probably the (Cambrian?) lithic sandstones used for querns are not represented in the rock clasts examined from the 23 excavated contexts.

#### 3.2 Spatial and temporal variations in distribution

When divided into three groups from the upper eastern (14 contexts), middle (4) and western areas (5) of the site, there were only slight trends evident. For example the eastern portions tended to higher/more common occurrences of rhyolitic and mafic rock types (6, 7, 9, and 10) and the western portions in the dark grey sandstones (2). Similar possible trends were suggested when the samples were divided into Neolithic (7 contexts), Bronze Age (11) and Iron age/Romano-British (2) groups, with the dark grey sandstones and mafic rock types (2, 9, 10) being slightly higher in the Neolithic contexts and the sandstone/tuffs (4) in the Iron Age contexts. However, bearing in mind the small sample sizes involved and inherent small-scale variability of glacial deposits, larger sample sizes and a more rigorous analysis would be required to confirm such trends. There were no obvious trends shown, for example the restriction of particular rock types to particular groups.

#### 3.3 Selective use of rock-types

Many of the samples examined were from sites identified as “burnt mounds” (12 contexts) or “ovens” (3), and contained clasts showing evidence of the influence of fire (15) in the form of reddish hues and/or cracking. When the occurrence of the rock types and evidence of firing was examined on this basis, the most common occurrence in fire-associated contexts was shown by the mafic rocks (9/10; 55%) and the highest incidence of firing was shown by dolerite clasts (9; 60%) and sandstone/tuffs (5; 55%). This suggests that there was a small relative concentration of mafic rocks, and of dolerites in particular, in contexts associated with fire. Such a preference for dolerites has been observed in other sites and presumably relates to the more favourable thermal properties of this massive, mafic crystalline rock type. This resulted in a degree of preferential selection for cooking purposes of this relatively uncommon rock type, which comprised only 4% of the one “natural” sample examined.

Table XI.1: Petrographic analysis of clasts recovered from various contexts at Parc Bryn Cegin, Llandygai G1857)

Trench	Sample No.	Context No.	Sediment Type	Area (E,M,W) Age (N,B,J)	Clast petrography											
					xx –common x - occasional				F - cracked & reddened							
					1	2	3	4	5	6	7	8	9	10	11	12
					Siltstone dark grey	Sandstone dark grey	Sandstone grey	Orthoquartzite white/pale	Sandstone /tuff, dark	Rhyolite tuff pale	Rhyolite lava pale	microgranite	Dolerite	Unidentified mafic	Slate	Vein quartz
T1	13	1087	Oven fill	B E		+ F	+	+ F	+	++ F	+					
	114	1511	Oven fill	B E			++ F	+	+ F	+	++		+ F			
	4	1035	Pit fill	N E	+		+ F		++ F	++ F	++	+	+ F			
	17	1097	Burnt mound	B E			+ F	+		++	++ F	+				
	28	1160	B mnd pit fill	B E			+			++	++	+ F		+ F		
	29	1158	B mnd pit fill	B E	+		++ F			+	++					
	135	1635	Slot fill, Neo.	N E		+	+			++	+	+				
T2	745	2052	Natural - till	- E	+	+	++		+	+	+			+	+	+
	497	2145	Bnt. mnd pit fill	B E		+	+	+ F		++ F	+		+ F			
	622	2167	Burnt mound	B E			+				++ F			++		
	618	2173	Bnt. mnd pit fill	B E		+ F	+ F	+ F		++ F	+ F		+			
	668	2287	Burnt mound	B E			+ F		+ F	++	++	+	? F	+ F		
T3	348	3315	Oven fill	B M			++ F	+ F		+ F	+	+ F	+	+		
	713	3194	Ditch fill	- M			++ F		+ F				++ F		+	



	<b>714</b>	3196	Ditch fill	- M		+ <b>F</b>	+ <b>F</b>				+ <b>F</b>		++	+		
	<b>614</b>	9282	Roundhouse H	I M			+	+		++	++ <b>F</b>			+		
<b>T4</b>	<b>384</b>	4199	Burnt mound	B E			+	++	+	++	+		+			
	<b>397</b>	4276	Roundhouse E	I E	+		+		++ <b>F</b>	+			+	<b>F</b>		+
<b>T6</b>	<b>641</b>	6054	Pit fill	N W		+	++ <b>F</b>			+	++	+	+	<b>F</b>		
	<b>635</b>	2198	Bnt. mnd pit fill	N W	+	+	+	+		++	++					
	<b>605</b>	6014	Bnt. mnd pit fill	N W				+		++		+		+	<b>F</b>	
	<b>643</b>	6057	Bnt. mnd pit fill	N W		++ <b>F</b>	++ <b>F</b>		+		+	<b>F</b>	+	+		
<b>T7</b>	<b>709</b>	7044	Bnt. mnd pit fill	N W		++	++			++						

**NB\*** General "Area": E = east, M = middle, W = west;  
General "Age": N = Neolithic, B = Bronze Age, I = Iron Age/Romano-British  
Clast abundance: += occasional, ++ = common; **F** = fired

## APPENDIX XII: REPORT ON THE ROMAN GLASS

H.E.M. Cool

The glass from the site may be divided into two groups. There is the large group of beads recovered from the bead cache pit [2104] and a small group of vessel fragments and beads found scattered in other contexts. Most of this latter group were found associated with Roundhouse H with five of them coming from context 9182 (the fill of the inner drain [9163]). These scattered items will be considered first followed by a discussion of the material from the bead pit.

Six fragments from blue/green square bottles were found (SF 747, 749, 751, 752, 755, and 886). This vessel type was very common from the later first to earlier third century (Price and Cottam 1998, 194-8). It is frequently the only vessel type found on rural sites as can be seen in the settlements at Bryn Eryr and Bush Farm (Henderson in Longley *et al* 1998, 227), possibly indicating that the people who lived on such sites found a use for whatever was transported in them. Here, however, it seems very likely that the fragments were present on the site as raw material for bead making. On two of the fragments (SF 749 and 755, Fig. 71) the edges had been ground smooth to make the fragments into rectangular and triangular shapes. Whilst this might have been done to make them suitable for use as playing pieces, it would also have made them ideal raw material for bead making. It is likely that in antiquity many beads were made from re-heating chunks of glass using tongs or pincers and iron mandrels as this is the most economical use of the raw material. Experimental work has shown that a much better product results if the chunks are cubic than if fragments taken directly from broken vessels are used (Gam 1993). Preparing the fragments by grinding them to a regular shape would certainly pay dividends if a bubble-free product was wanted. A fragment of glass had been prepared in this way at Cefn Cwmwd on Anglesey (BUFAU excavations unpublished) and at that site there is certainly evidence that beads were being made.

If glass beads were being made using blue/green glass on the site then that might explain two of the other items which are certainly unusual. The polychrome bead (SF 727, Fig. 71) uses blue/green glass as a ground and is, as far as I am aware, unparalleled. It could well be a candidate for local production. There is also part of a blue/green plano-convex 'counter' (SF 754). Roman glass counters are normally made of opaque white and very dark glass appearing black. Other colours are much rarer. It may well be that this was made here as a setting for an item of jewellery, or again what currently appears to be a counter could have in fact been a block prepared for melting. Another uncommon bead is the spherical blue/green bead (SF 753, Fig. 71). Generally in most Roman bead assemblages deep blue and mid green colours are preferred, blue/green beads are much less common. The later second /earlier third century group of beads found in the drains of the legionary fortress at Caerleon and the product of casual loss may be taken as an example (Brewer 1986, 149 nos. 26-73, 152 nos. 1-26). Of the 74 beads found there, there is only one example made of blue/green glass.

On balance, therefore, though no glass working waste was found, it seems highly likely that bead manufacture was being carried out on the site. All of the glass items, with one exception, could have been associated with this activity in some way. The exception is the long blue biconical bead recovered from the topsoil near the large burnt mound (2176) (SF 676, Fig. 71), which is of a more common Roman form in use from at least the second century (Guido 1978, 98).

Given the likely bead production on the site it is somewhat ironic that no connection can be made between that and the items in the bead cache pit. As already discussed the settlement bead industry seems to have been based on blue/green glass. In the pit, by contrast, the beads are deep blue and red. Given that catalogue entries would be very repetitive the two types are described here. Full details are listed in the archive. The drawings illustrate the range of sizes and decorative detail.

The commonest type represented with 230 examples is a deep translucent blue annular bead decorated by opaque white trails arranged in a wave pattern. They have an average diameter of 18.5mm ranging from 17 to 21mm, and an average length of 10mm ranging from 8 to 13mm (see fig. 73). The opaque white trailing is sometimes put on with one continuous trail and sometimes uses more than one trail. The aim was to produce a wave pattern. Generally this is competently done but sometimes the wave resembles a random scribble (see fig. 74). The number of waves on the examples where this can be counted ranges from two to eight with four and five being by far the commonest (see Table XII.1).

<i>type</i>	2	3	4	5	6	7	<b>Total</b>
5a	3	19	110	75	18	3	228

Table XII.1: number of waves on the blue and white beads

The nature of the trailing differs. On some it has not been marvered smooth with the surfaces of the bead. On these in some places it stands proud and has a slightly blobby appearance (see fig. 73). On others it is marvered smooth. On these there tends to be small yellowish spots visible in the white glass. It does not seem that these are deliberate

decoration. They seem more likely to be impurities in the glass as in some white trails small black streaks can also be seen.

When all of the beads are laid out together difference in the nature of the blue glass can be seen. Some are a very bright and very translucent blue. Others are a noticeably darker and less bright. It is noticeably that the bright blue beads tend to have the blobby trailing, whilst the darker ones have the smoother, yellow spotted trailing. The two 'types' described should be seen as the extreme ends of a spectrum. Those in the middle cannot be easily assigned, and as this would be very subjective no attempt has been made, but the extreme ends are clearly different. (This was confirmed by showing the beads as laid out to people other than the author). It would seem very probable that the blue and white beads represent at least two batches and given the different way in which the trailing is applied at least two bead makers. It should be stressed that in each case this should be regarded as a minimum. There are some, for example, that are noticeably oval in outline, but whether this should be seen as evidence for a third hand is open to question.

The beads retain information about how they were made. SF 200 (fig. 73) consists of two beads joined close to the perforation at one point. SF 185 retains a very sharp spike by one side of the perforation and SF 192 has a raw scar in that position (fig. 73). Several others have sharp irregularities around the perforations. Many show a combination of small chips around the perforation and dulled bands. The evidence suggests that they were made by trailing blue glass around a mandrel, which was then tooled into individual beads and trailed. The end result would have been a cylinder of beads joined by thin collars. When this cylinder had been removed from the mandrel and was cold they would have been snapped apart resulting in the little chips seen around the perforations. Any spiky irregularities would have been ground away resulting in the dulled bands that can be seen.

This group gives every appearance of being very new. It is to be expected that if they had been much used the fresh appearance of the chips around the perforations would have been dulled through wear. Other than SF 185, and possibly SF 192, all of these beads were wearable and it is not a workshop group in the normal sense. Such groups are characterised by deformed and misshapen beads, small trails, fragments of glass retaining pincer marks and the like. A good example of such a group can be seen at York (Bayley and Doonan 2000). This shows all the characteristics of the sort of debris that can be expected and this group contains none of them. Four examples do show strain-cracking and in one case the bead is now granulating (SF 202, 204, 203, 453). These defects though were probably not apparent at the time when the group was deposited.

This type of bead is a relatively common one. It is Mrs Guido's Group 5A, which she dates from the fourth century BC to the seventh century AD whilst admitting that the early ones are not so strongly coloured as ones such as these (Guido 1978, 63-4). She listed just under fifty examples in her schedules. More have been found since then but the total number is still less than seventy. This find has thus tripled the number known which is quite remarkable. Dating beads is always difficult as they can survive long after they were made. A broken bead string merely results in many loose beads to be re-strung in a different pattern possibly incorporating new beads or indeed older ones. There is also the problem of residuality. This explains the long date spans derived from the contexts that they were found in that Guido assigns to different types. If one looks in more detail at the strongly coloured blue ones found in dated contexts there is a distinct concentration in ones of the middle to late first century. An example from Usk came from a pre-Flavian context (Manning *et al* 1995, 107 no 4). One came from an early context in the legionary baths drain at Caerleon and can be dated to AD 75-85, whilst four others are from the slightly later phase dated to c. AD 85-100/10 (Brewer 1986, 147, nos. 7, 17-20.). These clearly reflect loss whilst in use. Another came from Castleford in a context dated to C. AD 80-88 (Cool and Price 1998, 186 no. 108). This concentration of dates may be reflecting nothing more than the fact that the mid first century is the period when it first becomes easy to closely date items due to the influx of Roman material culture. On balance though, it would seem that the most likely period for the deposition of a freshly made group such as this would thus seem to be in the first century AD.

The other type of bead present consists of a drawn cylinder of red glass (appearing opaque). The diameter of the beads in all cases is 5 to 5.5mm. Six complete examples are present ranging in length from 40 to 49mm. Another thirteen beads of this type were assigned small find numbers. They range from recognisable fragments where one end only is broken to small slivers and strands. Calculating the original number of red beads in the pit is thus difficult, but ten broken fragments ranging in length from 35 to 50mm were present suggesting a minimum of sixteen. The way in which the glass has weathered is very unusual. Even the complete examples retain a granular grey/brown appearance. Some fragments are so fibrous that they resemble straw. I had never encountered glass that had devitrified in this way before but Professor Ian Freestone informs me that he has seen something similar in orange-red mosaic tesserae from San Vincenzo (Italy). He suggests that the fibrous effect is caused by the devitrification following the lines of the internal bubbles which, as the tubes forming the beads are drawn, are naturally elongated parallel to the length of the bead. He further observes that devitrification like this is sometimes caused by the glass being very low in calcium which would make the glass unstable. Without chemical analysis it would not be possible to confirm that this was the case here, but something like it may be suspected.

The use of red glass to make beads is very unusual in both Iron Age and Roman bead-making tradition. Within a Roman context the presence of red beads often indicates a very late fourth or fifth century date. Such a date is unlikely here in the light of the association with the blue and white beads. The form of the bead is also unusual.

Long cylindrical beads are not part of the late Iron Age bead making tradition, as annular forms were preferred at that time. They do occur in the Roman tradition but in that a bead would be considered long if it was 20mm in length, rather than the 40 to 50mm length that appears to be the rule here. Thus in both colour, form and the type of glass used the red beads appear to be very unusual and, as far as I am aware, they are unparalleled.

Altogether this is a most unusual group. Glass beads are not generally thought of as something that was appropriate to hoard, but this group should probably be thought of in that way. The deposition of so many new beads suggests that they were regarded as being of value. What the cause of the deposition was we can only guess. Was it for safe keeping, was it to appease or please a deity? If it was for safe keeping, did these beads have a special value to the community in which they were initially used that went far beyond merely personal ornament? Were they the mark of a special rank or role within the community? To speculate further, this group *could* have been deposited about the time when the Roman army was campaigning in North Wales culminating in the attack on Anglesey in AD 60 (Tacitus *Annals* XIV. 29-30). Was the stress the community was under as the result of this, the cause of the deposition? It may be noted that several of the mid to later first century examples of blue and white beads cited above came from military contexts, and it could be argued that they might have been the possessions of soldiers who had fought in the Anglesey campaign. The Usk example is pre-Flavian, and all could have been deposited within two decades of those events. Were they the spoils of war, taken from the defeated enemy because they had marked individuals as special in some way? As already noted this is speculation, but what the Bryn Cegin bead cache undoubtedly suggests is that Guido Class 5a blue and white beads may have had a value to their owners that has not hitherto been suspected.

### **Catalogue excluding contents of [2104]**

Prismatic bottle body fragments; Blue/green,  
SF 747            T3, context 9182  
SF 751            T3, context 9182  
SF 886            T3, context 9167

- SF 676 Long biconical bead; opaque mid blue glass. Length 12mm, diameter 4mm, perforation diameter 1mm. T2, context 2002.
- SF 727 Annular bead. Blue/green ground with band of opaque white glass running around girth into which are set 9 translucent deep blue spots. Length 11mmmm, diameter 20mm, perforation diameter 3mm. T3, context 9122.
- SF 749 Prismatic bottle body fragment; triangular. Edges ground smooth. Dimensions 31 x 28mm, thickness 8m. T3, context 9187
- SF752 Bottle, blue/green. Fragment from edge of reeded handle. Also one small chip. T3, context 9182
- SF 753 Spherical bead, slightly irregular; blue/green glass. Length 9mm, diameter 10mm, perforation diameter 2.5mm. T3, context 9182.
- SF 754 Plano-convex counter; blue/green. Four strain cracked fragments forming approximately one-third. Diameter c. 15mm, thickness 7mm. T3, context 9182.
- SF 755 Prismatic bottle body fragment; rectangular. One edge ground smooth. Dimensions 33 x 13mm, thickness 4.5mm. T3, context 9231.
- SF 1039 Body fragment; blue/green. Distorted by heat. Dimensions 23 x 14mm, wall thickness 2mm. T2, context 2036.

### **Acknowledgements**

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## APPENDIX XIII: METAL OBJECTS

### XIII.1 Iron, lead and copper alloy objects

Evan Chapman

#### *Catalogue*

##### *Copper alloy*

- SF369 Plate fragment the two longer, opposite, edges appear original, but the other two are clearly broken. There are faint traces of incised decoration on one face. 28x22x2mm (context 3002)
- SF372 Roughly L-shaped lump with the remains of a socket in the thicker end. Very little origin surface survives. Just possibly the remains of a draw or cupboard handle. 20x17x11mm (context 3002)
- SF517 thimble apparently formed of a copper alloy inner shell with the remains of a white metal (or possibly iron) surface layer, which had the characteristic thimble dimple pattern. 23x17mm (context 2002)
- SF587 Post-medieval rectangular buckle, with a curved profile. There are traces of beaded decoration around the edges of the front face. The tongue and axial bar are missing and the frame is in two pieces. 37x34x2mm. (context 3002)
- SF710 Flat, post-medieval, button, diameter 21mm (context 3486)

##### *Iron*

- SF121 small triangular lump 35x31mm (context 2034)
- SF478 short length of rod, probably part of the shaft of a nail, length 28mm (context 3018)
- SF487 fragment from a strip, 78x34x3mm (context 4047)
- SF591 bent nail (context 3383)
- SF592 nail, length 59mm (context 3271)
- SF708 strip, in two pieces, 150x47mm (context 1007)
- SF709 sub-triangular plate, 73x53mm (context 1007)
- SF729 nail head (context 9168)
- SF764 curved bar fragment (context 9173)
- SF911 horseshoe (context 1135)
- SF912 lump with small square core of iron (context 1053)
- SF913 horseshoe fragment (context 3522)
- SF914 horseshoe (context 3522)
- SF915 horseshoe (context 3522)
- SF916 horseshoe (context 3522)
- SF917 horseshoe fragment (context 3342)
- SF918 screw or bolt (context 3116)
- SF919 horseshoe fragment and strip bent up at one end, 115x53mm (context 1070)
- SF927 small triangular lump 38x33mm (context 9303)

##### *Lead*

- SF161 waste, 10g (context 2002)
- SF162 domed oval, possibly a weight, 49x37x13mm, 132g (context 2002)
- SF163 folded sheet fragment, 21x15x4mm, 8g (context 2002)
- SF367 waste, 15g (context 3002)
- SF368 irregular lump with possible traces of perforations, 41x27x14mm, 95g (context 3002)
- SF371 sub-rectangular piece of sheet lead with a notch in the middle of each short edge, possibly a tag of some sort, 22x15x1mm, 4g (context 3002)
- SF518 sheet fragment, 22x17x2mm, 4g (context 2002)
- SF519 Off cut from a strip, 16x13x3mm, 5g (context 2002)
- SF599 slightly irregular curved strip, probably the remains of a ring or hook, diameter c.20mm, thickness 3mm, 2g (context 3484)
- SF996 minute fragment, 5x4x1mm, <1g (context 4197)
- SF1092 irregular lump, waste, 107g (context 1002)

##### *Metal Detector Finds*

SF165 Flat copper alloy button, diameter c.27mm

Flat headed copper alloy stud with thick shaft of circular section, diameter 15mm, height 9mm, diameter of shaft 5mm.

Rectangular lead washer with circular perforation. 20x17x3mm, diameter of perforation 6mm.

Triangular off cut of lead sheet, 22x19x2mm. (context 2002) metal detected objects



SF1093 3 flat copper alloy buttons, diameters c.15mm  
Copper alloy bell-shaped terminal with loop on top. Filled with remains of leather. 27x14x11mm  
Copper alloy elongated D-shaped buckle or loop. 27x27x3mm  
Shotgun cartridge cap  
Copper alloy ring or pipe off cut, diameter 20mm  
Short length of square sectioned copper alloy rod, length 33mm, thickness 3mm  
Conical copper alloy ferrule or nozzle, length 21mm, diameter 19mm tapering to 14mm  
Copper alloy knob, the head is bulbous with a perforation in one side and the shaft is threaded, length 39mm  
Domed copper alloy stud head on an iron shaft, diameter 10mm  
Lead seal from sack of fertiliser or similar  
Fragment of a hard white metal plate  
Lead / lead alloy cylinder  
Lead rod of circular section, stepped in at one end, length 29mm, diameter 18mm  
Lead shot of various sizes  
Curved strip of lead  
Off cut of lead sheet  
Flat lump of waste lead (+) – metal detector finds

### ***Conclusions***

Most of the finds examined are, in themselves, undatable. Those that are, are clearly of a post-medieval (18<sup>th</sup>-20<sup>th</sup> century) date, and the remainder are most likely to be of similar dates. The copper alloy plate fragment (SF369) could be Roman, it would certainly not be out of place in a Roman context, but in itself is not definitely Roman. In my opinion there is nothing amongst the material worth further study or publication.

## **XIII.2 Conservation and analysis of the roman seal matrix box (SF 615)**

Phil Parkes

### ***Background***

The object was found during excavations at Parc Bryn Cegin, Llandygai. It was delivered to Cardiff University during August 2005. The brief was to conserve the copper alloy object and analyse the contents in order to aid identification.

### ***Summary***

The object was identified by Janet Webster (Cardiff University) and Mark Lewis (Curator, National Museum Caerleon) as being a Roman seal box, used to protect the wax seal during transport. The box is rectangular and decorated with a simple celtic-type design in a cobalt-blue enamel, with a calcium antimonate opacifier. Much of this enamel survives in a good condition. It also appears that there was another coloured enamel in the areas around this, possibly a red, but the remains are very decayed and mostly missing.

Within the box are the remains of a red-coloured substance, which analysis showed to be beeswax with a red ochre (iron oxide) pigment used to colour it. A block of dirt and fibrous material was also present within the seal box. Two samples of the fibrous material from inside the box were examined under a binocular microscope but appeared to be naturally occurring vegetable fibres rather than the 'string' which may have been used to secure the document.

### ***Condition***

On arrival the object was in a poor condition (*Fig. XIII.1*). It was broken into two larger pieces, with smaller pieces accompanying it. The metal surface was covered with a layer of dirt beneath which is a powdery corroded surface. The object contained what appears to be dirt with fibres within it and a hard red-coloured substance.



Figure XIII.1: Object before conservation

### **Conservation**

The object was x-rayed prior to conservation (*Fig XIII.2*). This revealed a swirling Celtic-type decorative pattern on the surface of the object, possibly inlay of some sort. The x-ray of the smaller part revealed holes, although no apparent decoration.

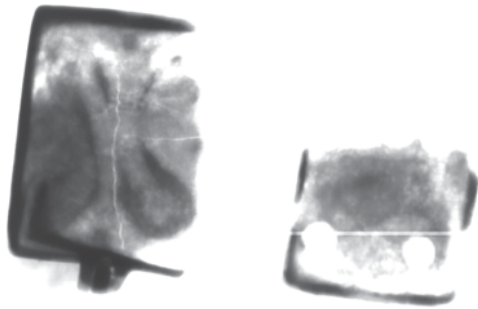


Figure XIII.2: X-ray image of the 2 larger parts of the object

The object required consolidation prior to cleaning due to the extremely friable nature of the corroded surface. Consolidation was carried out with 5% and 10% solutions of Paraloid B72 in acetone, applied by brush. Several applications were made in order to give a workable surface. The object was then cleaned mechanically using a scalpel and glass bristle brush. This removed the overlying dirt and revealed an inlaid blue enamel design. Possible remains of other enamels were also revealed, although these were extremely decayed. Some dirt remains on the surface of the object as removing it is likely to remove the small amounts of decayed enamel which survive on the object.

After cleaning the parts were readhered where possible, using a 20% solution of Paraloid B72 in acetone to seal edges, then Araldite 2020 epoxy resin to adhere the two pieces. The large chunk of red substance inside the object, which was loose, was readhered with a spot of HMG Paraloid B72 adhesive.

Samples of the material from the inside of the object as well as other loose fragments, which could not be readhered, were separated out and packaged in crystal boxes for future work.



Figure XIII.3: Object after conservation

#### **Analysis**

A sample of the hard red substance from inside the seal was taken and examined using a CamScan MaXim 2040 analytical scanning electron microscope (SEM) with backscattered electron (BEI) detectors and an Oxford Link ISIS energy dispersive X-ray spectrometer (EDX).

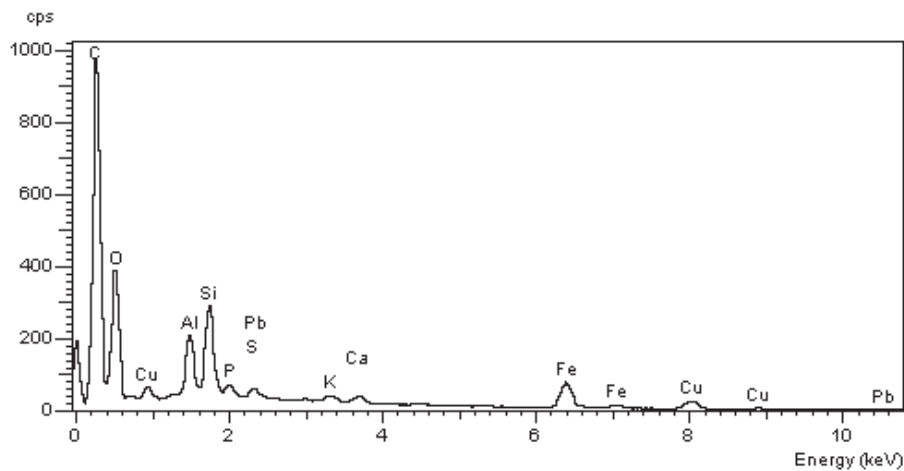


Figure XIII.4: SEM-EDX analysis of red substance

The analysis indicated that iron was present in the material, as well as copper, lead and silica from the copper alloy and dirt (*Fig XIII.4*). The presence of the iron is likely to be as an iron oxide, possibly indicating a pigment.

Another small sample of the red substance was placed into a sample tube and had a small amount of chloroform added to it in order to separate the organic and inorganic components.

The inorganic component was analysed using X-ray diffraction (a Philips PW1710 diffractometer with  $\text{CuK}\alpha$  radiation at 35kV and 40 ma for 25 minutes). The mineral phases were identified from the diffraction data using an identification software package PW1876 PC-Identify Version 1.0B based on the ICDD (International Centre of Diffraction Data) powder diffraction database of diffraction patterns

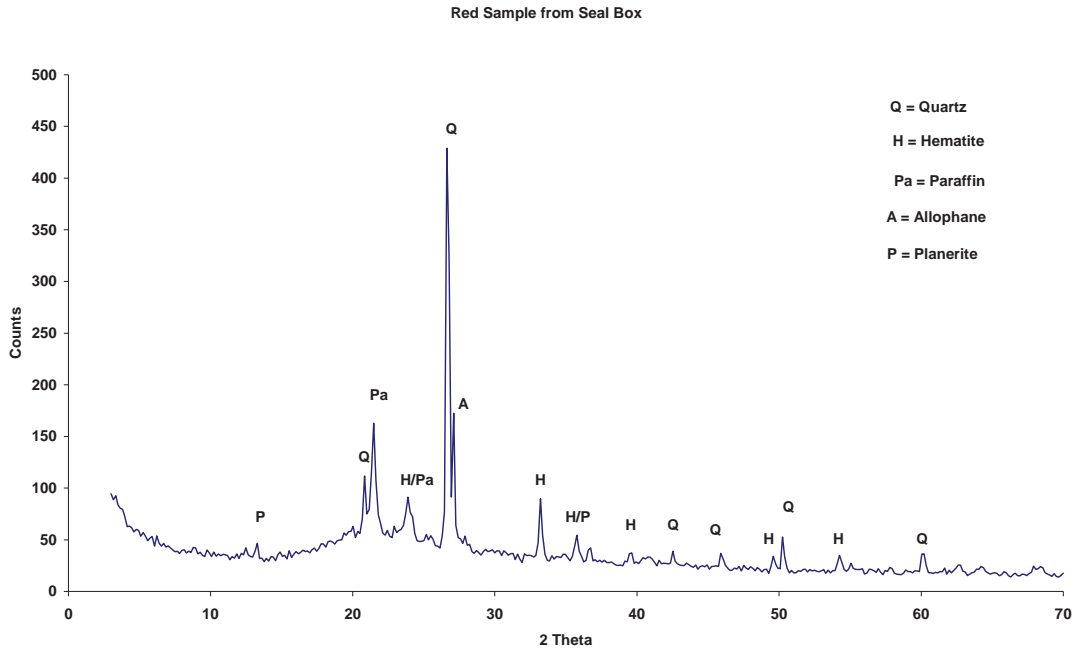


Figure XIII.5: XRD analysis of the red substance

The results (*Fig. XIII.5*) show that haematite (iron oxide) is indeed present within the substance, most likely indicating the presence of a red ochre pigment.

The organic matter extracted from the red substance was analysed using a Perkin-Elmer Spectrum One FTIR Spectrometer. The sample from the seal box was processed (red line below) and compared to a sample of modern beeswax (blue line below). The results are conclusive that the organic component of the substance within the seal box is beeswax.

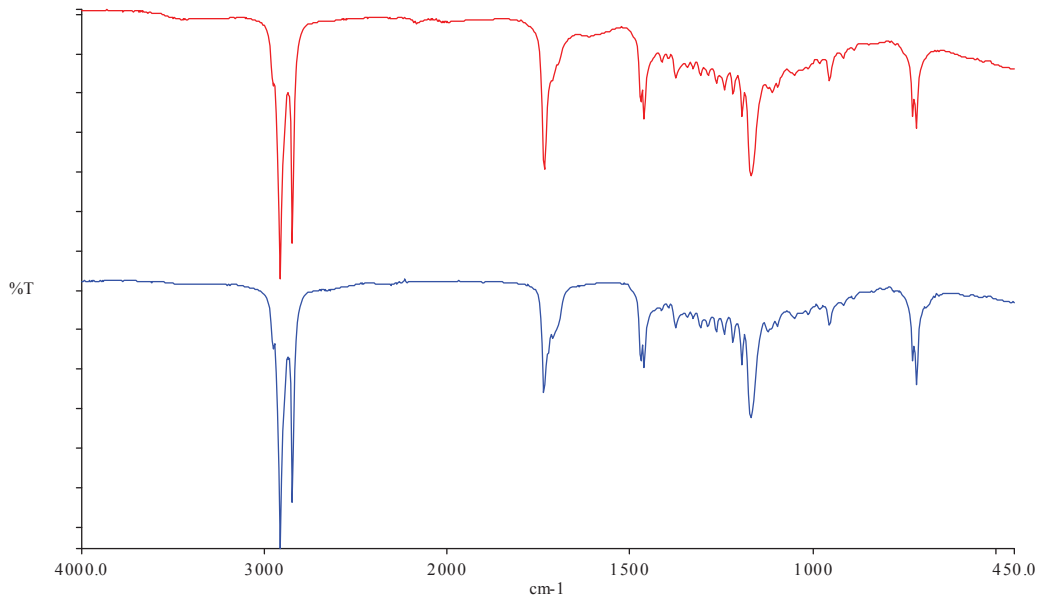


Figure XIII.6: FTIR analysis of the organic component of the red substance: Red line is sample, blue line is modern beeswax

***Storage and Display***

Although the object has been consolidate and readhered it remains fragile and should be handled with care. I would recommend that it be stored in a sealed box with silica gel to maintain a low relative humidity (<40% RH). If a low humidity environment cannot be provided for the object on display it should be inspected regularly for any signs of fresh corrosion, usually seen as brighter green spots on the surface.

## References

J. D. Bateson, Enamel-working in Iron Age, Roman and Sub-Roman Britain: the products and techniques, BAR British Series 93, 1981

### XIII.3 Description and discussion of the seal box (SF 615)

Evan Chapman

This is a large rectangular Roman seal box (Fig. 67) used to protect the wax, often impressed with a seal, which secured the binding of a packet or writing-tablet. The lid is decorated with a scroll pattern in a Celtic sinuous, reversed, 'swash N' design (Kilbride-Jones 1980, 187; MacGregor 1976, xix), with an additional dot in the middle of each edge. The 'N' and the dots are inlaid with blue enamel, the field was also originally enamelled but no clue to its colour now remains. The four circular motifs within the 'swash N', at the ends and the angles, now also lack their enamel suggesting that they may well originally have been the same colour as the field. The hinge is in the middle of one of the shorter edges. The base is now incomplete but appears originally to have been pierced by four holes in the bottom. There is a patch of brown organic material of uncertain composition, about 15mm<sup>2</sup>, adhering to one corner of the base. Lid: length 33mm, width 25mm [broken]; depth 10mm; base: length 32mm, width 23mm, depth 5mm.

There is an apparently virtually identical example from Lincoln in the British Museum (Brailsford 1951, 78 fig.40.10). Related examples, with the 'N' the 'right way' round are known from Caerleon (Lloyd-Morgan 2000, 357 no.51); Chesters, Northumberland (Kilbride-Jones 1980, 187 fig.56.5); Great Walsingham, Norfolk (Bagnall Smith 1999, 42 no.54); London (Hattatt 1989, 462 no.142); Humby, Lincolnshire (Ward 1911, 228, fig.64.G); and Wroxeter (Baker *et al.* 1997, 197 no.2).

Date wise it would fit comfortably with the second century Roman pottery found in the later phases of the roundhouse.

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### XIII.4 Coins and tokens

Edward Besley

#### Find

- 128 Probably a second-century *sestertius*; worn and corroded.
- 366 (Marcus Aurelius, AD 161-80): silver *denarius* (fragmentary) in the name of Divus Antoninus; reverse DIVO PIO, altar, as RIC (M.A.) 441; c.161, commemorating the recently deceased Antoninus Pius (138-61).
- 667 Probably a 1<sup>st</sup>-2<sup>nd</sup> century AD *as* or *dupondius* but no design survives.
- 159 Uncertain copper alloy, perhaps post-medieval.
- 160 Uncertain copper alloy, likely to be Roman.
- 586 Silver penny, Edward I (?), London. The coin is heavily worn, clipped and holed; weight 0.51g (7.8gr). Likely to have been lost in the 15<sup>th</sup> (or even early 16<sup>th</sup>) century.

- 4 Uncertain; perhaps a penny of George III, 1806-7 issue.
- 5 George III, penny, 'Cartwheel' type, dated 1797; somewhat worn.
- 158 George VI, sixpence (.500 silver), dated 1944; somewhat worn.
- 370 Anglesey, Parys Mines Co, copper token halfpenny, dated 1788.
- 373 George III, halfpenny for Ireland, dated 1805.
- 516 George V, halfpenny, date uncertain.
- 921 Probably George III, halfpenny, 1799 or 1806/7.
- 922 George III, halfpenny, probably 1806-7 issue.

Metal-detected:

- 1094a Copper halfpenny, probably George III, 1806-7.
- 1094b Victoria, copper farthing; uncertain date, pre-1860.
- 1094c Ireland: copper alloy weight for a French gold *pistole*; first half of eighteenth century.

### **XIII.5 Report on metallurgical residues and clay**

Peter Crew

#### ***Introduction***

Some 1,500 g of slag and other materials thought to be metallurgical residues and some 500 g of clay were submitted for assessment. The majority of this material was recovered, from a wide range of contexts, during the excavations. The post excavation programme of flotation revealed that many soil samples contained small quantities of magnetic slag.

All this material has been examined visually and a catalogue with brief descriptions has been prepared (Table XIII.1). One piece of slag, from roundhouse E, was cut and polished for microscopic examination.

#### ***Material types***

Eight types of material were recognised, as listed in the catalogue and described below.

*Clay.* The clay samples vary considerably in colour and fabric. A few pieces are not burnt, though the majority is lightly and evenly burnt to a pink or pink-red colour. None of this clay is necessarily associated with metalworking and it most probably derives from domestic hearths or, possibly, from ovens. The lack of shaping or wattle impressions makes it unlikely that the clay was used as daub.

*Lining.* There is one piece of quartz grogged clay (SF656) from roundhouse E. This is heavily vitrified and would have formed in the high temperature zone of a smithing hearth, near the blowing hole. The grog would have been deliberately added to make the clay more refractory.

*Smithing hearth slag cakes.* There are two nearly complete examples of smithing hearth slag cakes, (SF577) from roundhouse A and (SF600) from a pit associated with this roundhouse. These cakes form in a smithing hearth just below the blowing hole and are usually attached to the vitrified clay lining, hence the broken front surface when they are removed to clean the smithing hearth. These slags typically have a plano-convex shape or a convex-convex shape and the lower surfaces can have a characteristically contorted surface due to the slag cooling in a bed of small charcoal. These cakes are formed from slag and hammer scale deriving from the iron being refined or forged, mixed with some clay fluxed from the high temperature zone of the hearth. The size of the cake depends both on the cleanness of the iron stock being forged and the time for which the hearth has been used. The larger example, weighing over 700 g, is towards the upper end of the weight range for smithing hearth slag cakes and represents a full day's work, forging or refining quite a large quantity of iron. It is a particularly well-formed cake and demonstrates that the smith had good control over his hearth conditions. These slag cakes are quite robust and are often found in a complete state and it is curious that more examples were not found during the excavations.

*Slags.* The majority of the slags found are small amorphous prills and broken fragments, which are quite often magnetic. None of these slags are in themselves diagnostic of a particular stage of the iron-working process. However, the lack of smelting residues, the small overall weight of slag found and the two smithing hearth slags make it most likely that all of the slags from Parc Bryn Cegin are from iron smithing. The prills would have formed in the hearth, cooling in the charcoal bed, but had not become incorporated in the smithing hearth slag cake. The broken fragments are probably from the removal of hearth slag cakes. The slags also include small pieces of low density vesicular glassy material, which forms from the hearth lining being fluxed by fuel ash.

The largest piece from (SF707), from roundhouse E, was cut and polished for microscopic examination. This showed the slag to be wüstite (iron oxide) rich, with frequent tiny droplets of iron and with iron shells



around small fragments of charcoal trapped in the slag, which would have created locally reducing conditions. This is a slag typical of smithing.

*Flotation residues.* The residues from floated soil samples with possible metallurgical associations were examined for the micro-residues, which are diagnostic of iron smithing. The residue from (SF1062) from roundhouse E produced 21 g of magnetic material, most of which was of irregular shape, but there were several small slag spheres which are formed during the smithing process. The residues from some 60 other samples, from a wide range of contexts, produced only tiny amounts (less than 1 g) of similar irregular magnetic material. It is curious that only one of these residues contained hammerscale, albeit only 2 flakes. Scale can fragment to a magnetic dust, which can be lost in flotation, but some hammerscale usually survives from smithing contexts. Either it was not recognised or was not recovered because of the procedures used. On its own these residues are not diagnostic but in view of the general character of the other slags it is almost certain that they are from smithing. The very small quantities of material recovered suggest that most of the residues are in secondary or tertiary contexts.

*Coal and coke.* A very small quantity of coal was recovered from (SF935) in roundhouse D. Several other samples (SF730, 797, 936, 939) from roundhouse C and the gully of house D had small quantities of material which is almost certainly coke. This would have been produced fortuitously under reducing conditions in a smithing hearth and is an indication that coal fuel was used. Although coal can not be used for smelting, mainly because of its sulphur content, there is growing evidence for the use of coal in Roman and Medieval smithing sites. The source of this coal was most probably one of the well known Anglesey deposits, which were mined during the historic period.

*Iron.* One find of iron (SF995), heavily mineralised and coated in corrosion products, is most likely to be forge waste and thus fits with the general evidence for smithing.

*Glassy slag.* There is one piece of dense glassy slag (SF338), which is not a normal residue of the iron-working process. It was suggested in the post-excavation catalogue that this may be related to glass working, but there is no other evidence to support this hypothesis. It may be that this material is simply molten glass, from a discarded object.

### **Summary**

All of the metallurgical residues derive from the refining and smithing of iron. As there is no smelting evidence from this site, it is most probable that the iron stock in the form of partly refined billets or bars was brought to the site from elsewhere. The total weight of material recovered, less than 1.5 kg, could have been produced from only a small number of smithing operations. However, it is probable that this collection of debris is far from complete, either in terms of material types or of the quantity likely to have been produced. Some of the material derives from Romano-British contexts relating to the hut group, from where there is some evidence for the use of coal as fuel. The small deposit from outside roundhouse E may be of earlier date, which will be confirmed by the radio-carbon dating programme.

The evidence from Parc Bryn Cegin is a useful reminder that such debris is ubiquitous, though it is not always recognised nor reported adequately.

**Table XIII.1: Catalogue of metalworking debris**

<b>Find No</b>	<b>Context</b>	<b>Material</b>	<b>Wt (g)</b>	<b>Description</b>
338	3000	Glassy slag	33	Dense glassy flow with cooling surfaces, generally a dark grey colour with lighter streaks; pale green colour visible in thin pieces.
577	3271	Slag cake	221	Irregular flattish slag cake, 75 x 65 x 15mm thick, lightly magnetic. Small smithing hearth slag cake.
578	3276	Slag	2	Small piece low density glassy vesicular slag
600	3490	Slag cake	793	Large cake of dense slag, 125 x 100 x 30mm thick. Convex-convex shape, broken front. Magnetic throughout. Smithing hearth slag cake.
617	4282	Mn wad	11	Small fragments of soft Mn-rich concretion, natural deposit
620	3490	Slag	23	Irregular prill of non-magnetic slag
655	4250	Slag	11	Vesicular glassy low density slag, non-magnetic
656	4250	Lining	32	Quartz grogged clay 25mm thick, heavily vitrified for 10mm, with dark glassy cooling surface. Hearth lining from near blowing hole.

662	4250	Slag	8	Dense magnetic slag, coated with secondary corrosion products
707	4250	Slag	257	Some 60 small pieces slag, including fragments of lining and dense prills, some magnetic. Largest piece cut and polished.
730	9107	Coke	5	Low density glassy black material with small evenly sized vesicles
796	4276	Stone	15	Dense quartz rich stone
797	3892	Coke, slag	1	One piece coke (as 730), one fragment of fuel ash slag
935	3959	Coal	<1	Tiny fragments of coal
936	3959	Coke, slag	7	Tiny fragments of coke (as 730), one piece low density fuel ash slag
939	3582	Coke	2	Tiny fragments of coke (as 730)
995	9446	Iron	3	Two flat flakes fragments of mineralised iron, coated with corrosion products. Probably forge waste.
1062	4250	Slag	21	Small irregular fragments of magnetic slag, including several spheres and prills
1147	9052	Slag	7	Glassy vesicular non-magnetic fuel ash slag
1163	4250	Slag	14	tiny fragments of magnetic slag
1164	9052	Slag	4	tiny fragments of magnetic slag, with some spheres
1210	4229	Coal	<1	tiny fragment of coal
1245	4250	Slag	9	tiny fragments of magnetic slag with some spheres
1304	9317	Slag	<1	tiny fragments of magnetic slag, two flakes hammer scale
1328	4250	Slag	16	small fragments of magnetic slag
1329	4250	Slag	14	small fragments of magnetic slag with some spheres
1330	4250	Slag	12	small fragments of magnetic slag with some spheres

## APPENDIX XIV: THE BIOLOGICAL REMAINS

Alexandra Schmidl, John Carrott and Deborah Jaques

### Summary

*This report presents the results of analyses of assemblages of biological remains recovered from a large number of sediment samples from excavations at Parc Bryn Cegin, Llandygai, Bangor, Gwynedd, North Wales. The excavations revealed features dating from the Early Neolithic to the medieval period overlain by eighteenth and nineteenth century field boundaries, including an Early Neolithic building, several Mid to Late Neolithic pit groups, Early Bronze Age burnt mounds, a Mid Iron Age ring-groove roundhouse and several other roundhouses of a Late Iron Age/Romano-British settlement, 6<sup>th</sup>-7<sup>th</sup> century metalworking hearths and a medieval corn drier. In addition, a small number of subsamples extracted from monoliths were examined for pollen survival.*

*Ancient biological remains recovered from the samples were largely restricted to small quantities (though there were occasionally quite large amounts) of poorly preserved charcoal representing the remains of both structural timbers and wood used as fuel. All of the identified tree species would have been found in local woodlands of their respective periods. Small numbers of other charred plant remains, primarily of cereals and hazelnut shell, were recovered from a significant proportion of the samples. In most cases, these were of little interpretative value but did provide material for an extensive series of radiocarbon dates and a subsequent chronological analysis. A small number of charred plant assemblages from deposits associated with the Late Iron Age/Romano-British Roundhouse A, the nearby (but much later) medieval corn drier and the 6<sup>th</sup>-7<sup>th</sup> century metalworking hearths, were able to provide rather more information.*

*A single fragment of unstratified oyster shell was recovered and there was a small quantity of bone, most of which was burnt. None of the bone appeared to be human (though the poor preservation means that this possibility cannot be entirely excluded) and it is likely that, regardless of date, most of the vertebrate remains represent animal bones discarded as food or butchery waste.*

*No pollen survived with the subsamples examined.*

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Table XIV.2a. Biological remains recovered from samples from features associated with the Late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating: Pit Group I.

Table XIV.2b. Biological remains recovered from samples from features associated with the Late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating: Pit Group II.

Table XIV.2c. Biological remains recovered from samples from features associated with the Late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating: Pit Group III.

Table XIV.2d. Biological remains recovered from samples from features associated with the Late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating: Pit Group IV.

Table XIV.2e. Biological remains recovered from samples from features associated with the Late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating: Pit Group V.

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Table 10. Parc Bryn Cegin, Llandygai, Bangor, Gwynedd, North Wales: Vertebrate remains from all periods in context number order.

Figure XIV.1. Relative proportions of charred cereals in the larger grain assemblages recovered from deposits associated with Roundhouse A (including those from the possible Corn Drier 3671).

Figure XIV.2. Relative proportions of charred cereals in the larger grain assemblages recovered from deposits associated with Roundhouse E.

## **Technical report: Biological remains from excavations at Parc Bryn Cegin, Llandygai, Bangor, Gwynedd, North Wales (site code: G1857)**

### **Introduction**

Remains recovered from 518 bulk sediment samples ('GBA'/'BS' *sensu* Dobney *et al.* 1992) processed by GAT and twenty-one small subsamples extracted from five monoliths were submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an evaluation of their bioarchaeological potential.

### **Methods**

#### ***Sediment samples***

The bulk sediment subsamples were processed by GAT prior to delivery to PRS, and the unsorted 'flots' (hereafter termed washovers) and biological remains recovered from the residues submitted for evaluation. The weights and volumes of the subsamples were recorded before being placed onto 500 micron nylon mesh in a sieving tank. The light organic fraction was washed over into a 500 micron sieve to collect the washovers. Both the washover and residue fractions of the processed subsamples were dried.

Plant remains were recorded using a low-power microscope (x7 to x45) and seed and fruits were identified by comparison with modern reference material at PRS and the use of published works (Cappers *et al.* 2006 and Jacomet 2006). Larger pieces of well preserved charcoal were randomly selected from different contexts for closer examination and specific identification in order to obtain an accurate indication of the taxa represented within the assemblages. Identification of charcoal was undertaken with reference to the photographs and descriptions in 'Wood anatomy of central European Species' (Schoch *et al.* 2004). Nomenclature for plant taxa follows Stace (1997).

An important consideration during the investigation of the biological remains was the identification and selection of suitable material for submission for radiocarbon dating by accelerator mass spectrometry (AMS), for example, charred grains or hazelnut shell fragments. In some instances no such material was identified within deposits for which it was nevertheless considered important that radiocarbon dating be undertaken and, in these cases, the identification of charcoal from short-lived tree species or unidentified wood of only a few years growth (twigs) was attempted.

There were also twenty-one small sediment subsamples extracted from five monolith samples – Samples 185 and 186 from a pit near the Early Neolithic building, Samples 339 and 492 from hollows which had collected colluvial deposits (some possibly peri-glacial and some due to ploughing) and Sample 491 (which appeared to be a soil forming within a natural glacial hollow). These were examined for the presence of microfossil remains using the 'squash' technique of Dainton (1992). This method was originally developed to rapidly assess deposits for their content of eggs of intestinal parasitic nematodes but routinely reveals the presence of other microfossils, such as pollen and diatoms; in this instance the principal focus being the presence/absence and state of preservation of pollen to determine if more detailed study would be of value. Slides were scanned at 150x magnification with 600x used where necessary.

Only a single fragment of shell was recovered. This was examined and identified as closely as possible but there was too little material to warrant any detailed study.

For the vertebrate remains notes were made, where appropriate, concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as fragment size, butchery evidence and fresh breakage, was noted, where applicable. Fragments were identified to species or species group using the PRS modern comparative reference collection. The bones, which could not be identified to species, were described as the 'unidentified' fraction.

### **Results**

No pollen grains or other identifiable microfossils were recorded from the 'squash' subsamples from the monoliths (Sample 185 – Contexts 1628, 1629, 1631, 1632, 1633 and 1639; Sample 186 – Contexts 1623, 1624 and 1629;



Sample 339 – Contexts 4162 (3 subsamples), 4163 (2 subsamples), 4165 and 4166; Sample 492 – Contexts 4073, 4078 and 4079; Sample 491 – Context 4223 (2 subsamples)) and no further investigation was undertaken.

The detailed results of the investigations of the plant remains recovered from the bulk sediment samples are presented by archaeological grouping in Tables XIV.1 to 9, with summary overviews given in the following text sections (using the same archaeological groupings and in chronological order).

The single fragment of shell was a small (~1 g) flake of an oyster (*Ostrea edulis* L.) valve from an unstratified layer in the area of Context 2141 (Trench 2, Sample 736, Small Find 677).

Very small quantities of burnt bone were recovered from 25 contexts (33 samples) which represented a range of chronological periods. Ten of the deposits were of Neolithic date, with two of Early Iron Age date and three assigned to the Romano-British period. A further six could only be dated as ?prehistoric, whilst four contexts were undated. Most of these deposits were pit fills, with some of the later material being recovered from the fills of gullies associated with Roundhouses A and E. Details of the number of fragments recovered, their weight, and notes on their identification and preservation are presented in Table 10.

### **Early Neolithic building**

Biological remains recovered from 103 sediment samples from fills of features associated with the Early Neolithic building were submitted (see Table XIV.1). Most of the samples contained modern intrusive/contaminant remains in the form of numerous rootlets, earthworm egg capsules and uncharred seeds and fruits of goosefoot (*Chenopodium*), meadow/creeping buttercup (*Ranunculus acris* L./*R. repens* L.), raspberry (*Rubus idaeus* L.), lesser/marsh stitchwort (*Stellaria graminea* L./*S. palustris* Retz) and chickweed (*Stellaria media* (L.) Vill.).

Ancient biological remains were largely restricted to charred plant material, predominantly tiny fragments of silted charcoal. Overall, there was rather little variation in the appearance of the charcoal. This suggests that, although the particular wood species could not be identified, it is likely that most was of one type of wood – as the differing anatomies and moisture contents of different woods, together with variations in decay and combustion, would combine to produce assemblages with a less uniform appearance if more than one species were well represented. Some of the larger charcoal fragments were identified as oak (*Quercus*), hazel (*Corylus*) and, in small quantities, pine (*Pinus*). In five of the deposits, Contexts 1255, 1276, 1293, 1443 and 1445, some of the oak charcoal was in the form of silted ‘slivers’ and probably derived from structural timbers. Pine was only rarely present, being identified from just two deposits (Contexts 1673 and 1696, fills of a post-hole and a stake-hole, respectively).

Fairly large quantities of hazel (*Corylus avellana* L.) nut shell and a few poorly preserved cereal grains (one identified as barley – *Hordeum distichon* L./*H. vulgare* L.) were recovered from Contexts 1405 (fill of Post-hole 1406) and 1513 (packing around Post-pipes 1533 and 1570 within Post-hole 1532 – one of the main aisle posts). Small quantities of charred hazelnut fragments and identifiable cereal grains (emmer wheat - *Triticum dicoccum* Schübl.) were recorded in samples from a number of other contexts associated with the Early Neolithic building. On the east end of the building (fills of Pits/Post-holes 1291, 1335, 1370, 1377 and 1381) and at the eastern gable (Post-trench 1404, and Post-holes 1483, 1495 and 1515). Pits or Post-holes 1394, 1619, 1704, and 1729 and packing material within Post-hole 1779 at the western end and to the west of the building, as well as other fills within the building, also contained a little hazelnut shell and some of these features gave a few cereal grains (mostly eroded, distorted and unidentified) too. A small number of identifiable charred cereal grains was present in the fills of Post-holes 1666 and 1691 and included barley, emmer wheat and naked wheat (*Triticum aestivum* L./*T. durum* Desf./*T. turgidum* L.). Context 1216 (the fill of Pit 1249 located near the south-east corner of the building) produced an assemblage dominated by hazelnut shell (31 fragments) and five cereal grains (which included both emmer and naked wheat).

Evidence of an additional food resource, one charred fruit stone of blackberry (*Rubus fruticosus* L. agg.), was found in Post-trench 1404 inside the east gable end of this Early Neolithic building. Evidence of weeds associated with crop fields were restricted to finds of (*Galium aparine* L.) from Post-holes 1406 and 1483, and sun spurge (*Euphorbia helioscopia* L.) and knotweed (*Persicaria*) from the fill of Post-hole 1666.

### **Late Neolithic Pit Groups I - VIII**

Biological remains recovered from 76 samples (see Tables XIV.2a to 2h) were recorded – although three of the samples from Pit Group I gave no ancient remains (Contexts 1010, 1092 and 1095). Again, most of the submitted remains were of modern waterlogged (not charred) rootlets, with some earthworm egg capsules. More than 60% of the samples were also contaminated with modern seeds and fruits. The most frequently recorded of these was goosefoot, with smaller numbers of black-bindweed (*Fallopia convolvulus* (L.) Á. Löve), elder (*Sambucus nigra* L.), grass family (Poaceae), knotweed, meadow/creeping buttercup, pea family (Fabaceae), raspberry and silver/downy birch (*Betula pendula* Roth/*B. pubescens* Ehrh.).

Charcoal and small numbers of cereal grains formed the bulk of the ancient plant remains recovered. The vast majority of the charcoal fragments were too small or too heavily deformed to be identified. Within the identifiable charcoal fraction, hazel was the most frequently recorded species, followed by oak, with a single piece of pine (*Pinus*) from Context 6065 (Pit Group VI).



Remains of food plants recovered from the samples were restricted to fragments of charred hazelnut shell, which was recorded from all of the Pit Groups (sometimes in large quantities, e.g. Pit Group IV – Context 4019, Pit Group V – Context 4147, Pit Group VI – Contexts 6065 and 6086), and traces of cereal grains in just three deposits. The few cereal grains were from Pit Groups II (Context 4013) and VII (Contexts 3137 and 3142). Most were poorly preserved (distorted and eroded), but at least two cereals were present, namely barley and wheat (*Triticum*).

All of the samples from deposits in Pit Group VIII, which was associated with the Early Neolithic building (from Contexts 1304, 1308, 1554, 1583, 1592, 1594, 1597), gave some charred hazelnut (with fairly large quantities present in Contexts 1304 and 1308) and small amounts of unidentifiable charcoal.

### ***Burnt Mounds***

Ancient biological remains recovered from the 59 samples of this group were restricted to quite large quantities of, mostly unidentifiable, wood charcoal, with a few charred grains and hazelnut fragments. Most of the samples also contained undisaggregated sediment lumps, modern waterlogged rootlets and earthworm egg capsules (see Table XIV.3). Almost half of the samples contained modern contaminants such as fruits and seeds of blackberry, black-bindweed, goosefoot, knotgrass (*Polygonum aviculare* L.), meadow/creeping buttercup, silver/downy birch and thistle (*Cirsium*).

Charred cereal grains were recorded from Contexts 1097, 1720 and 2200 and included barley and emmer wheat. Although, these remains were too few to be of any real interpretative value, their scarcity suggests that it is highly unlikely that crop processing (or domestic activity relating to food preparation) was taking place on any scale in the vicinity of these features.

Other food plant remains were restricted to occasional fragments of charred hazelnut in Contexts 1097, 2169, 2209, 2289, 4210, 4233 and 6016.

The majority of the charcoal fragments were too small or too heavily deformed to be identified. Amongst the identifiable remains, hazel was the most frequently recorded species and there was also some oak. The charcoal from some of the deposits (Contexts 4222, 4233, 4234, 4235 and 4238) was mostly silted ‘slivers’ – probably from structural oak timbers. Seven deposits (Contexts 6014, 6026, 6038, 7040, 7047, 7048 and 7049) gave ‘mineral replaced’ (red-brown coloured from iron oxides) charcoal fragments probably indicating ‘mineral-rich’ water flowing nearby.

### ***Earth ovens***

The 18 samples from earth oven features produced a large quantity of wood charcoal (see Table XIV.4). Most of the samples also contained lumps of fused ash and modern intrusive/contaminant material including waterlogged rootlets, earthworm egg capsules and fruits and seeds of black-bindweed, chickweed, fumitory (*Fumaria*), goosefoot, knotgrass, meadow/creeping buttercup and spurge (*Euphorbia*).

Context 1087 gave two charred cereal grains (barley and wheat) and a small number of charred hazelnut fragments; occasional fragments of the latter were also present in Contexts 1260, 1261 and 3130.

For three of the deposits (Contexts 3122, 3130 and 6062), none of the recovered charcoal was identifiable. In each of the other assemblages the charcoal was predominantly hazel, with lesser quantities oak.

### ***Feature 7055***

The ancient biological remains recovered from three samples from this feature comprised large amounts of wood charcoal, with most of the samples also containing lumps of fused ash and modern waterlogged rootlets (see Table XIV.5). Two of the samples contained modern contaminants in the form of fruits and seeds of goosefoot and knotgrass. A single unidentifiable grain was found in Context 7051 and the charcoal layer from this feature produced mainly hazel. Overall, the botanical remains were too few to be of any real interpretative value.

### ***Roundhouses B, C, D and H***

Ancient biological remains recovered from Roundhouse B (three samples) consisted chiefly of large amounts of, mostly unidentifiable, wood charcoal (see Table XIV.6c). Most of the samples also contained undisaggregated sediment lumps, modern waterlogged rootlets, earthworm egg capsules and modern contaminants such as fruits and seeds of goosefoot and buttercup (*Ranunculus* subg. *Ranunculus*). Remains of food plants were restricted to traces of cereal grain (naked wheat in Context 3148) and one fragment of hazelnut shell in Context 3023.

Forty-nine samples were processed from Roundhouse C, some of which yielded large quantities of, mostly unidentifiable, wood charcoal (see Table XIV.6d). Almost half of the samples contained modern contaminants such as fruits and seeds of blackberry, black-bindweed, elder, fumitory, goosefoot, knotgrass, meadow/creeping buttercup and silver/downy birch. There were a few cereal grains from Contexts 3649, 3672, 3693, 3696 and 3741, from which barley, oat (*Avena*), emmer/spelt and spelt wheat were identified, and there was also a trace of chaff (a glume base) of emmer/spelt wheat – probably representing food waste from hearth areas. There was only a little hazelnut shell which occurred in Contexts 3627 and 3681. Most of the recovered ancient plant assemblages were dominated by

charcoal fragments; some of the larger fragments (from Contexts 3584, 3585, 3648 and 3709) could be identified as, predominantly, hazel, with small quantities of oak.

The ancient biological remains recovered from Roundhouse C/D (four samples) were mostly unidentifiable wood charcoal (see Table XIV.6e) in quite large quantities. The samples also contained modern contaminants such as fruits and seeds of black-bindweed, goosefoot, hemp-nettle (*Galeopsis*) and raspberry. Context 3348 gave a single grain of wheat and some of the larger pieces of charcoal from Contexts 3254 and 3370 were identified as hazel.

The ten samples from Roundhouse D each produced rather small amounts of mostly unidentifiable wood charcoal (see Table XIV.6f). All of the samples contained modern contaminants rootlets and four also included some other modern remains in the form of fruits and seeds of species such as blackberry, black-bindweed, elder, goosefoot and knotgrass. There was no evidence of ancient food plants and the only identifiable charcoal fragments were of oak from Context 3957.

Most of the samples from Roundhouse H (14 in total) produced small amounts of largely unidentifiable wood charcoal (see Table XIV.6k), with larger, though (in general) equally poorly preserved, quantities from five deposits (Contexts 9164, 9167, 9182, 9183 and 9276). All of the samples also contained modern rootlets and other contaminants, such as fruits and seeds of goosefoot, knotgrass, knotweed family (Polygonaceae), meadow/creeping buttercup, pea family, and silver/downy birch, were present in some. Contexts 9164, 9183 and 9276 gave a few charred cereal grains (wheat) and also a little chaff (glume base of *probably* emmer wheat) indicating food waste. Remains of other food plants were similarly sparse, with just a little hazelnut shell from Contexts 3627 and 3681. The assemblages from most of the deposits were dominated by unidentified charcoal fragments, but some larger fragments of hazel were identified in Contexts 9164, 9182 and 9185 and oak charcoal was found in Context 9276.

#### ***Late Iron Age/Romano-British Structures F and G***

Ancient biological remains recovered from Structure F (43 samples) were, once again, mostly of unidentifiable wood charcoal (see Table XIV.6i). Almost half of the samples contained modern contaminants fruits and seeds (including some of blackberry, dock (*Rumex*), goosefoot, knotgrass, knotweed, meadow/creeping buttercup and silver/downy birch). Food plants were restricted to ?emmer wheat from Context 9120 (a grain and a glume base) and hazelnut shell in Context 9075. Some of the charcoal from Contexts 9021, 9053, 9100, 9150, 9313 and 9332 was identified as hazel, and some from Contexts 9120 and 9206 as oak.

The assemblages of ancient biological remains recovered from Structure G (22 samples) were also principally of unidentifiable wood charcoal (see Table XIV.6j). Most of the samples contained modern contaminants of fruits and seeds of fumitory and goosefoot. Contexts 9061 and 9328 contained some identifiable charcoal which was of hazel.

#### ***Roundhouse A***

Ancient biological remains recovered from the 56 samples from Roundhouse A included large quantities of wood charcoal (mostly unidentifiable), charred grains and a few nutshell fragments (see Table XIV.6a). Most of the samples also contained undisaggregated sediment lumps, modern waterlogged rootlets, and earthworm egg capsules, and almost half of the samples contained modern contaminants such as fruits and seeds of blackberry, black-bindweed, goosefoot, knotgrass, meadow/creeping buttercup, silver/downy birch and thistle.

Only a few charred cereal grains were recovered from Contexts 3231, 3267, 3276, 3313, 3344, 3346, 3364, 3495, 3548, 3565, 3575 and 3604. Identified taxa were barley, emmer wheat, naked wheat, oat, rye (*Secale cereale* L.) and spelt wheat. There was also some chaff (glume bases, rachis segments) of barley, emmer/spelt and spelt. Overall, these remains were too few to be of any real interpretative value, though clearly they indicated food waste and hence human activity. Grain assemblages from Contexts 3540, 3669, 3670 and 3718 (the probable corn drier) were far more substantial (see Table XIV.6b) and gave valuable interpretative evidence regarding past crops. Remains (e.g. oat grains and hazelnut shell) from the corn drier were submitted for radiocarbon dating (via AMS) and returned medieval dates between the 11<sup>th</sup> and 13<sup>th</sup> centuries AD which indicated that this feature belonged to a later phase of activity than the roundhouse itself. In addition, Context 3517 (central feature – ?hearth) and Context 3569 (gully) also produced valuable assemblages of cereal grains.

The remains from the vast majority of the deposits were predominantly of charcoal fragments. Some larger fragments from Contexts 3158, 3176, 3188, 3231, 3267, 3313, 3434, 3517, 3561, 3565, 3569, 3669, 3670 and 3718 were identified as oak, hazel and, in small quantities, ash (*Fraxinus*) and pine.

#### ***Roundhouse E***

Ancient biological remains recovered from 36 samples from Roundhouse E included large amounts of mostly unidentifiable wood charcoal, charred grains and a few hazelnut shell fragments (see Table XIV.6g). Most of the samples also contained undisaggregated sediment lumps, modern waterlogged rootlets, earthworm egg capsules and almost 83% contained modern contaminant fruits and seeds including those of blackberry, black-bindweed, dead nettle (*Lamium*), dock, fumitory, goosefoot, grass family, knotgrass (*Polygonum* spp. including *Polygonum aviculare* L.), knotweed, meadow/creeping buttercup, raspberry and thistle.

Nine deposits (Contexts 4197, 4229, 4245, 4247, 4249, 4253, 4266, 4276 and 4282) each gave a small number of cereal grains. Crop plants such as barley, emmer wheat, naked wheat, oat, and spelt wheat, were identified, but there was very little chaff (just glume bases of emmer wheat in Contexts 4197 and 4276). More substantial grain assemblages (see Table XIV.6h) were recovered from Contexts 4179, 4250, 4307 and 4403 and were able to provide information regarding crop husbandry during the 6<sup>th</sup>/7<sup>th</sup> centuries AD. There were a few fragments of charred hazelnut shell from Contexts 4245 and 4307 and a larger quantity was recovered from Context 4249.

Within the identifiable charcoal fraction hazel was the most frequently recorded species (in Contexts 4227, 4249, 4250 and 4379), followed by oak. Context 4230 produced mostly charcoal ‘slivers’ – probably derived from structural oak timbers. There was also a little ash charcoal from Contexts 4179, 4250 and 4403 (particularly the last).

#### ***Bead cache in Pit 2104***

Each of the four samples (from Contexts 2090, 2098, 2125 and 2126) produced some unidentified wood charcoal (see Table XIV.7), which formed the majority of the ancient biological remains recovered. All but one (Sample 226, Context 2125) contained undisaggregated sediment lumps and modern waterlogged rootlets were present in all but Sample 234 (Context 2126). Two of the deposits, Contexts 2090 and 2098, contained modern contaminant seeds of goosefoot and the latter two blackberry fruitstones. A single unidentifiable cereal grain and one fragment of hazelnut shell were recovered from Context 2098 and probably derived from human activities nearby. The small size and poor condition of the fragments of charcoal from this feature prevented any identification to species level and, in general, the plant remains were of no real interpretative value.

#### ***Bronze Age features (pit 1390 and spread 1263)***

Ancient biological remains recovered from two samples comprised moderately large amounts of silted charcoal (see Table XIV.8) – predominantly hazel with a small admixture of oak – and two charred fragments of hazelnut shell. These remains were indicative of human activity in the vicinity, but were of no further interpretative value.

#### ***Other features***

Seventeen samples were processed and fairly large amounts of charcoal, together with a few charred cereal grains and fragments of hazelnut shell were recovered (see Table XIV.9). Most of the samples also contained undisaggregated sediment lumps and modern contaminants (e.g. waterlogged rootlets and modern fruits and seeds of blackberry, fumitory, goosefoot, knotgrass and meadow/creeping buttercup). The majority of the charcoal fragments were too small and/or too heavily deformed to be identified, but, within the identifiable fraction, oak was the most frequently recorded species, with some hazel also present. The charcoal from three deposits (Contexts 1821, 2023 and 3117) was mostly in the form of ‘slivers’ – probably derived from structural timbers. Context 4223 produced several unidentifiable cereal grains and one that could be identified as oat. Remains of another food resource, hazelnuts, were noted in Contexts 9447, 9452 and 9454.

#### **Discussion**

An important consideration in the recording of the biological remains from the sediment samples was the identification of suitable material for radiocarbon dating of the deposits to be attempted. In many cases sufficient charcoal (largely unidentified) was present for this purpose (at least via Accelerator Mass Spectrometry – AMS). However, where present, short-lived plant structures (such as charred cereal grains and fragments of hazelnut shell) should be preferred as these are unlikely to have been stored for more than a few years, so that the date returned is likely to be close to that of the charring event – though consideration must be given to issues of residuality and possible reworking of individual small remains. There are two possible sources of error if charcoal is used for dating. Firstly, the piece of wood may be from the centre of the trunk or a large branch of the tree (‘stem wood’), and the time span between the growth of this wood (its carbon content being fixed at the point of cell formation) and the death of the tree may be several tens (sometimes hundreds, in the case of long-lived species such as oak for example) of years. Secondly, prior to becoming burnt the wood may have been stored or formed part of a structure, also perhaps for many years. Both of these ‘old wood’ problems may result in a radiocarbon date significantly earlier than the charring event being returned. If charcoal is used for dating, then pieces with the waney edge (i.e. where the terminal annual ring is preserved) should be selected—this is most likely on fragments from relatively young wood such as twigs or small branches.

Details of the remains selected for dating and the methods employed to interpret the chronology of the site are presented within the appropriate section of the site report. Dates given in the following text sections reflect the summary conclusions of this study (all dates shown are calibrated radiocarbon dates following the results of the chronological analysis).

Modelling of the radiocarbon dates obtained from samples associated with the Early Neolithic building gave an estimated start date for use of the building of 3800-3670 BC (95% probability) and probably 3760-3700 BC (68% probability) and an end of use date of 3690-3610 BC (95% probability) and probably 3670-3620 BC (68% probability).

The span of use of the building was, therefore, estimated at 10-140 years (95% probability) and probably 40-110 years (68% probability).

The recovered remains included large numbers of fragments of charred hazelnut shell. From this it might be concluded that hazel was a more important food resource than cereals at the Llandygai site at this period. However, one must consider that hazel nutshell is inherently robust and survives charring well. It may, therefore, be somewhat over-represented in these deposits as has been suggested may be the general case for British Neolithic sites (see, for example, Jones 2000, Monk 2000 and Rowley-Conwy 2004). At least three species of cereals were present, namely emmer wheat (*Triticum dicoccum* Schübl.), barley (*Hordeum distichon* L./*H. vulgare* L.) and naked wheat (*Triticum aestivum* L./*T. durum* Desf./*T. turgidum* L.), but only in very small numbers; making the relative importance of the various crops difficult to assess. However, on the available evidence, emmer seems to have been the most important cereal during the Early Neolithic period at Llandygai. The charred remains were mostly representative of waste from the processing of hulled cereals which need to be parched and pounded to separate the chaff – parching involves heating in order to facilitate de-husking of the grains so that remains of these forms are more likely to become charred and so may be over-represented (compared with free-threshing crops) in a charred assemblage.

Most of the British Neolithic sites which have provided archaeobotanical data are located in the chalkland areas of southern England (Greig 1991) where the primary cereals recorded have been emmer wheat (*Triticum dicoccum* Schübl.) and bread wheat (*Triticum aestivum* L.). A Neolithic timber hall at Balbridie, Scotland (Fairweather and Ralston 1993) and two large houses at Lismore Fields, England (Jones, in press) contained large grain assemblages indicating the importance of cultivated cereals. In his 2004 reconsideration of the origins of agriculture in Britain (and elsewhere), Rowley-Conwy (2004) concluded that the Neolithic population was neither nomadic nor dependent mainly on wild foods.

According to the criteria of Asouti and Austin (2005), the charcoal assemblages of the Early Neolithic building can be characterised as representing both short-term (e.g. hearths) and long-term (non-domestic areas such as fills, etc) deposits. Hence, data provided by identification of the charcoal from different features can be used for a palaeoenvironmental reconstruction of the landscape surrounding the site at Parc Bryn Cegin, Llandygai, and also provide information about the human impact caused by the selection of particular tree species for various purposes. Charcoal identified from Post-holes 1254, 1277 and 1294 (forming part of the south wall) and Post-trench 1404 (inside the eastern gable end of the building) was exclusively ‘slivers’ of oak (*Quercus*) and probably derived from structural timbers of the building itself; long-lived oak trees provide excellent timber for the construction of substantial structures (bringing qualities of size, strength and durability). Pine charcoal (identified simply as *Pinus* but in fact it must be Scots pine, *Pinus sylvestris* L., as this would be the only pine species growing in the area at the time) from Post-hole 1676 and Stake-hole 1697 may indicate that this wood species was also used for structural timbers. Hazel (again, identified simply as *Corylus*, but it must be *Corylus avellana* L.) charcoal was also frequently recorded from a variety of deposits within the building. The coppicing of hazel has been employed as a form of woodland management, to provide uniform timber for construction (of, for example, trackways, wattle fencing etc) since the Neolithic and is well documented from across the British Isles (see, for example, Caseldine 1988, Hillam *et al.* 1990, Rackham 1980, Taylor 1988). Mighall and Chambers (1995) have published three pollen diagrams for Snowdonia (North Wales) and have shown that, during the Neolithic period, the woodland of the area was characterised by high proportions of alder (*Alnus*), hazel (*Corylus*) and oak (*Quercus*), with lesser communities of birch (*Betula*) and pine (*Pinus*). Here then, as might be expected, the range of species identified within the charcoal assemblages reflects the availability of wood in the surrounding area and the selection of particular trees for timber.

The assemblages of plant remains recovered from each of the Late Neolithic pit groups were of rather similar composition, consisting largely of small quantities of unidentifiable charcoal. A few gave trace amounts of charred cereal grains which can be interpreted as food waste but were too few to provide an indication of their relative importance. Both of the identified species, barley and wheat, occur frequently at Neolithic sites in the British Isles (Greig 1991). Hazel was the wood species most frequently identified within the charcoal assemblages from the Late Neolithic pit groups and, as above, presumably derived from human exploitation of the local woodlands (see Mighall and Chambers 1995). The assemblages of identifiable remains were too small to provide any significant archaeobotanical information, but material submitted for radiocarbon dating (mostly fragments of charred hazelnut shell) did confirm Neolithic dates (ranging from around 3600 to 2200 BC) for these deposits.

Samples from the Bronze Age burnt mounds yielded very little evidence for crop plants or gathered foods. Occasional fragments of charred hazelnut shell and small numbers of charred remains of barley and emmer wheat were recorded from some of the contexts. Radiocarbon dating confirmed a Late Neolithic to Early Bronze Age date (clustered around 2400 to 2000 BC) for most of the mounds, but one (T6 Burnt Mound 6094) appears to be rather earlier (around 3300 BC) and at least two (T2 Burnt Mounds 2167 and 2287) somewhat later (around 1250 BC).

The recorded plant remains were in accord with Greig’s synthesis of the archaeobotanical evidence for field crop plants from Bronze Age sites in the British Isles, which indicates that barley, emmer and spelt wheat were, in general, the most important cereals of the period (Greig 1991). These food remains were too few to be of any further interpretative value, however. In contrast, many of the burnt mound deposits were ‘charcoal-rich’, though the represented species were, again, restricted to just hazel and oak. The charcoal from the fills of burnt mound Pit 4208



(an irregular oval ‘trough’) was mostly in the form of ‘slivers’ of oak and probably originated from a timber structure associated with this feature. According to the pollen diagrams from Snowdonia (Mighall and Chambers 1995), woodland clearing (for fuel and timber and/or increased space for agriculture and settlement) in the Bronze Age increased the relative proportions of light-demanding wood species, such as alder, birch and hazel, and these were regularly associated with coppicing. It could be argued that this is reflected in the proportions of hazel and oak charcoal identified from these features, with hazel becoming (subjectively) more frequent and oak (generally) less so when compared with the assemblages from deposits associated with the Early Neolithic building. However, this could simply be a consequence of a requirement for the more extensive use of oak timbers within a structure as substantial as the Early Neolithic building.

The samples from the earth ovens produced rather little archaeobotanical evidence. There were a few charred food remains of grains of cereal crops (barley) and gathered resources (hazelnut shell fragments), and a little hazel charcoal to indicate human activity, but no assemblages of any significance. The results from radiocarbon dating indicated that some of the earth ovens (e.g. Earth Ovens 3133 and 6033) were contemporary with the Early Neolithic building and that others (e.g. Earth Ovens 1072, 1230 and 1510) were contemporary with the later (around 1100 BC) burnt mounds (e.g. T1 Burnt Mound 1097, T2 Burnt Mounds 2167 and 2287).

Overall, the assemblages of ancient plant remains recovered from deposits associated with Roundhouses B, C, D and H (which, together with Roundhouse A, form the Late Iron Age/Romano-British roundhouse settlement; Structures F and G may also be related, see below) showed a similar composition. Many consisted primarily of small quantities of fine unidentifiable charcoal, but there were some which gave larger quantities and larger fragments (though these were often still too poorly preserved for identification). The wood species that were identified were confined to hazel and oak; almost certainly originating in nearby woodland. Charred cereal grains of barley, emmer/spelt wheat (*Triticum dicoccum* Schübl./*T. spelta* L.), naked wheat, oat (*Avena*) and spelt wheat (*Triticum spelta* L.) were present in very small numbers, and probably reflect the range of cereals utilised at the site during this period of occupation – radiocarbon results dating this to between, approximately, 200 BC and 400 AD – but were too few for any more detailed analysis. Similarly, the small numbers of fragments of charred hazelnut probably represent the remains of a gathered food resource but were of no further interpretative value.

Structures F and G (possible Roundhouses) gave few interpretable remains. Charred, and most likely ancient, remains included a single cereal grain (emmer wheat) and a trace of gathered resources (one fragment of hazelnut). These, and occasional fragments of charcoal (mostly unidentifiable) were the only indicators of human activity recovered. Comparison of the radiocarbon dates obtained from remains from Structures F and G suggested that they slightly pre-date Roundhouses C and H; their use falling largely in the last third of the first millennium BC and extending into the first century AD (and perhaps the second).

The fifty-six samples from Roundhouse A were, in the main, similarly unproductive of interpretable assemblages of biological remains. Seven of the deposits yielded moderate charred cereal assemblages, however (Table XIV.6b). Unfortunately, the preservation of these botanical remains was rather poor and a relatively large portion (between 37 and 91%) of the cereal grains from each sample could not be identified to species or even genus level (see Figure XIV.1). Experiments by Boardman and Jones (1990) have shown that grains subjected to high temperatures with relatively good oxygenation exhibit gross deformation, ‘puffing’ and loss of surface detail, whereas slow charring in oxygen-deficient conditions produces grains the overall shape and surface details of which are well preserved. The high degree of distortion and poor preservation evinced by the remains would, therefore, indicate a high charring temperature and good oxygenation.

No radiocarbon dates were obtained from deposits other than those associated with the possible Corn Drier 3671, but, stratigraphically, Roundhouse A forms part of the Late Iron Age/Romano-British roundhouse settlement and hence is likely to be contemporary with Roundhouses B, C, D and H (see above). The cereal assemblages from Context 3517 (from a ?hearth) and Context 3569 (gully fill) were consistent with such a date. The most abundant crop plant was spelt wheat, with other cereals such as emmer wheat, naked wheat and rye (*Secale cereale* L.) present in small numbers (see Figure XIV.1). Archaeobotanical evidence indicates that spelt wheat was the main cereal crop of the British Isles at this time (Greig 1991, Van der Veen and O’Connor 1998). The botanical remains from the ?hearth (Context 3517) appear to have been charred (presumably accidental) by exposure to a fairly high temperature, and the low concentration of remains and mixture of crop taxa present implies waste disposal rather than an origin in a store of grain. In contrast, the relatively high proportion of chaff in the assemblage from the gully fill (Context 3569) can be interpreted as a by-product from a late stage of crop-processing (van der Veen and Jones 2006).

Remains from two of the four deposits related to the possible Corn Drier 3671 (Contexts 3669 and 3670) and from the nearby Post-hole 3717 (Context 3718) were sent for radiocarbon dating. Modelling of the results returned consistent results and suggested that the span of use of Corn Drier was 0-160 years (95% probability) and probably 0-90 years (68% probability) – estimated start 880-1160 AD (95% probability) and probably 1000-1130 AD (68% probability) and estimated end 1040-1350 AD (95% probability) and probably 1080-1240 AD (68% probability). Clearly this feature was of much later date than the use phase of Roundhouse A and this was reflected in a marked difference in the character of the cereal assemblages recovered.

Oat (*Avena*) was by far the most frequently recorded of the identifiable grains (see Figure XIV.2) in the deposits from Corn Drier 3671. Where floret bases were present, a precise identification to the cultivated species of oat, *Avena sativa* L., was possible; there were no indications of the presence of the wild form and it seems reasonable to assume that the vast majority (if not all) of the oat remains recorded were of the cultivated species. Other cereals such as barley, naked wheat and rye were identified, but only in low numbers.

Comparison with archaeobotanical data from other medieval sites in Gwynedd, and elsewhere in Wales, suggest that this is not unusual for the period and, indeed, may reflect the general case that oat was the main cereal of the time. An early medieval farmstead at Cefn Graeanog, Clynog-fawr (Gwynedd) produced assemblages with oat as the main cereal (Hillman 1982) and, according to Jones and Milles (1984), a 15<sup>th</sup> century corn drying kiln at Collfryn, Llansantffraid Deuddr (Powys) also yielded an oat-dominated grain assemblage (with lesser components of emmer/spelt and naked wheat).

All of the wild plant species from the samples yielding the larger grain assemblages were common 'weeds' of cereal fields and almost certainly harvested accidentally together with the crop; an assertion strongly supported by their range and, in general, relative abundance in the corn drier deposits and scarcity in the other fills. The most numerous remains were of corn marigold (*Chrysanthemum segetum* L.) and brome (*Bromus*). Less common were cleavers (*Galium aparine* L.), knotweed (*Persicaria*), nipplewort (*Lapsana communis* L.), ribwort plantain (*Plantago lanceolata* L.), sheep's sorrel (*Rumex acetosella* L.), stinking chamomile (*Anthemis cotula* L.) and wild radish (*Raphanus raphanistrum* L.) – see Table 6b. Following the ecological indicator values of Ellenberg *et al.* (1992), corn marigold and sheep's sorrel suggest that the crops were grown in fields with acid and sandy soils.

The radiocarbon dates obtained from deposits associated with Roundhouse E showed two distinct phases of activity. Material from post-holes and other deposits directly related to the roundhouse itself returned Late Bronze Age/Iron Age dates in the range 780-220 BC. Dates obtained from two deposits with metalworking debris were much later and modelling of the results estimated the start of this activity at 480-650 AD (95% probability) and probably 570-640 AD (68% probability) and its end at 600-760 AD (95% probability) and probably 620-680 AD (68% probability). The duration of the dated metalworking activity was, therefore, estimated at 10-80 years (95% probability) and probably 10-40 years (68% probability); it should be noted that the small number of dates available may result in an overestimate of the duration, however.

All four of the larger grain assemblages from Roundhouse E consisted of reasonable quantities of remains (Table XIV.6h), but often these were so poorly preserved that they were could only be recorded as unidentified cereal grains (*Cerealia indet.*); as much as 61% of any one assemblage could not be identified more closely. Following Boardman and Jones (1990), the poor condition of the remains implied that the grains had become charred under similar conditions to those experienced by the Roundhouse A (including Corn Drier 3671) assemblages (i.e. high temperatures and well oxygenated). The composition of the identifiable fraction of all four cereal assemblages was quite similar (see Figure XIV.2) – containing barley, oat and naked wheat. This suggests that the undated assemblages (from hearth deposits Contexts 4307 and 4403) were contemporary with the dated metalworking hearths (Contexts 4179 and 4250) rather than the earlier use phase of the roundhouse itself.

Here a precise identification of the oat grains was not possible as the required diagnostic chaff was not present; though the presence of moderate assemblages suggests that they were more likely to be of the cultivated species. Similarly, it is not possible to differentiate between the hexaploid naked wheat, *Triticum aestivum* L., and the tetraploid forms, *T. durum* Desf. and *T. turgidum* L., on grains alone (Hillman *et al.* 1995, Jacomet 2006).

The assemblages are consistent with the Welsh 'early medieval' period. Barley (*Hordeum distichon* L./*H. vulgare* L.) was common and oat (*Avena sativa* L.) was becoming an important crop plant (Greig 1991). A similar grain assemblage, containing oat, rye and bread wheat, was recovered from another 'early medieval' site at Rhuddlan, North Wales (Williams 1985).

All of the remains of wild plant taxa recorded were from 'weeds' of cultivated ground, especially nitrophiles such as members of the goosefoot (fat-hen – *Chenopodium album* L.) and knotweed (black-bindweed – *Fallopia convolvulus* (L.) Á. Löve, knotgrass – *Polygonum aviculare* L., knotweed) families (see Table 6h). These few remains almost certainly represent weeds of the cereal crops harvested accidentally along with them. The dearth of remains, together with the scarcity of cereal chaff, could suggest that the assemblages derive from the later stages of crop-processing or carefully cleaned stores of cereals (Jones 1984, Van der Veen 1992).

Very little vertebrate material was recovered from these excavations despite the extensive and systematic sampling of the deposits from this site. The largest accumulations came from deposits (mainly pit fills) associated with the Early Neolithic building, and in particular from Context 1327, the fill of a pit. However, only six of the deposits (Contexts 1327, 1389, 3142, 4108, 4307 and 9447) produced more than ten fragments and only one fragment from the entire assemblage could be identified to species (a horse tooth from near Burnt Mound 2031). In general, the fragments were small (many less than 10 mm) and mostly of reasonable preservation, but many of the fragments had rounded edges and surface erosion was common. For most of the bones, it was not possible to determine from which skeletal element they had originated.

All of the fragments, bar the horse tooth, were white in colour and had been calcined. This could indicate that the bones had been burnt at high temperatures of 800°C or higher or that they had been subjected to prolonged exposure



to lower temperatures. However, other factors can also have an effect on bone colour, such as (amongst others) the position of the bones within the fire (Nicholson 1993), whether the bones have been stripped of soft tissue (McKinley and Bond 2001) or the availability of oxygen during burning. This last factor has recently been shown by Walker and Miller (2005) to be crucial to the chemical reactions that determine the colour of the bone.

As noted above, the only fragment identified to species was a single horse maxillary tooth, which, unfortunately, was recovered from an unstratified context near Burnt Mound 2031. Identification of other fragments was more problematic but, where some level of determination was possible, the remains represented animals of medium size, consistent with the bones of sheep/goat, pig or small cervid. The fragments (approximately 349) recovered from Context 1327 (a pit fill associated with the Early Neolithic building) were thought by the excavators to represent a human cremation. Although for the most part unidentifiable, this assemblage included fragments of possible horncore (although it could not be determined whether these represented large or medium-sized mammals) and none of the remaining fragments had the appearance of burnt human bone. Additionally, the rather rounded edges of the fragments and the high degree of fragmentation did not suggest that the bones had been immediately incorporated into the deposit from which they were recovered, something one would expect if the remains were those of a human cremation. Whyte (2001) suggested that burnt animal bone was more likely to be discarded in such a way that it was subjected to further disturbance, such as trampling, for example, and so further fragmentation would occur. None of the bones recovered from Context 1327, or from any of the other deposits, showed the characteristic cracks and splits normally associated with burnt human bones (Whyte *ibid.*). The presence of cremated human remains seems highly unlikely but, given the large proportion of unidentifiable fragments, it cannot be entirely ruled out.

It is likely that, regardless of date, most of the vertebrate remains represent animal bones discarded as food or butchery waste.

### Recommendations

The small quantities of biological remains recovered from the samples should be retained as part of the physical archive for the site.

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Table XIV.1. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from features associated with the early Neolithic building in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: Cont = context number; Sam = sample number; Subgroup = feature association within the structure; Bags = number of separate washover bags submitted; Wt = total weight of washover submitted (in grammes); Charcoal Ids = identified wood species present (if any); AMS = presence of remains considered good candidates for submission for radiocarbon dating via accelerator mass spectrometry (AMS), for example, charred grains or hazelnut shell fragments. In some instances no such material was identified within deposits for which it was nevertheless considered important that radiocarbon dating was attempted and, in these cases, charcoal from short-lived tree species (usually hazel) or unidentified wood of only a few years growth (twigs) was used.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1216	42	Fill of pit 1249	Fill of pit 1249, located near the SE corner of building	2	111	some modern rootlets, a few earthworm egg capsules, six uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, fragments of charcoal (to 25 mm), 31 charred fragments of hazelnut shell, five charred cereal grains (three charred grains of emmer wheat ( <i>Triticum dicoccum</i> Schübl.), one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.) and one charred unidentifiable cereal grain (poorly preserved)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1255	40	Side walls	Fill of 1254, a post-hole forming part of the S wall of the building	2	84	five earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and some charcoal 'slivers' (to 20 mm)	probably oak (cf. <i>Quercus</i> )	No
1276	43	Side walls	Fill of 1277, a post-hole on the S wall of the building	1	556	mostly charcoal 'slivers' (to 20 mm)	probably oak (cf. <i>Quercus</i> )	No
1290	45	Others	Fill of 1291, a small post-hole, part of a partition across the E end of the building	2	39	undisaggregated sediment lumps (to 1 mm), modern rootlets, three earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ), mostly charcoal (to 10 mm), 24 charred fragments of hazelnut shell and one charred unidentifiable cereal grain (poorly preserved)	-	Yes
1293	51	Side walls	Primary fill of 1294, a post-hole on S wall of the building	1	438	mostly charcoal 'slivers' (to 45 mm)	probably oak (cf. <i>Quercus</i> )	No
1314	50	Burnt patch	Fill of burnt patch 1315, just inside possible doorway in SW corner of the Early Neolithic building	1	8	undisaggregated sediment lumps (to 1 mm), modern rootlets, two earthworm egg capsules, mostly charcoal (to 10 mm) and one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	-	Yes
1327	59	Others	Fill of pit 1328, located just outside the line of the E gable end of the building	1	10	undisaggregated sediment lumps (to 1 mm), modern rootlets and a few charcoal fragments (to 12 mm)	-	No
1327	60	Others	as above	1	3	undisaggregated sediment lumps (to 1 mm), modern rootlets and a few charcoal fragments (to 12 mm)	-	No
1336	58	Others	Fill of 1335, a small pit or post-hole inside E end of the Early Neolithic building	1	18	modern rootlets, two earthworm egg capsules, mostly charcoal (to 10 mm), two charred fragments of hazelnut shell and one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	-	Yes
1338	57	Others	Fill of 1337, on the line of the N aisle posts of the Early Neolithic building	2	28	a few earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and 14 fragments of hazelnut shell	-	Yes
1340	61	Others	Fill of 1339, a small pit or post-hole inside the E end of the Early Neolithic building	2	98	a few modern rootlets, one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) and four seeds of goosefoot ( <i>Chenopodium</i> ) - both uncharred and probably modern, mostly charcoal (to 20 mm) and 11 charred fragments of hazelnut shell	-	Yes
1369	62	Others	Upper fill of post-hole 1370, part of a partition across the E end of the Early Neolithic building	1	28	a few modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly silty charcoal (to 15 mm), 17 charred fragments of hazelnut shell and one unidentifiable charred cereal grain (distorted and eroded)	-	Yes
1371	63	Others	Post-pipe within post-hole 1370, part of a	1	14	mostly charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			partition across the E end of the Early Neolithic building					
1378	67	Post-hole fill	Fill of 1377, a possible post-hole just E of the Early Neolithic building	1	4	mostly undisaggregated sediment lumps (to 1 mm), modern rootlets, one earthworm egg capsule, some charcoal (to 5 mm) and two charred fragments of hazelnut shell	-	Yes
1380	68	Pit fill	Fill of 1379, a possible post-hole, just E of the Early Neolithic building	1	7	mostly undisaggregated sediment lumps (to 1mm), one earthworm egg capsule and a few charcoal fragments (to 5 mm)	-	No
1382	65	Post-hole fill	Fill of 1381, a post-hole to the E of the Early Neolithic building	1	8	mostly undisaggregated sediment lumps (to 1mm), modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, a few charcoal fragments (to 5 mm) and two charred fragments of hazelnut shell	-	Yes
1384	66	Tree hollow	Fill of 1383	1	8	mostly undisaggregated sediment lumps, modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ), probably modern, and a few charcoal fragments (to 5 mm)	-	No
1389	69	Post-hole fill	Upper part of the fill of post-hole 1406	1	2	three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern and a few charcoal fragments (to 5 mm)	-	No
1389	72	Post-hole fill	Upper part of the fill of post-hole 1406	1	23	small stones (to 5 mm), one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and 55 charred fragments of hazelnut shell	-	Yes
1389	73	Post-hole fill	Lower part of the fill of post-hole 1406	1	12	small stones (to 5 mm), mostly charcoal (to 13 mm) and eight charred fragments of hazelnut shell	-	Yes
1389	76	Post-hole fill	Upper part of the fill of post-hole 1406	1	43	one earthworm egg capsule, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, one uncharred insect fragment (an elytron - also modern), mostly charcoal (to 13 mm), 42 charred fragments of hazelnut shell and one charred nutlet of cleavers ( <i>Galium aparine</i> L.)	-	Yes
1389	77	Post-hole fill	Lower part of the fill of post-hole 1406	1	11	modern rootlets, three earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes
1389	81	Post-hole fill	Upper part of the fill of post-hole 1406	1	81	modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and 10 charred fragments of hazelnut shell	-	Yes
1389	91	Post-hole fill	Lower part of the fill of post-hole 1406	2	30	few modern rootlets, earthworm egg capsules, mostly charcoal (to 10 mm) and five charred fragments of hazelnut shell	-	Yes
1392	78	Others	Fill of pit 1393, on the line of the gable end of the Early Neolithic building	1	13	undisaggregated sediment lumps (to 1 mm), modern rootlets, one earthworm egg capsule, mostly charcoal (to 14 mm) and two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern	-	No
1395	71	Post-hole fill	Fill of scoop/post-hole 1394. Probably part of a partition across W end of the Early Neolithic building	1	6	undisaggregated sediment lumps (to 1 mm), modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 10 mm) and three charred fragments of hazelnut shell	-	Yes
1399	74	Post-hole fill	Fill of post-hole 1398, forms part of the N wall of the Early Neolithic building	1	10	undisaggregated sediment lumps (to 1 mm), a few modern rootlets and some charcoal fragments (to 10 mm)	-	No
1401	75	Post-hole fill	Fill of post-hole 1400, forms part of the N wall of the Early Neolithic building	1	4	very sandy, mostly modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern, and a few charcoal fragments (to 10 mm)	-	No
1405	79	Post-hole 1406	Post-pipe within post-hole 1406, one of the main aisle posts	2	109	modern rootlets, two earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 18 mm), 81 charred fragments of hazelnut shell and one unidentifiable charred cereal grain (poorly preserved)	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1442	82	Post trench 1404	Lower fill of post trench 1404, inside E gable end of the Early Neolithic building	3	103	undisaggregated sediment lumps (to 1 mm), a few small stones (to 10 mm), a few modern rootlets, two uncharred insect remains (elytra - also modern), six earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and one charred fragment of hazelnut shell	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1443	83	Post trench 1404	Upper fill of post trench 1404, inside E gable end of the Early Neolithic building	1	247	modern rootlets, two earthworm egg capsules, five uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal 'slivers' (to 30 mm), nine charred fragments of hazelnut shell, one charred fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) and two charred grains of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1444	84	Post trench 1404	Lower fill of post trench 1404, inside E gable end of the Early Neolithic building	2	144	a few modern rootlets, several earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and seven charred fragments of hazelnut shell	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1445	85	Post trench 1404	Possible post-pipe within post trench 1404, inside E gable end of the Early Neolithic building	1	168	mostly charcoal 'slivers' (to 25 mm) and one charred fragment of hazelnut shell	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1445	86	Post trench 1404	as above	1	70	two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal 'slivers' (to 15 mm), two charred fragments of hazelnut shell, one charred glume base of emmer wheat ( <i>Triticum dicoccum</i> Schübl.) and two charred grains of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1486	88	Gable ends - E end	Possible post-pipe within post-hole 1483, one of the E gable posts of the Early Neolithic building	1	14	a few modern rootlets, one earthworm egg capsule, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, three charred fragments of hazelnut shell and one charred nutlet of cleavers ( <i>Galium aparine</i> L.)	-	Yes
1496	89	Gable ends - E end	Primary fill of post-hole 1495, one of the E gable posts in the Early Neolithic building	2	113	undisaggregated sediment lumps (to 4 mm), a little coal, a few modern rootlets, four uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal 'slivers' (to 15 mm), 11 charred fragments of hazelnut shell and four charred unidentifiable cereal grains (eroded and distorted)	-	Yes
1513	95	Post-hole 1532	Packing around post-pipes 1533 and 1570, within post-hole 1532, one of the main aisle posts	1	20	modern rootlets, two earthworm egg capsules, mostly charcoal (to 10 mm), 26 charred fragments of hazelnut shell and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.)	-	Yes
1516	92	Gable ends - E end	Fill of 1515, a post-hole within post trench 1505, with evidence of burning, though not <i>in situ</i> .	1	37	modern rootlets, a few earthworm eggs, two uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, one uncharred arthropod remain (modern), mostly charcoal (to 15 mm) and three charred fragments of hazelnut shell	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
1522	96	Post-hole 1532	Fill of post-pipe 1533, within post-hole 1532, one of the main aisle posts	2	53	a few modern rootlets, mostly charcoal (to 10 mm), 10 fragments of charred hazelnut shell and eight charred cereal grains (poorly preserved)	-	Yes
1526	94	Post-hole 1519	Fill of post-pipe 1525, within 1519, one of the main aisle posts of the Early Neolithic building	1	54	a few modern rootlets, few earthworm egg capsules, mostly charcoal (to 15 mm) and 11 charred fragments of hazelnut shell	-	Yes
1549	97	Gable ends - W end	Primary fill of possible post trench 1548, just inside the W gable end of the Early Neolithic building	1	15	undisaggregated sediment lumps (to 1 mm), modern rootlets, four earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 13 mm)	-	No
1552	98	Post-hole 1539	Fill of post-pipe 1551, within post-hole 1539, one of the main aisle posts in the Early Neolithic building	1	14	modern rootlets, a few earthworm egg capsules, mostly charcoal (to 15 mm) and one charred fragment of hazelnut shell	-	Yes
1555	101	Others	Fill of 1556, the partition slot in the middle	1	5	undisaggregated sediment lumps (to 1 mm), modern rootlets, mostly charcoal (to 5	-	Yes



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			of the Early Neolithic building			mm) and two charred fragments of hazelnut shell		
1569	107	Early Neolithic building	Fill of the second post-pipe within post-hole 1532, one of the main aisle posts	1	60	a few modern rootlets, mostly charcoal 'slivers' (to 15 mm), nine charred fragments of hazelnut shell and one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.)	oak ( <i>Quercus</i> )	Yes
1571	108	Post-hole 1572	Secondary fill of post-hole 1572, forming part of the S wall of the Early Neolithic building	1	6	modern rootlets, four earthworm egg capsules, mostly charcoal (to 10 mm) and three charred fragments of hazelnut shell	-	Yes
1571	110	Post-hole 1572	as above	1	22	modern rootlets, mostly charcoal (to 20 mm) and one charred fragment of hazelnut shell	-	Yes
1574	119	Post-hole 1572	Fill of post-hole 1573, with a post-pad at the base	1	2	mostly charcoal (to 5mm)	-	No
1587	111	Post-hole 1572	Fill of post-hole 1572, forming part of the S wall of the Early Neolithic building	1	44	modern rootlets, a few earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal fragments (to 20 mm)	-	No
1608	121	Others	Fill of post-hole 1609, related to the partition slot across the middle of the Early Neolithic building	1	26	undisaggregated sediment lumps (to 1 mm), modern rootlets, two earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and 17 charred fragments of hazelnut shell	-	Yes
1610	122	Others	Fill of slot 1611, part of the partition slot across middle of the Early Neolithic building	2	13	a few modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 12 mm) and three charred fragments of hazelnut shell	-	Yes
1612	123	Post-hole 1613	Upper fill of post-hole 1613, on the S wall of the Early Neolithic building	1	68	modern rootlets, one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) and one seed of goosefoot ( <i>Chenopodium</i> ) - both uncharred, probably modern, mostly charcoal (to 15 mm) and one charred fragment of hazelnut shell	-	Yes
1614	124	Post-hole 1613	Fill of post-pipe 1615, within post-hole 1613, on the S wall of the Early Neolithic building	1	59	few modern rootlets, mostly charcoal (to 20 mm)	-	No
1622	199	Fill of Pit 1619	Primary fill of large pit 1619, to the W of the Early Neolithic building	1	3	mostly modern rootlets, a few charcoal fragments (to 10 mm) and one charred unidentifiable cereal grain (poorly preserved)	-	Yes
1623	200	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	11	a few modern rootlets and earthworm egg capsules, mostly charcoal (to 13 mm)	-	No
1624	197	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	28	mostly rounded concreted ash and clay lumps (to 10 mm), a few modern rootlets and a few fragments of charcoal (to 5 mm)	-	No
1625	203	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	13	mostly undisaggregated sediment lumps (to 20 mm), a few modern rootlets and a little charcoal (to 10 mm)	-	No
1626	195	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	7	undisaggregated sediment lumps (to 1 mm), modern rootlets and a few charcoal fragments (to 5 mm)	-	No
1627	196	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	4	mostly undisaggregated sediment lumps (to 2 mm), a few modern rootlets and a little charcoal (to 10 mm)	-	No
1628	194	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early	1	10	a few rounded concreted ash and clay lumps (to 5 mm), modern rootlets and charcoal	-	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			Neolithic building. Deliberate dump of clay			(to 10 mm)		
1630	198	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	5	undisaggregated sediment lumps (to 1mm), modern rootlets, mostly charcoal (to 10 mm) and one charred fragment of hazelnut shell	-	Yes
1631	126	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	2	154	undisaggregated sediment lumps (to 40 mm), a few modern rootlets, three earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and one charred fragment of hazelnut shell	-	Yes
1631	204	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	2	175	a few modern rootlets and earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 30 mm) and one charred fragment of hazelnut shell	-	Yes
1632	202	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	1	23	few undisaggregated sediment lumps (to 2 mm), modern rootlets, one earthworm egg capsule and mostly charcoal (to 10 mm)	-	No
1633	201	Fill of Pit 1619	Fill of 1619, large pit to the W of the Early Neolithic building. Deliberate dump of clay	2	36	mostly undisaggregated sediment lumps (to 25 mm), a few modern rootlets and a little charcoal (to 10 mm)	-	No
1635	131	Post-hole 1613	Fill of 1636, a short slot on the S wall of the Early Neolithic building	1	8	mostly undisaggregated sediment lumps (to 1mm), a few modern rootlets, two earthworm egg capsules, mostly charcoal (to 10mm) and one charred fragment of hazelnut shell	-	Yes
1648	129	Pit fill	Primary fill of possible pit 1647, located to the NW of the Early Neolithic building.	1	40	a few modern rootlets, mostly charcoal (to 15 mm) and 75 charred fragments of hazelnut shell	-	Yes
1649	130	Slot fill	Fill of post-hole/slot 1636, on the S wall of the Early Neolithic building	1	17	small stones (to 10 mm), three earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and one charred fragment of hazelnut shell	-	Yes
1654	136	Slot fill	Fill of post-hole/slot 1636, on the S wall of the Early Neolithic building	1	5	undisaggregated sediment lumps (to 1 mm), modern rootlets and a few charcoal fragments (to 5 mm)	-	No
1655	184	Post-hole 1657	Secondary fill of post-hole 1656, SE corner post of the Early Neolithic building	1	76	mostly charcoal 'slivers' (to 30 mm)	-	No
1661	137	Pit fill	Fill of pit 1662, immediately to the W of the Early Neolithic building.	1	6	modern rootlets and mostly charcoal (to 5 mm)	-	No
1663	138	Pit fill	Fill of pit 1664, lies immediately to the W of the Early Neolithic building and cut by 1662.	2	23	modern rootlets, six earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ), mostly charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes
1665	133	Line of posts	Fill of post-hole 1666, one of a line of three to the W of the Early Neolithic building	1	20	a few modern rootlets, five uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm), one charred seeds of sun spurge ( <i>Euphorbia helioscopia</i> L.), one charred achene of knotweed ( <i>Persicaria</i> ), one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.), two charred grains of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.), two charred grains of emmer wheat ( <i>Triticum dicoccum</i> Schübl.) and four charred unidentifiable cereal grains (distorted and eroded)	-	Yes
1670	147	Old ground surface/occupa	A deposit within natural hollow 1669. This is probably a Neolithic occupation layer or	5	160	undisaggregated sediment lumps (to 3 mm), modern rootlets, 22 earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ) and one fruit stone of raspberry ( <i>Rubus idaeus</i> L.) - all uncharred and modern, mostly charcoal (to 15 mm), nine	oak ( <i>Quercus</i> ) – dominant, hazel	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
		tion layer	old ground surface			charred fragments of hazelnut shell and two charred unidentifiable cereal grains (poorly preserved)	( <i>Corylus</i> )	
1673	142	Post-hole fill	Upper fill of post-hole 1676, on the N wall of the Early Neolithic building	2	24	a few modern rootlets and mostly charcoal (to 15 mm)	pine ( <i>Pinus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
1674	143	Post-hole fill	Fill of post-hole 1676, on the N wall of the Early Neolithic building. Evidence of <i>in situ</i> burning	2	11	a few modern rootlets, mostly charcoal (to 10 mm) and three charred fragments of hazelnut shell	-	Yes
1680	141	Pit/posthole fill	Fill of pit/post-hole 1681, part of a line of slight features to the W of the Early Neolithic building	1	3	mostly undisaggregated sediment lumps (to 2 mm), a few modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and some tiny charcoal fragments (to 5 mm)	-	No
1683	146	Post-hole 1682/1684	Fill of post-hole 1682, NW corner post of the Early Neolithic building	2	10	a few modern rootlets and earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) – modern and mostly charcoal (to 15 mm)	-	No
1685	148	Post-hole 1682/1684	Fill of post-hole 1684, NW corner post of the Early Neolithic building	1	8	undisaggregated sediment lumps (to 1mm), modern rootlets, one earthworm egg capsule and mostly charcoal (to 10 mm)	-	No
1692	150	Cut/fill	Small curvilinear feature, possibly resulting from animal or root disturbance. Located just W of the Early Neolithic building	1	17	a few undisaggregated sediment lumps (to 1 mm), modern rootlets, mostly charcoal (to 15 mm), seven charred fragments of hazelnut shell and one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
1696	152	Stake-hole fill	Fill of stake-hole 1697, part of a group near the NE corner of the Early Neolithic building.	1	7	a few modern rootlets and mostly charcoal (to 13 mm)	pine ( <i>Pinus</i> )	No
1700	155	Old ground surface/occupation layer	Part of Neolithic occupation layer or old ground surface preserved in a natural hollow	1	28	modern rootlets, seven earthworm egg capsules, mostly charcoal (to 8 mm) and one charred fragment of hazelnut shell	-	Yes
1703	153	Old ground surface/occupation layer	Secondary fill of post-hole 1704, one of a line of three to the W of the Early Neolithic building	1	10	mostly charcoal (to 10 mm), six charred fragments of hazelnut shell and three charred unidentifiable cereal grains (poorly preserved)	-	Yes
1708	156	Line of posts	Primary fill of post-hole 1704, one of a line of three to the W of the Early Neolithic Building	1	38	a few modern rootlets, mostly charcoal (to 10 mm), 24 charred fragments of hazelnut shell and two charred grains of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	-	Yes
1709	176	Post-hole 1691	Fill of robbed out post-pipe 1707, within post-hole 1691, one of the main W gable end posts in the Early Neolithic building	1	21	modern rootlets and mostly charcoal (to 20 mm)	-	No
1713	159	Old ground surface/occupation layer	Part of Neolithic occupation layer or old ground surface preserved in a natural hollow	3	197	undisaggregated sediment lumps (to 5 mm), a few modern rootlets, 36 earthworm egg capsules, 13 uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and five charred fragments of hazelnut shell	-	Yes
1717	161	Post-hole 1656	Small patch of burnt clay in the top of possible post-pipe 1652 within post-hole 1656, SE corner post-hole in the Early Neolithic building	1	8	undisaggregated sediment lumps (to 1 mm), a few modern rootlets and charcoal (to 10 mm)	-	No
1718	163	Hollow fill	Fill of 1719, a small shallow feature to the W of the Early Neolithic building	1	1	mostly undisaggregated sediment lumps (to 1 mm), modern rootlets and a few charcoal fragments (to 5 mm)	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1722	180	Post-hole 1691	Fill of post-hole 1691, one of the main W gable end posts in the Early Neolithic building	1	12	modern rootlets, two earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ), one seed of chickweed ( <i>Stellaria media</i> (L.) Vill.) - all uncharred and modern, and mostly charcoal (to 15 mm)	-	No
1723	179	Post-hole 1691	Fill of post-hole 1691, one of the main W gable end posts in the Early Neolithic building	1	27	undisaggregated sediment lumps (to 1 mm), modern rootlets, seven earthworm egg capsules, one uncharred insect remain (elytra - probably modern), one modern uncharred leaf fragment (10 mm x 10 mm), four uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, some charcoal (to 10 mm), one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.) and one charred unidentifiable cereal grain (distorted and eroded)	-	Yes
1728	211	Occupation to the W of the Early Neolithic building	Fill of possible beam slot 1727	1	5	mostly undisaggregated sediment lumps (to 1 mm), some modern rootlets, two earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern and a few charcoal fragments (to 5 mm)	-	No
1730	171	Pit fill	Fill of pit 1729, to the W of the Early Neolithic building	1	62	a few modern rootlets, two earthworm egg capsules, mostly charcoal (to 20 mm), six charred fragments of hazelnut shell, one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.), one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and two charred unidentifiable cereal grains (distorted and eroded)	oak ( <i>Quercus</i> ) - dominant, hazel ( <i>Corylus</i> )	Yes
1731	177	Post-hole 1691	Fill of robbed out post-pipe 1707, within post-hole 1691, one of the main W gable end posts in the Early Neolithic building	1	60	a few modern rootlets and earthworm egg capsules and mostly charcoal (to 20 mm)	oak ( <i>Quercus</i> )	No
1739	210	Pit with large Early Neolithic rim sherd	Fill of ditch/hollow 1738, which lies nearly 9 m SW of the Early Neolithic building	2	55	modern rootlets, 21 earthworm egg capsules and mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> ) - dominant, oak ( <i>Quercus</i> )	No
1740	181	Post-hole 1691	Probably represents one stage in backfilling of post-hole 1691, one of the main W gable end posts	1	16	slightly sandy, modern rootlets, two earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 20 mm)	-	No
1741	178	Post-hole 1691	Construction fill around packing and post in post-hole 1691	1	33	modern rootlets, one modern uncharred budscale, one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) and three seeds of goosefoot ( <i>Chenopodium</i> ) - both uncharred and probably modern, mostly charcoal (to 25 mm), one charred fragment of hazelnut shell and one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	oak ( <i>Quercus</i> )	Yes
1758	187	Old ground surface/occupation layer	May be a preserved ground surface	1	9	modern rootlets, two earthworm egg capsules, four uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
1762	209	Slot 1690	Fill of slot 1690, between the two W gable end posts in the Early Neolithic building	1	40	undisaggregated sediment lumps (to 1 mm), modern rootlets, four earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 14 mm) and three tiny charred fragments of hazelnut shell	-	Yes
1769	208	Post-hole 1689	Fill of post-pipe 1771, in post-hole 1689, one of the main W gable end posts in the Early Neolithic building	1	31	undisaggregated sediment lumps (to 1 mm), modern rootlets, five earthworm egg capsules, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 12 mm) and one charred fragment of hazelnut shell	-	Yes
1775	193	Post-hole?	Fill of possible post-hole 1774, just inside W gable end of the Early Neolithic building	1	2	mostly charcoal (to 10 mm)	-	No
1776	191	Line of posts	Fill of post-pipe 1777, within post-hole	1	2	a few undisaggregated sediment lumps (to 1mm), modern rootlets and charcoal (to 10	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			1779, one of three in a line W of the Early Neolithic building			mm)		
1778	192	Line of posts	Packing material within post-hole 1779, one of three in a line W of the Early Neolithic building	1	2	a few undisaggregated sediment lumps (to 1mm), modern rootlets, three earthworm egg capsules, charcoal (to 5 mm) and one charred fragment of hazelnut shell	-	Yes
1782	206	Post-hole 1689	Lower construction fill of post-hole 1689, one of the main W gable end posts in the Early Neolithic building	1	6	modern rootlets, one uncharred culm fragment (to 30 mm) – modern and mostly charcoal (to 8 mm)	-	No
1783	207	Post-hole 1689	Upper construction fill of post-hole 1689, one of the main W gable end posts in the Early Neolithic building	1	5	modern rootlets, four earthworm egg capsules, one uncharred of goosefoot ( <i>Chenopodium</i> ) – modern, and charcoal (to 9 mm)	-	No

Tables XIV.2a to 2h. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from features associated with the late Neolithic pit groups in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

#### XIV.2a) Pit Group I

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1010	52	Pit group I	Fill of 1010	1	15	modern rootlets, earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern and mostly charcoal (to 18 mm)	-	No
1026	2	Pit group I	Fill of small pit 1027	2	170	one earthworm egg capsule, one uncharred achene of dock ( <i>Rumex</i> ) - modern, mostly charcoal (to 22 mm) and more than 10 charred fragments of hazelnut shell	-	Yes
1031	3	Pit group I	Fill of small pit 1032	1	22	undisaggregated sediment lumps (to 15 mm), modern rootlets, a few earthworm egg capsules, mostly charcoal (to 19 mm) and more than 20 charred fragments of hazelnut shell	-	Yes
1035	4	Pit group I	Fill of small pit 1036	4	180	modern rootlets, few earthworm egg capsules, few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
1048	6	Pit group I	Fill of small pit 1049. Near to pits 1036 and 1052	4	166	modern rootlets, slightly sandy, few earthworm egg capsules, one seed of goosefoot ( <i>Chenopodium</i> ) and one achene of knotweed ( <i>Persicaria</i> ) - both uncharred and modern, charcoal (to 10 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
1051	8	Pit group I	Fill of small, shallow pit 1052	2	41	a few earthworm egg capsules, mostly charcoal (to 15 mm) and 13 charred fragments of hazelnut shell	-	Yes
1092	15	Pit group I	Upper fill of pit 1094	1	16	mostly charcoal (to 20 mm)	-	No
1092	24	Pit group I	as above	1	80	a few earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and four charred fragments of hazelnut shell	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1095	16	Pit group I	Fill of 1096	1	16	mostly fragments of charcoal (to 10 mm)	-	No
1095	30	Pit group I	as above	1	13	mostly fragments of charcoal (to 18 mm)	-	No
1257	41	Pit group I	Fill of truncated pit 1258	1	25	a few earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and 40 charred fragments of hazelnut shell	-	Yes
1303	46	Pit group I	Fill of pit 1321, cut by both pit 1258 and ditch 1034	1	18	one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and 13 charred fragments of hazelnut shell	-	Yes
1375	64	Pit group I	Fill of 1376, a rather irregular linear cut filled with burnt clay	1	20	two earthworm egg capsules, mostly charcoal (to 15 mm) and one charred fragment of hazelnut shell	-	Yes

#### XIV.2b) Pit Group II

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4013	304	Pit group II	Upper fill of pit 4012	3	59	one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly fragments of charcoal (to 10 mm), more than 100 charred fragments of hazelnut shell, one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and one charred cereal grain (poorly preserved, unidentifiable)	-	Yes
4014	305	Pit group II	Main fill of pit 4012, very similar to 4022 within 4021 nearby	3	73	mostly fragments of charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4014	711	Pit group II	as above	1	10	charcoal fragments (to 20 mm)	-	No
4015	302	Pit group II	Fill of pit 4016	1	50	undisaggregated sediment lumps, mostly charcoal (to 10 mm) and 12 charred fragments of hazelnut shell	-	Yes
4017	308	Pit group II	Fill of pit 4018	1	3	four earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes
4019	309	Pit group II	Fill of pit 4020	4	325	two seeds of goosefoot ( <i>Chenopodium</i> ) and two florescences of the grass family (Poaceae) - both uncharred and probably modern, mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4022	306	Pit group II	Fill of pit 4021}	4	94	a few earthworm egg capsules, one seed of goosefoot ( <i>Chenopodium</i> ), one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and probably modern, mostly charcoal (to 18 mm) and more than 50 charred fragments of hazelnut shell	-	Yes
4025	309	Pit group II	Fill of small pit 4024	1	7	undisaggregated sediment lumps, one florescence of the grass family (Poaceae) – uncharred and modern and a few small fragments of charcoal	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4048	310	Pit group II	Fill of pit 4049	2	57	undisaggregated sediment lumps, two earthworm egg capsules, a few small fragments of charcoal and more than 100 charred fragments of hazelnut shell	-	Yes

*XIV.2c) Pit Group III*

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4061	323	Pit group III	Main fill of pit 4062, stained grey at the edges by the burnt deposit 4067 below	2	77	six earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm) and more than 50 charred fragments of hazelnut shell	-	Yes
4067	324	Pit group III	Lower, charcoal-rich fill of pit 4062	1	34	mostly fragments of charcoal (to 14 mm) and 20 pieces of charred hazelnut shell	-	Yes
4068	311	Pit group III	Fill of 4069	5	130	one earthworm egg capsule, two seeds of goosefoot ( <i>Chenopodium</i> ), black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) and elder ( <i>Sambucus nigra</i> L.) - all uncharred and modern, mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4093	312	Pit group III	Fill of pit 4092, contained lots of Neolithic impressed/grooved ware	1	40	undisaggregated sediment lumps, mostly modern rootlets, six earthworm egg capsules, twelve seeds of goosefoot ( <i>Chenopodium</i> ) and two achenes of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, charcoal (to 10 mm) and nine charred fragments of hazelnut shell	-	Yes

*XIV.2d) Pit Group IV*

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4099	313	Pit group IV	Fill of pit 4100	4	86	mostly modern rootlets, two earthworm egg capsules, four modern seeds of goosefoot ( <i>Chenopodium</i> ), some fragments of charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
4101	314	Pit group IV	Lower fill of 4100	2	14	modern rootlets, four earthworm egg capsules, mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
4102	332	Pit group IV	Lower fill of pit 4103	5	147	mostly charcoal (to 20 mm), more than 50 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	Yes
4104	331	Pit group IV	Upper fill of 4103	2	96	some undisaggregated sediment lumps, mostly charcoal (15 mm) and more than 10 charred fragments of hazelnut shell	-	Yes



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4105	327	Pit group IV	May be two phases of slumping as in the section it lies over and under 4102	1	62	some undisaggregated sediment lumps, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and four charred fragments of hazelnut shell	-	Yes
4107	325	Pit group IV	Upper fill of pit 4109	7	186	undisaggregated sediment lumps, few modern rootlets, few earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and more than 100 fragments of charred hazelnut shell	hazel ( <i>Corylus</i> )	Yes
4108	326	Pit group IV	Lower fill of pit 4109	4	211	few modern rootlets, few earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ) and elder ( <i>Sambucus nigra</i> L.) - all uncharred and probably modern, and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes

XIV.2e) Pit Group V

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4126	328	Pit group V	Fill of 4127	1	32	mostly undisaggregated sediment lumps, modern rootlets, 17 earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ), two achenes of fumitory ( <i>Fumaria</i> ) and one seed of elder ( <i>Sambucus nigra</i> L.) - all uncharred and modern, and fragments of charcoal (to 8 mm)	-	No
4132	329	Pit group V	Upper fill of 4133	1	151	a few modern rootlets, four earthworm egg capsules, one fly puparia, mostly charcoal (to 10 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4147	330	Pit group V	Lowest fill of isolated pit 4133	4	547	a few modern rootlets, mostly charcoal fragments (to 18 mm) and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
4149	340	Pit group V	Fill of isolated pit 4133	2	187	mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4149	708	Pit group V	Fill of isolated pit 4133, charcoal from prehistoric pot (SF568)	1	12	few charcoal (to 10 mm) and 11 charred fragments of hazelnut shell	-	Yes
4149	712	Pit group V	Fill of isolated pit 4133	1	13	charcoal (to 10 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
4149	715	Pit group V	as above	2	4	21 charred fragments of hazelnut shell	-	Yes
4161	364	Pit group V	Deposit overlying large pot sherd (SF558) in pit 4133	1	6	mostly charcoal (to 10 mm) and more than 50 charred fragments of hazelnut shell	-	Yes

XIV.2f) Pit Group VI

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
6005	628	Pit group VI	Fill of pit 6041	1	9	mostly modern rootlets, one earthworm egg capsule, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few charcoal fragments (to 10 mm) and five charred fragments of hazelnut shell	-	Yes
6006	607	Pit group VI	Fill of pit 6041	1	30	mostly modern rootlets, two earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ), some fragments of charcoal (to 10 mm) and more than 10 charred fragments of hazelnut shell	-	Yes
6006	627	Pit group VI	as above	4	88	undisaggregated sediment lumps, mostly modern rootlets, five earthworm egg capsules, ten uncharred seeds of goosefoot ( <i>Chenopodium</i> ) and one fruit stone of raspberry ( <i>Rubus idaeus</i> L.) - all uncharred and modern, mostly charcoal (to 20 mm) and more than 20 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> ) - dominant, oak ( <i>Quercus</i> )	Yes
6042	626	Pit group VI	Fill of pit 6043	3	133	mostly modern rootlets, four earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ) and one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - all uncharred and modern, mostly charcoal (to 20 mm) and more than 20 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
6048	640	Pit group VI	Fill of pit 6047	2	25	undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule and charcoal (to 10 mm)	-	No
6054	641	Pit group VI	Fill of pit 6055	1	20	mostly modern rootlets, three earthworm egg capsules, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern and charcoal (to 10 mm)	-	No
6060	642	Pit group VI	Fill of pit 6061	1	12	undisaggregated sediment lumps, mostly modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes
6063	645	Pit group VI	Upper fill of pit 6044	2	10	mostly modern rootlets, five earthworm egg capsules, three seeds of goosefoot ( <i>Chenopodium</i> ) and seed of cabbage/mustard ( <i>Brassica/Sinapis</i> ) - all uncharred and modern, and a little charcoal (to 5 mm)	-	No
6064	646	Pit group VI	Lower fill of 6044	2	2	modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a little charcoal (to 5 mm)	-	No
6065	644	Pit group VI	Deposit overlying pit 6044	3	355	undisaggregated sediment lumps, slightly sandy, mostly modern rootlets, four uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> ) - dominant and pine ( <i>Pinus</i> )	No
6066	651	Pit group VI	Upper fill of pit 6072	4	76	undisaggregated sediment lumps, mostly modern rootlets, six seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, charcoal (to 15 mm) and more than 50 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
6066	653	Pit group VI	as above	3	146	mostly modern rootlets, nine earthworm egg capsules, fifteen seeds of goosefoot ( <i>Chenopodium</i> ), two nuts of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.), two achenes of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one seed of the pea family (Fabaceae) - all uncharred and modern, charcoal (to 10 mm), more than 100 charred fragments of hazelnut shell	-	Yes
6073	656	Pit group VI	Fill of pit or possible post-hole 6072	5	92	mostly modern rootlets, eleven earthworm egg capsules, nineteen seeds of goosefoot ( <i>Chenopodium</i> ), one seed of pea family (Fabaceae) and one leaf fragment - all uncharred, modern, mostly charcoal (to 15 mm) and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
6077	658	Pit group VI	Upper fill of 6076	2	40	undisaggregated sediment lumps, mostly modern rootlets, three seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, some small fragments of charcoal (to 5 mm) and one charred fragment of hazelnut shell	-	Yes
6078	652	Pit group VI	Lower fill of 6076	1	1	one charred fragment of hazelnut shell	-	Yes
6078	659	Pit group VI	as above	1	12	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), some modern rootlets, one earthworm egg capsule, some small fragments of charcoal (to 10 mm) and five fragments of charred hazelnut shell	-	Yes
6080	654	Pit group VI	Fill of 6079	1	14	undisaggregated sediment lumps, mostly modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few tiny charcoal fragments (to 5 mm) and one charred fragment of hazelnut shell	-	Yes
6081	655	Pit group VI	Upper fill of 6075	1	5	mostly modern rootlets, one earthworm egg capsule, five uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a little charcoal (to 10 mm) and three charred fragments of hazelnut shell	-	Yes
6086	657	Pit group VI	Fill of pit 6087	2	397	a few modern rootlets, four earthworm egg capsules, seven seeds of goosefoot ( <i>Chenopodium</i> ) - modern, one seed of the pea family (Fabaceae), one florescence of the grass family (Poaceae) - all uncharred and modern, mostly charcoal (to 30 mm) and more than 100 charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes

XIV.2g) Pit Group VII

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3112	239	Pit group VII	Upper fill of pit 3111	1	9	undisaggregated sediment lumps, mostly modern rootlets, two earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) – modern and some small fragments of charcoal (to 10 mm)	-	No
3124	243	Pit group VII	Possible hearth, originally recorded as a natural hollow	1	5	mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	Yes
3137	248	Pit group VII	Upper fill of pit 3139	1	23	a few modern rootlets, two earthworm egg capsules, charcoal (to 15 mm), eight fragments of charred hazelnut shell and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.)	hazel ( <i>Corylus</i> )	Yes
3142	290	Pit group VII	Lower fill of pit 3143	2	71	mostly charcoal (to 15 mm), many charred fragments of hazelnut shell, one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and one charred grain of wheat ( <i>Triticum</i> )	hazel ( <i>Corylus</i> )	Yes
3144	291	Pit group VII	Upper fill of pit 3146	1	47	one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly fragments of charcoal (to 15 mm)	-	No
3145	292	Pit group VII	Lower fill of pit 3146	1	13	undisaggregated sediment lumps, mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
3154	294	Pit group VII	Fill of pit 3155	1	48	one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and more than 50 charred fragments of hazelnut shell	-	Yes
3189	298	Pit group VII	Fill of pit 3190	1	25	some modern rootlets, one earthworm egg capsule, mostly charcoal (to 15 mm) and four charred fragments of hazelnut shell	-	Yes

XIV.2h) Pit Group VIII

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1304	48	Pit group VIII	Fill of pit 1305, part of the group of pits to the S of the building including 1553	1	29	modern rootlets, eight earthworm egg capsules, mostly charcoal (to 20 mm) and more than 80 charred fragments of hazelnut shell	-	Yes
1308	49	Pit group VIII	Primary fill of pit 1309, part of the group of pits to the S of the building including 1553	1	91	a few modern rootlets, seven earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 18 mm) and more than 100 charred fragments of hazelnut shell	-	Yes
1554	241	Pit group VIII	Primary fill of pit 1553, one of a group near the SW corner of the building	1	1	13 silted charred fragments of hazelnut shell	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1554	242	Pit group VIII	as above	1	1	mostly charcoal (to 10 mm) and two charred fragments of hazelnut shell	-	Yes
1583	112	Pit group VIII	Fill of pit 1584, part of the group of pits near the SW corner of the Early Neolithic building	2	18	modern rootlets, few earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and more than 40 charred fragments of hazelnut shell	-	Yes
1592	117	Pit group VIII	Fill of pit 1579, part of the group of pits to the SW of the Early Neolithic building	1	22	a few modern rootlets, four earthworm egg capsules, mostly charcoal (to 10 mm) and 23 charred fragments of hazelnut shell	-	Yes
1594	109	Pit group VIII	Fill of pit 1579, part of the group of pits to the SW of the Early Neolithic building	1	21	a few modern rootlets, four earthworm egg capsules, mostly charcoal (to 15 mm) and more than 50 charred fragments of hazelnut shell	-	Yes
1597	118	Pit group VIII	Fill of 1596, part of the group of pits to the SW of the Early Neolithic building	1	9	undisaggregated sediment lumps (to 1 mm), many modern rootlets, four earthworm egg capsules, mostly charcoal (to 10 mm) and nine fragments of charred hazelnut shell	-	Yes

Table XIV.3. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from burnt mound features in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.  
Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1097	17	T1 Burnt mound	Spread of burnt material forming a burnt mound	4	187	undisaggregated sediment lumps, modern rootlets, nine earthworm egg capsules, 17 uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm), five charred fragments of hazelnut shell, one charred cereal grain (poorly preserved, unidentifiable), four charred grains of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	hazel ( <i>Corylus</i> )	Yes
1097	38	T1 Burnt mound	as above	3	254	undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ), one budscale and one achene of thistle ( <i>Cirsium</i> ) - all uncharred and modern, mostly charcoal (to 20 mm) and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L., probably naked variety)	hazel ( <i>Corylus</i> )	Yes
1158	29	T1 Burnt mound	Primary fill of burnt mound trough 1154	4	233	a few modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 25 mm) and one charred fragment of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
1160	28	T1 Burnt mound	Fill of burnt mound trough 1154. 1160 was probably formed by hillwash	2	87	few undisaggregated sediment lumps, few modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 10 mm)	-	No
1720	165	T1 Burnt mound	?Buried surface, or interface between 1097 and 1184.	4	380	undisaggregated sediment lumps, one seed of goosefoot ( <i>Chenopodium</i> ), one unidentifiable budscale and one nutlet of cleavers ( <i>Galium aparine</i> L.) - all uncharred and modern, mostly charcoal (to 20 mm), one charred fragment of hazelnut shell and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.)	hazel ( <i>Corylus</i> )	Yes
1759	188	T1 Burnt mound	Possible lens of mixed fills within 1097.	2	71	undisaggregated sediment lumps, five uncharred budscapes - modern, and mostly charcoal (to 40 mm)	hazel ( <i>Corylus</i> )	No
1760	189	T1 Burnt mound	?Pre-burnt mound ground surface	1	492	one modern, uncharred budscale and mostly fragments of charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
1765	190	T1 Burnt	Part of pre-burnt mound ground	1	3	undisaggregated sediment lumps, mostly modern rootlets, one twig fragment (to 20 mm) and many	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
		mound	surface modified by water action			budscales - all uncharred and modern, and a few charcoal fragments (to 10 mm)		
2143	498	T2 Burnt mound	Fill of 2149, ?support for a possible wooden lining 2144	1	11	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, one uncharred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - modern, and charcoal (to 15 mm)	oak ( <i>Quercus</i> )	No
2144	499	T2 Burnt mound	Fill of 2149, probably the remains of a wooden lining to the trough.	1	3	undisaggregated sediment lumps, mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
2145	497	T2 Burnt mound	Fill of 2149, trough under burnt mound. (2145) forms the main fill within the possible trough lining.	4	614	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), undisaggregated sediment lumps, mostly modern rootlets, ten earthworm egg capsules, eighteen seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), many budscales, a few culm and leaf fragments (to 15 mm) - all uncharred and modern, and mostly fragments of charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
2151	500	T2 Burnt mound	Remains of the burnt mound 2141, only surviving area due to the deep layer of silt 2150 overlying it	1	193	mostly charcoal (to 15 mm)	probably hazel (cf. <i>Corylus</i> )	No
2167	622	T2 Burnt mound	Remains of a burnt mound on a natural sandy mound	1	47	a few modern rootlets and mostly fragments of charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
2168	619	T2 Burnt mound	Brown deposit below 2167, possibly a buried soil horizon	1	38	mostly undisaggregated sediment lumps, a few modern rootlets, one earthworm egg capsule and some fine charcoal (to 5 mm)	-	No
2169	620	T2 Burnt mound	Buried soil?	1	11	a few undisaggregated sediment lumps, modern rootlets, mostly fine charcoal (to 5mm) and one charred fragment of hazelnut shell	-	Yes
2170	621	T2 Burnt mound	Yellow deposit above natural, ?glacial outwash deposit	1	10	mostly undisaggregated sediment lumps and modern rootlets, with a few fine charcoal fragments (to 5 mm)	-	No
2173	618	T2 Burnt mound	Fill of 2175, a shallow pit on edge of burnt mound (2167)	4	227	undisaggregated sediment lumps, a few modern rootlets, one earthworm egg capsule and mostly fragments of charcoal (to 10 mm)	hazel ( <i>Corylus</i> )	No
2176	617	T2 Burnt mound	Largest burnt mound on site covering roughly circular area c.13 m diameter	4	233	a few modern rootlets, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ) and a leaf fragment (to 20 mm) - all uncharred, and modern, and mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	No
2178	636	T2 Burnt mound	Fill of 2221	1	4	undisaggregated sediment lumps, mostly modern rootlets and fine charcoal (to 5 mm)	-	No
2181	623	T2 Burnt mound	Fill of 2180	2	147	undisaggregated sediment lumps, one earthworm egg capsule, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly fragments of charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
2185	624	T2 Burnt mound	Fill of 2186	3	283	mostly undisaggregated sediment lumps, a few modern rootlets, and charcoal (to 15 mm)	-	No
2191	631	T2 Burnt mound	Fill of 2186, slumping on the SE edge of the pit	1	31	a few modern rootlets and mostly fragments of charcoal (to 15 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
2193	625	T2 Burnt mound	Fill of 2186, trough associated with burnt mound (2176)	1	282	mostly charcoal (to 20 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
2196	632	T2 Burnt mound	Fill of 2186	1	95	mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> ) – dominant, oak	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
							( <i>Quercus</i> )	
2200	638	T2 Burnt mound	Fill of 2197, the trough related to burnt mound (2176)	2	71	mostly undisaggregated sediment lumps, few modern rootlets, some fragments of charcoal (to 10 mm) and one charred unidentifiable cereal grain	-	Yes
2203	661	T2 Burnt mound	Upper fill of 2202	1	87	a few modern rootlets, three uncharred leaf fragments - modern, and mostly charcoal (to 15 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes
2208	639	T2 Burnt mound	Fill of 2197, the trough related to burnt mound (2176)	1	66	mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	Yes
2209	633	T2 Burnt mound	Fill of 2212, hearth pit related to burnt mound (2197)	2	198	mostly charcoal (to 13 mm) and two charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
2210	634	T2 Burnt mound	Fill of 2197, variation of 2198	1	46	a few modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	Yes
2287	668	T2 Burnt mound	Smaller burnt mound approximately 5 m SW of the large burnt mound (2176).	1	274	lumps of fused ash (with a high mineral content, perhaps derived from plant silica) and mostly fragments of charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
2289	667	T2 Burnt mound	Fill of 2287	2	1022	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), one uncharred leaf fragment - modern, mostly charcoal (to 30 mm) and four charred fragments of hazelnut shell	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
2198	635	T2 Burnt mounds	Upper fill of 2197	1	35	a few modern rootlets and mostly fragments of charcoal (to 10 mm)	-	No
2201	664	T2 Burnt mounds	Fill of 2197, water borne fill	2	82	mostly charcoal (to 25 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
2206	662	T2 Burnt mounds	Fill of 2202	1	128	mostly charcoal (to 20 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
2207	663	T2 Burnt mounds	Fill of 2202, represents erosion or collapse of the sides forming a layer in the base of the pit	1	63	a few modern rootlets and mostly fragments of charcoal (to 15 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
4199	384	T4 Burnt mound	Main deposit of the remains of a small burnt mound, quite shallow surface deposit	1	61	mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	No
4210	391	T4 Burnt mound	Natural hollow on the top of root-hole 4260	1	10	undisaggregated sediment lumps, a few modern rootlets, mostly charcoal fragments (to 15 mm) and one charred fragment of hazelnut shell	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	Yes
4222	368	T4 Burnt mound	Fill of 4208, main phase of burning deposited in 4208	1	142	mostly charcoal 'slivers' (to 15 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
4233	372	T4 Burnt mound	Latest fill of 4208	1	51	a few undisaggregated sediment lumps, modern rootlets, mostly charcoal 'slivers' (to 13 mm) and one charred fragment of hazelnut shell	oak ( <i>Quercus</i> )	Yes
4234	371	T4 Burnt mound	Fill of 4208, thin lens of charcoal rich material, may have slumped	1	115	a few undisaggregated sediment lumps, modern rootlets and mostly charcoal 'slivers' (to 15 mm)	oak ( <i>Quercus</i> )	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			from the W edge of 4222					
4235	369	T4 Burnt mound	Fill of 4208, first fill following the main phase of burning	1	87	a few undisaggregated sediment lumps, modern rootlets and mostly charcoal 'slivers' (to 15 mm)	oak ( <i>Quercus</i> )	No
4238	370	T4 Burnt mound	Fill of 4208	1	53	a few undisaggregated sediment lumps, modern rootlets and mostly charcoal 'slivers' (to 20 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
5023	528	T5 burnt mounds	Small burnt mound truncated by a field drain and associated with a small circular trough, 5024	1	380	a few modern rootlets and charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
6014	605	T6 Burnt mound	Fill of 6015, pit associated with burnt mound (6056).	1	151	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly 'mineral replaced' charcoal (to 15 mm)	probably hazel (cf. <i>Corylus</i> )	No
6014	707	T6 Burnt mound	as above	1	54	lumps of fused ash (with a high mineral content, perhaps derived from plant silica) and mostly 'mineral replaced' charcoal (to 15 mm)	-	No
6016	615	T6 Burnt mound	Small burnt mound with a regular spread of fire cracked stones mixed with areas of charcoal	1	115	mostly modern rootlets, five earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ), one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and one charred fragment of hazelnut shell	-	Yes
6019	609	T6 Burnt mound	Remains of a burnt mound	1	413	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets and mostly fragments of charcoal (to 30 mm)	hazel ( <i>Corylus</i> )	No
6020	610	T6 Burnt mound	Fill of 6023, pit associated with burnt mound (6019).	1	72	a few modern rootlets, two earthworm egg capsules, four uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly fragments of charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
6026	612	T6 Burnt mound	Fill of 6025	2	267	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets, some earthworm egg capsules and mostly 'mineral replaced' charcoal (to 20 mm)	probably hazel (cf. <i>Corylus</i> )	No
6030	611	T6 Burnt mound	Fill of 6029	1	29	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets, one uncharred fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) - modern, and mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
6037	616	T6 Burnt mound	Fill of 6018	1	88	undisaggregated sediment lumps, a few modern rootlets, ten earthworm egg capsules, three seeds of goosefoot ( <i>Chenopodium</i> ), one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.), one uncharred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) and one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, and mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
6038	606	T6 Burnt mound	Fill of 6015	1	73	lumps of fused ash (with a high mineral content, perhaps derived from plant silica) and mostly 'mineral replaced' charcoal (to 12 mm)	probably hazel (cf. <i>Corylus</i> )	No
6057	643	T6 Burnt mound	Fill of 6058, pit related to burnt mound (6016)	2	61	a few undisaggregated sediment lumps, modern rootlets, seven earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ), mostly charcoal (to 15 mm) and two charred fragments of hazelnut shell	oak ( <i>Quercus</i> )	Yes
7037	548	T7 Burnt mound	Fill of 7042	1	12	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ) and one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - both uncharred and modern, and charcoal (to 15 mm)	oak ( <i>Quercus</i> )	No
7040	553	T7 Burnt mound	Fill of trough 7043	1	55	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets and 'mineral replaced' charcoal (to 15 mm)	probably hazel (cf. <i>Corylus</i> )	No
7044	554	T7 Burnt	Fill of 7043, thin deposit of charcoal	1	443	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern	hazel ( <i>Corylus</i> )	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
		mound	in the base			rootlets, four earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 30 mm)		
7047	575	T7 Burnt mound	Fill of 7045, dump of charcoal	1	217	a few modern rootlets and mostly 'mineral replaced' charcoal (to 15 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	No
7048	576	T7 Burnt mound	Fill of 7045, dump of fired stone	1	47	a few modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly 'mineral replaced' charcoal (to 15 mm)	-	No
7049	574	T7 Burnt mound	Fill of 7045	1	34	a few modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly 'mineral replaced' charcoal (to 15 mm)	-	No

Table XIV.4. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from earth oven features in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1087	13	Ovens, any trench	Burnt stone fill of oven 1072, possibly representing the last use of this feature	3	225	a few modern rootlets, nine earthworm egg capsules, one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.), five achenes of fumitory ( <i>Fumaria</i> ), one seed of chickweed ( <i>Stellaria media</i> (L.) Vill.), one seed of spurge ( <i>Euphorbia</i> ) - all uncharred and modern, mostly charcoal (to 14 mm), 11 charred fragments of hazelnut shell, one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and one charred grain of wheat ( <i>Triticum</i> )	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
1231	36	Ovens, any trench	Fill of 1230	1	8	small stones (to 3 mm), mostly modern rootlets and charcoal (to 10 mm)	probably hazel (cf. <i>Corylus</i> )	No
1232	35	Ovens, any trench	Lower fill of 1230	1	37	mostly charcoal (to 14 mm)	hazel ( <i>Corylus</i> )	No
1260	56	Ovens, any trench	Mixed fill below oven lining in 1259	1	7	mostly charcoal (to 12 mm) and one charred fragment of hazelnut shell	oak ( <i>Quercus</i> )	No
1261	44	Ovens, any trench	Fill of 1259	1	38	two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 21 mm) and three charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
1511	114	Ovens, any trench	Main fill of 1510	1	38	two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
1578	116	Ovens, any trench	Fill of 1510, possible burnt clay lining for use as an oven	1	5	mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 12 mm)	oak ( <i>Quercus</i> )	No
1589	115	Ovens, any trench	Fill of 1510, possibly a combination of degraded clay lining and scorched earth	1	23	mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and charcoal (to 13 mm)	hazel ( <i>Corylus</i> )	No
1590	113	Ovens, any trench	Fill of 1510	1	17	undisaggregated sediment lumps, mostly modern rootlets and charcoal (to 12 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	No
3122	244	Ovens, any trench	Layer of redeposited natural covering around 80% of oven 3133.	1	15	a few modern rootlets, one uncharred achene of fumitory ( <i>Fumaria</i> ) - modern, and mostly charcoal (to 10 mm)	-	No
3130	245	Ovens, any trench	Sandy layer directly over 3131 in oven 3133	2	77	undisaggregated sediment lumps, a few modern rootlets, mostly charcoal (to 10 mm) and one charred fragment of hazelnut shell	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3131	246	Ovens, any trench	Fill of 3133	2	262	mostly charcoal (to 25 mm), and one charred fragment of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
3132	247	Ovens, any trench	Layer of charred natural under 3131	1	17	undisaggregated sediment lumps, some modern rootlets and charcoal (to 13 mm)	hazel ( <i>Corylus</i> )	No
3315	348	Ovens, any trench	Fill of 3314	1	144	a few stones (to 25 mm), modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 25 mm)	hazel ( <i>Corylus</i> )	No
6051	647	Ovens, any trench	Fill of 6033	1	71	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	No
6052	648	Ovens, any trench	Fill of 6033, possible erosion deposit	1	19	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), few modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern, and mostly charcoal (to 15 mm)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	No
6059	650	Ovens, any trench	Lining of a possible oven	1	8	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, many earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) and one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, and mostly charcoal (to 10 mm)	hazel ( <i>Corylus</i> )	No
6062	649	Ovens, any trench	Fill of 6033, possibly to hold lining in place	1	2	mostly modern rootlets and charcoal (to 5 mm)	-	No

Table XIV.5. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from the fills of possibly prehistoric feature 7055 (Trench 7) in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
7050	601	T7 Feature 7055	Charcoal layer in base of 7055	1	557	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets, two seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, and mostly charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
7051	602	T7 Feature 7055	Main fill of 7055	1	19	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, one earthworm egg capsule, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, a few charcoal fragments (to 10 mm) and one charred unidentifiable cereal grain (eroded and distorted)	-	Yes
7059	603	T7 Feature 7055	Fill of stake-hole in base of 7055	1	5	mostly undisaggregated sediment lumps, a few modern rootlets and charcoal (10 mm)	probably hazel (cf. <i>Corylus</i> )	No

Tables XIV.6a to 6k. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from features associated with Roundhouses (including possible roundhouse Structures F and G) in context number order by group, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

XIV.6a) Roundhouse A

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3093	237	T3 Roundhouse A	Primary silting of 3047	1	10	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets and a few charcoal fragments (to 8 mm)	-	No
3096	238	T3 Roundhouse A	Primary silting of ditch 3048	1	27	mostly undisaggregated sediment lumps, modern rootlets, a few earthworm egg capsules, several seeds of goosefoot ( <i>Chenopodium</i> ), achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern and a few fragments of charcoal (to 5 mm)	-	No
3156	299	T3 Roundhouse A	Upper fill of 3157, part of enclosure/drainage ditch around Roundhouse A.	1	10	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), undisaggregated sediment lumps, mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
3158	300	T3 Roundhouse A	Upper fill of enclosure ditch 3159	1	26	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 20 mm)	oak ( <i>Quercus</i> )	No
3160	296	T3 Roundhouse A	Fill of small ditch 3161	1	12	mostly undisaggregated sediment lumps, modern rootlets and a few fragments of charcoal (to 5 mm)	-	No
3162	297	T3 Roundhouse A	Fill of enclosure ditch 3163	1	6	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few earthworm egg capsules, several uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern and a few fragments of charcoal (to 10 mm)	-	No
3176	295	Evaluation trench	Fill of 3177, possible ring ditch of a Roundhouse in the evaluation trench W of Roundhouse A	1	120	a few modern rootlets, two earthworm egg capsules, 21 seeds of goosefoot ( <i>Chenopodium</i> ), three achenes of fumitory ( <i>Fumaria</i> ) and two achenes of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, mostly charcoal (to 15 mm), one charred achene of knotweed ( <i>Persicaria</i> ), four charred glume bases of spelt ( <i>Triticum spelta</i> L.), one charred spikelet fork of emmer ( <i>Triticum dicoccum</i> Schübl.), two charred glume bases and one spikelet fork of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), one charred grain of spelt ( <i>Triticum spelta</i> L.), one charred grain of emmer ( <i>Triticum dicoccum</i> Schübl.), one charred grain of rye ( <i>Secale cereale</i> L.), one charred grain of wheat ( <i>Triticum</i> ) and two charred unidentifiable cereal grains (eroded and distorted)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> ) and ash ( <i>Fraxinus</i> )	Yes
3181	334	T3 Roundhouse A	Fill of 3058, earlier outer gully of Roundhouse A.	1	22	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) – modern and a little charcoal (to 10 mm)	-	No
3188	303	T3 Roundhouse A	Fill of storm gully 3059	1	17	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, two uncharred achenes of fumitory ( <i>Fumaria</i> ) - modern, and a few charcoal fragments (to 15 mm)	hazel ( <i>Corylus</i> )	No
3231	316	T3 Roundhouse A	Fill of 3230, inner gully of Roundhouse A	2	105	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, eight seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, charcoal (to 15 mm), two charred glume bases of spelt ( <i>Triticum spelta</i> L.) and four charred glume bases of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), two charred grains of spelt ( <i>Triticum spelta</i> L.), one	hazel ( <i>Corylus</i> )	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
						charred oat grain ( <i>Avena</i> ), one grain of wheat ( <i>Triticum</i> ) and six unidentifiable charred cereal grains (eroded and distorted)		
3231	399	T3 Roundhouse A	as above	1	13	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, several seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, mostly charcoal (to 10 mm), one charred glume base of spelt ( <i>Triticum spelta</i> L.) and one of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), one charred grain of oat ( <i>Avena</i> ), one charred grain of rye ( <i>Secale cereale</i> L.), two grains of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.) and four charred unidentifiable cereal grains (eroded and distorted)	-	Yes
3267	322	T3 Roundhouse A	Fill of 3266, the inner gully of Roundhouse A	1	32	undisaggregated sediment lumps, modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm), one charred nutlet of cleavers ( <i>Galium aparine</i> L.), one charred glume base of spelt ( <i>Triticum spelta</i> L.), one charred glume base of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), three charred grains of wheat ( <i>Triticum</i> ) and two unidentifiable charred cereal grains (eroded and distorted)	hazel ( <i>Corylus</i> )	Yes
3267	410	T3 Roundhouse A	as above	1	36	modern rootlets, a few earthworm egg capsules, four seeds of goosefoot ( <i>Chenopodium</i> ), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, mostly charcoal (to 15 mm), one charred glume base of spelt ( <i>Triticum spelta</i> L.) and one of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), one charred rachis segment of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.), one charred grain of oat ( <i>Avena</i> ), one charred grain of rye ( <i>Secale cereale</i> L.) and two unidentifiable charred cereal grains (eroded and distorted)	hazel ( <i>Corylus</i> )	Yes
3267	411	T3 Roundhouse A	as above	1	44	mostly charcoal (to 60 mm)	probably hazel (cf. <i>Corylus</i> )	No
3270	365	T3 Roundhouse A	Fill of middle ring ditch 3058	2	42	undisaggregated sediment lumps, mostly modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
3272	359	T3 Roundhouse A	Primary fill of outer ring ditch 3059	1	8	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules and charcoal (to 10 mm)	-	No
3276	349	T3 Roundhouse A	Fill of 3275, end of 3266, the inner gully of Roundhouse A	1	26	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm), one charred glume base of spelt ( <i>Triticum spelta</i> L.), one charred grain of spelt ( <i>Triticum spelta</i> L.) and two charred unidentifiable cereal grains (eroded and distorted)	-	Yes
3313	333	T3 Roundhouse A	Layer between clay 3003 and grey deposit with stones 3306	2	16	modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 15 mm) and one charred grain of wheat ( <i>Triticum</i> )	hazel ( <i>Corylus</i> )	Yes
3318	335	T3 Roundhouse A	Fill of 3319	1	18	undisaggregated sediment lumps, mostly modern rootlets, a few seeds of goosefoot ( <i>Chenopodium</i> ), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 5 mm)	-	No
3320	336	T3 Roundhouse A	Fill of 3319	1	12	undisaggregated sediment lumps, mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
3321	337	T3 Roundhouse A	Fill of 3058, disturbed by animal burrow	1	12	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, several seeds of goosefoot ( <i>Chenopodium</i> ), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and a few fragments of charcoal (to 5 mm)	-	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3334	350	T3 Roundhouse A	Fill of 3335	1	1	undisaggregated sediment lumps, mostly modern rootlets, one uncharred florescence of the grass family (Poaceae) a few fragments of fine charcoal (to 6 mm)	-	No
3336	352	T3 Roundhouse A	Fill of 3337	1	1	undisaggregated sediment lumps, mostly modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of fine charcoal (to 6 mm)	-	No
3344	353	T3 Roundhouse A	Possibly contemporary ground surface of Roundhouse A, possibly the same as 3276	1	6	undisaggregated sediment lumps, mostly modern rootlets, few seeds of goosefoot ( <i>Chenopodium</i> ), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, a few fragments of charcoal (to 10 mm), one charred glume base of spelt ( <i>Triticum spelta</i> L.) and one charred grain of wheat ( <i>Triticum</i> )	-	Yes
3346	354	T3 Roundhouse A	Lower fill of 3347	1	8	undisaggregated sediment lumps, mostly modern rootlets, a few charcoal fragments (to 10 mm), one charred glume base of spelt ( <i>Triticum spelta</i> L.) and one charred grain of wheat ( <i>Triticum</i> )	-	Yes
3364	360	T3 Roundhouse A	Fill of 3365	1	9	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, several uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 10 mm) and one charred grain of oat ( <i>Avena</i> )	-	Yes
3383	400	T3 Roundhouse A	Deposit to the N of the drainage ditch. Probably the base of the ploughsoil, where it mixes with the natural	1	4	undisaggregated sediment lumps and a few fragments of charcoal (to 5 mm)	-	No
3384	401	T3 Roundhouse A	Fill of 3385	2	26	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, earthworm egg capsules, a few seeds of goosefoot ( <i>Chenopodium</i> ), two achenes of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, mostly charcoal (to 10 mm), one charred fragment of hazelnut shell and one charred caryopsis of brome ( <i>Bromus</i> )	-	Yes
3386	408	T3 Roundhouse A	Fill of 3387, hard to distinguish from the natural in places	1	18	mostly modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
3434	379	T3 Roundhouse A	Fill of 3440	1	51	a few modern rootlets, seven uncharred seeds of goosefoot ( <i>Chenopodium</i> ) and charcoal (to 15 mm)	oak ( <i>Quercus</i> )	No
3435	377	T3 Roundhouse A	Fill of 3441	1	137	a few modern rootlets, four earthworm egg capsules, eight uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 15 mm) and one charred fragment of hazelnut shell	-	Yes
3438	378	T3 Roundhouse A	Fill of gully 3439	1	8	mostly undisaggregated sediment lumps and modern rootlets, with one seed of goosefoot ( <i>Chenopodium</i> ), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, a few charcoal fragments (to 10 mm) and one charred achene of stinking chamomile ( <i>Anthemis cotula</i> L.)	-	No
3460	380	T3 Roundhouse A	Fill of possible drainage gully 3461	1	14	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few seeds of goosefoot ( <i>Chenopodium</i> ), one achene of knotgrass ( <i>Polygonum aviculare</i> L.), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 10 mm)	-	No
3470	385	T3 Roundhouse A	Fill of 3471	2	62	undisaggregated sediment lumps, mostly modern rootlets, two seeds of goosefoot ( <i>Chenopodium</i> ), one achene of knotgrass ( <i>Polygonum aviculare</i> L.), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 10 mm)	-	No
3475	387	T3 Roundhouse A	Fill of 3476	1	1	undisaggregated sediment lumps and a few fragments of charcoal (to 10 mm)	-	No
3495	405	T3 Roundhouse A	Fill of 3496, part of the inner drainage	2	38	undisaggregated sediment lumps, modern rootlets, a few earthworm egg capsules, a	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			gully of Roundhouse A			few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.), one charred grain of wheat ( <i>Triticum</i> ) and one charred unidentifiable cereal grain (eroded and distorted)		
3517	406	T3 Roundhouse A	Fill of 3518, a central feature in Roundhouse A	2	38	undisaggregated sediment lumps, modern rootlets, a few earthworm egg capsules, seven seeds of goosefoot ( <i>Chenopodium</i> ), one seed of elder ( <i>Sambucus nigra</i> L.), one achene of knotgrass ( <i>Polygonum aviculare</i> L.), one fruit stone of bramble ( <i>Rubus</i> ) - all uncharred and modern, mostly charcoal (to 15 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	Yes
3530	409	T3 Roundhouse A	Fill of 3531, contained several large stones placed across the line of the gully	1	8	undisaggregated sediment lumps, mostly modern rootlets, one uncharred fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) - modern, and charcoal (to 10 mm)	-	No
3532	407	T3 Roundhouse A	Fill of 3533, a post-hole below the end of a late phase of the inner gully in Roundhouse A	1	1	mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
3538	412	T3 Roundhouse A	Fill of 3539	1	4	mostly modern rootlets, a few seeds of goosefoot ( <i>Chenopodium</i> ), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 15 mm)	-	No
3540	413	T3 Roundhouse A	Fill of 3541	2	72	a few modern rootlets, six earthworm egg capsules, one uncharred achene of knotgrass ( <i>Polygonum aviculare</i> L.) - modern, charcoal (to 15 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> )	Yes
3540	453	T3 Roundhouse A	as above	1	178	a few modern rootlets, five earthworm egg capsules, charcoal (to 15 mm) and a grain assemblage (listed in Table 6b - see below)	-	Yes
3548	414	T3 Roundhouse A	Fill of 3549, the earliest inner gully in Roundhouse A	1	20	small stones (to 5 mm), mostly modern rootlets, charcoal (to 15 mm) and one charred grain of wheat ( <i>Triticum</i> )	-	Yes
3548	428	T3 Roundhouse A	as above	1	14	some stones (to 15 mm), mostly modern rootlets and charcoal (to 13 mm)	-	No
3550	415	T3 Roundhouse A	Fill of 3551	1	8	undisaggregated sediment lumps, mostly modern rootlets, two earthworm egg capsules and a few fragments of charcoal (to 5 mm)	-	No
3558	417	T3 Roundhouse A	Fill of 3559, some flat red mudstone fragments appeared as if they were lining the N face of the cut close to the base	1	14	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, several uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of charcoal (to 8 mm)	-	No
3561	426	T3 Roundhouse A	Fill of 3491	1	12	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets and charcoal (to 15 mm)	pine ( <i>Pinus</i> )	No
3562	422	T3 Roundhouse A	Fill of 3563.	1	4	small stones (to 5 mm), mostly modern rootlets and a few fragments of charcoal (to 5 mm)	-	Yes
3565	420	T3 Roundhouse A	Fill of 3566, terminus of straight gully/animal burrow?	1	31	mostly undisaggregated sediment lumps, charcoal (to 15 mm), one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.), one charred grain of oat ( <i>Avena</i> ) and six charred unidentifiable cereal grains (eroded and distorted)	hazel ( <i>Corylus</i> )	Yes
3569	419	T3 Roundhouse A	Fill of 3570	1	159	few waterlogged seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> )	Yes
3571	421	T3 Roundhouse A	Fill of 3572	1	6	a few modern rootlets and charcoal (to 8 mm)	-	No
3575	423	T3 Roundhouse A	Fill of 3576	1	9	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, several uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few fragments of charcoal (to 5 mm) and one charred silted cereal grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.)	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3604	427	T3 Roundhouse A	Fill of 3602, most likely hillwash material	1	5	undisaggregated sediment lumps, mostly modern rootlets, a few earthworm egg capsules, few charcoal (to 8 mm), one charred grain of emmer wheat ( <i>Triticum dicoccum</i> Schübl.) and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) - probably naked barley	-	Yes
3669	450	T3 Roundhouse A	Upper fill of 3671, heavily burnt with a possible clay lining	1	79	mostly charcoal (to 20 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
3670	451	T3 Roundhouse A	Primary fill of ditch, terminus and 'oven', possibly the remains of a burnt clay lining	2	321	mostly charcoal (to 20 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> ) – dominant, oak ( <i>Quercus</i> )	Yes
3718	454	T3 Roundhouse A	Fill of 3717, a slightly siltier area in the centre may be the remains of a post-pipe	1	37	mostly charcoal (to 17 mm) and a grain assemblage (listed in Table 6b - see below)	hazel ( <i>Corylus</i> )	Yes

XIV.6b) Roundhouse A larger grain assemblages

			T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA
<b>Feature</b>			?hearth	corn drier	corn drier	gully	corn drier	corn drier	post-hole
<b>Context</b>			3517	3540	3540	3569	3669	3670	3718
<b>Sample</b>			406	413	453	419	450	451	454
<b>Radiocarbon date (where available)</b>			-	-	-	-	AD1040 to 1260	AD1020 to 1210	AD1010 to 1210
<b>sample volume (in litres)</b>			49	25	?	22	32	30	10
<b>flot weight (in g)</b>			37	68	178	159	79	143	37
<b>crops</b>									
<b>grain</b>									
<i>Avena</i>	oat	grain		64	3501		1496	1590	134
<i>Avena sativa</i> L.	oat	grain with lemna			16		53	25	
<i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.	barley	grain		2	13		4	5	
<i>Secale cereale</i> L.	rye	grain	1		4	4	2		
<i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.	naked wheat	grain		2	30	3	8	7	
<i>Triticum dicoccum</i> Schübl.	emmer	grain				13			
<i>Triticum spelta</i> L.	spelt wheat	grain	19			25			
<i>Triticum</i>	wheat	grain	32						2
Cerealia indet.	cereals	grain fragments	143	92	2418	468	934	1385	446

			T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA
<b>Feature</b>			?hearth	corn drier	corn drier	gully	corn drier	corn drier	post-hole
<b>Context</b>			3517	3540	3540	3569	3669	3670	3718
<b>Sample</b>			406	413	453	419	450	451	454
<b>Radiocarbon date (where available)</b>			-	-	-	-	AD1040 to 1260	AD1020 to 1210	AD1010 to 1210
<b>sample volume (in litres)</b>			49	25	?	22	32	30	10
<b>flot weight (in g)</b>			37	68	178	159	79	143	37
<b>chaff</b>									
<i>Avena</i>	oat	awn fragment			1		3	26	
<i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.	barley	rachis segment		1	1			1	
<i>Triticum spelta</i> L.	spelt wheat	glume base				54			
<i>Triticum spelta</i> L.	spelt wheat	spikelet fork				5			
<i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.	emmer/spelt wheat	glume base	4			58	1		
<i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.	emmer/spelt wheat	spikelet fork				6			
<b>gathered plants</b>									
<i>Corylus avellana</i> L.	hazel	nut shell		18	37	1	5	2	2
<i>Rubus fruticosus</i> L. agg.	blackberry	fruit stone			2				
<i>Rubus idaeus</i> L.	raspberry	fruit stone	1	3			5	5	
<b>weeds</b>									
<i>Anthemis cotula</i> L.	stinking chamomile	achene		6			1		
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed						10	
<i>Bromus</i>	brome	caryopsis	49	2	16	96	10	10	
<i>Chrysanthemum segetum</i> L.	corn marigold	achene		8	1510		598	619	33
<i>Euphrasia/Odontites</i>	eyebright/bartsia	seed						1	
<i>Fallopia convolvulus</i> (L.) Á. Löve	black-bindweed	achene			2				
<i>Galium aparine</i> L.	cleavers	nutlet		5	5		15	9	
<i>Lapsana communis</i> L.	nipplewort	achene			8		21	22	
<i>Persicaria</i>	knotweed	achene	2		2	2	7	11	
<i>Plantago lanceolata</i> L.	ribwort plantain	seed		3	4		3	6	
Poaceae	grass family	caryopsis			2				
<i>Polygonum</i>	knotgrass	achene			1		1		

			T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA	T3 RHA
<b>Feature</b>			?hearth	corn drier	corn drier	gully	corn drier	corn drier	post-hole
<b>Context</b>			3517	3540	3540	3569	3669	3670	3718
<b>Sample</b>			406	413	453	419	450	451	454
<b>Radiocarbon date (where available)</b>			-	-	-	-	AD1040 to 1260	AD1020 to 1210	AD1010 to 1210
<b>sample volume (in litres)</b>			49	25	?	22	32	30	10
<b>flot weight (in g)</b>			37	68	178	159	79	143	37
<i>Raphanus raphanistrum</i> L.	wild radish	mericarp			5		3	8	2
<i>Rumex</i>	dock	achene			19			2	
<i>Rumex acetosella</i> L.	sheep's sorrel	achene			3		3		
<i>Vicia hirsuta</i> (L.) Gray/ <i>V. tetrasperma</i> (L.) Schreb	tare	seed			12		10	12	
<b>sum of botanical remains</b>			<b>251</b>	<b>206</b>	<b>7612</b>	<b>735</b>	<b>3183</b>	<b>3756</b>	<b>619</b>
<b>other unidentifiable plant remains</b>									
culm fragment					3		3		
charcoal (ash)									
charcoal (hazel)						x			
charcoal (oak)									
<b>modern contaminants (waterlogged)</b>									
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed		11	222	17	24		3
<i>Cirsium</i>	thistle	achene							1
<i>Fallopia convolvulus</i> (L.) Á. Löve	black-bindweed	achene		1					
<i>Fumaria</i>	fumitory	achene		2	7		1		
<i>Polygonum aviculare</i> L.	knotgrass	achene		2	2				
<i>Rubus idaeus</i> L.	raspberry	fruit stone			2		1		

XIV.6c) Roundhouse B

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3023	222	T3 Roundhouse B	Fill of 3024	1	8	undisaggregated sediment lumps, mostly modern rootlets, a few fragments of charcoal (to 10 mm) and one charred fragment of hazelnut shell	-	Yes
3084	236	T3 Roundhouse B	Fill of 3083, possible Roundhouse gully	2	35	undisaggregated sediment lumps, mostly modern rootlets, three seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of buttercup ( <i>Ranunculus</i> subg. <i>Ranunculus</i> ) - all uncharred and modern, and a few charcoal fragments (to 10 mm)	-	No
3148	289	T3 Roundhouse B	Fill of 3147, replaces 3019 and 3021	1	3	undisaggregated sediment lumps, mostly modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few fragments of charcoal (to 10 mm), two charred unidentifiable cereal grains and one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.)	-	Yes

XIV.6d) Roundhouse C

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3442	403	T3 Roundhouse C	Upper fill of 3891, internal drain within Roundhouse C. Grouped as part of 9464	1	4	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, few grit, few charcoal (red coloured, to 8 mm)	-	No
3443	402	T3 Roundhouse C	Lower fill of 3891, internal drain within Roundhouse C. Grouped as part of 9463	1	8	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, few grit, few charcoal (to 13 mm)	-	No
3449	438	T3 Roundhouse C	Water laid fill of storm drain enclosing E side of Roundhouse C. Grouped as part of 9466	1	4	mostly modern rootlets, few fine charcoal (to 3 mm)	-	No
3450	439	T3 Roundhouse C	Fill of recut 3444 of original ditch 3432. Grouped as part of 9471	2	7	mostly modern rootlets, few charcoal (to 8 mm), one waterlogged seed of elder ( <i>Sambucus</i> ) - modern	-	No
3452	440	T3 Roundhouse C	?General layer. Grouped as part of 9470	1	35	undisaggregated sediment lumps, mostly modern rootlets, few fine charcoal (to 3 mm)	-	No
3580	487	T3 Roundhouse C	Fill of 3304 internal drain of Roundhouse. Grouped as part of 9464	1	15	undisaggregated sediment lumps, mostly modern rootlets, few fine charcoal (to 5 mm)	-	No
3581	486	T3 Roundhouse C	Main fill of 3304, internal drain of Roundhouse C. Grouped as part of 9463	1	13	undisaggregated sediment lumps, a few stones (to 10 mm), mostly modern rootlets, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.), one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and some charcoal (to 13 mm)	-	No
3582	467	T3 Roundhouse C	Fill of 3674, a pit or stone-hole within Roundhouse C	1	13	small stones (to 5 mm), a few fragments of cinder and coal, mostly modern rootlets, twenty seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - uncharred and modern and a few charcoal fragments (to 10 mm)	-	No
3583	468	T3 Roundhouse C	Fill of pit 3325	1	7	undisaggregated sediment lumps, small stones (to 5 mm), mostly modern rootlets and a few fragments of fine charcoal (to 5 mm)	-	No
3584	469	T3 Roundhouse C	Earliest fill of pit cut 3325	1	8	few undisaggregated sediment lumps, grit (to 10 mm), mostly modern rootlets and a few fragments of charcoal (to 10 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	No
3585	470	T3 Roundhouse C	Fill of pit 3586	2	11	small stones (to 5 mm), mostly modern rootlets, three earthworm egg capsules, nine uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of	hazel ( <i>Corylus</i> )	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
						charcoal (to 15 mm)		
3588	471	T3 Roundhouse C	Main fill of 3589. Very similar to 3585	1	8	mostly small stones (to 5 mm) and modern rootlets, with a few fragments of charcoal (to 8 mm)	-	No
3606	432	T3 Roundhouse C	Fill of storm drain for Roundhouse C. Grouped as part of 9470	1	1	undisaggregated sediment lumps, small stones, mostly modern rootlets and a few fragments of charcoal (to 3 mm)	-	No
3627	433	T3 Roundhouse C	Fill of poorly defined gully	1	5	mostly modern rootlets, one earthworm egg capsule, five uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few charcoal fragments (to 5 mm) and one charred fragment of hazelnut shell	-	Yes
3648	472	T3 Roundhouse C	Upper fill of possible posthole	1	24	a few fragments of coal, mostly modern rootlets, two earthworm egg capsules, 17 uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
3649	473	T3 Roundhouse C	Spread	1	50	mostly modern rootlets, one earthworm egg capsule, a few seeds of goosefoot ( <i>Chenopodium</i> ), a few achenes of knotgrass ( <i>Polygonum aviculare</i> L.), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, charcoal (to 15 mm), one charred grain of oat ( <i>Avena</i> ) and two charred unidentifiable cereal grains (eroded and distorted)	-	Yes
3651	474	T3 Roundhouse C	Fill of posthole	1	4	mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and some fine charcoal fragments (to 5 mm)	-	No
3672	475	T3 Roundhouse C	Layer covering the centre of 3631 'hearth area'	2	24	mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few fragments of fine charcoal (to 8 mm), one charred glume base of emmer/spelt ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.), one charred grain of emmer/spelt wheat ( <i>Triticum dicoccum</i> Schübl./ <i>T. spelta</i> L.) and two charred unidentifiable grains	-	Yes
3681	441	T3 Roundhouse C	Fill of small pit, fill similar to adjacent 'hearth' feature 3762	1	10	mostly modern rootlets, two earthworm egg capsules, three seeds of goosefoot ( <i>Chenopodium</i> ), one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.), two achenes of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, mostly charcoal (to 20 mm) and one small charred fragment of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
3682	488	T3 Roundhouse C	Fill of small pit within post-hole 3678	1	5	a few small stones (to 4 mm), many undisaggregated lumps of ash and charcoal, modern rootlets, a few fragments of coal and a little fine charcoal (to 5 mm)	-	No
3684	502	T3 Roundhouse C	Upper fill of internal drain for Roundhouse C, which may have accumulated after the drain went out of use. Grouped as part of 9464	1	61	lumps of fused ash (with a high mineral content, perhaps derived from plant silica) and mostly modern rootlets	-	No
3684	489	T3 Roundhouse C	as above	1	4	lumps of fused ash (with a high mineral content, perhaps derived from plant silica) and mostly modern rootlets	-	No
3685	458	T3 Roundhouse C	Fill of post-hole 3678	1	4	a few small stones (to 3 mm), mostly modern rootlets, few coal, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ) and one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) - all uncharred and modern and a few fragments of fine charcoal (to 5 mm)	-	No
3692	476	T3 Roundhouse C	?Debris from a hearth	1	13	mostly modern rootlets and charcoal (to 10 mm)	-	No
3693	478	T3 Roundhouse C	Fill of 3694, one of a group of pits in the centre of Roundhouse C	1	83	few modern rootlets, mostly charcoal (to 13 mm), one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and two charred unidentifiable cereal grains (distorted and eroded)	-	Yes
3695	479	T3 Roundhouse C	?Site of a burning event. Perhaps some	1	8	undisaggregated sediment lumps, modern rootlets and charcoal (to 10 mm)	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
			kind of clay base for a hearth?					
3696	480	T3 Roundhouse C	Mottled burnt layer underneath 3695	1	12	undisaggregated sediment lumps, modern rootlets, one uncharred, modern seed of goosefoot ( <i>Chenopodium</i> ), charcoal (to 10 mm), one charred grain of oat ( <i>Avena</i> ) and six charred unidentifiable cereal grains (distorted and eroded)	-	Yes
3701	452	T3 Roundhouse C	Fill of 3702, terminus of internal drain of Roundhouse C. Grouped as part of 9463	1	11	grit (to 3 mm), mostly modern rootlets, few coal, three earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and charcoal (to 10 mm, decayed and deformed)	-	No
3709	503	T3 Roundhouse C	Lower fill of internal drain for Roundhouse C. Grouped as part of 9463	1	7	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, two earthworm egg capsules, two uncharred and modern seeds of goosefoot ( <i>Chenopodium</i> ) and charcoal (to 10 mm)	-	No
3709	490	T3 Roundhouse C	as above	1	6	stones (to 10 mm), mostly modern rootlets and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
3731	455	T3 Roundhouse C	Fill of ditch 3732	1	5	undisaggregated sediment lumps, mostly modern rootlets, one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) and one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern and a few fragments of charcoal (to 3 mm)	-	No
3741	481	T3 Roundhouse C	Fill of possible fire pit	1	10	undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule, charcoal (to 10 mm), one charred grain of spelt wheat ( <i>Triticum spelta</i> L.) and one unidentifiable cereal grain (distorted and eroded)	-	Yes
3742	482	T3 Roundhouse C	Lower fill of possible fire pit 3673	1	11	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, three earthworm egg capsules, four uncharred, modern seeds of goosefoot ( <i>Chenopodium</i> ) and charcoal (to 10 mm)	-	No
3745	514	T3 Roundhouse C	Fill of linear feature, possibly a beam slot for a fence or a drainage ditch	1	4	small stones (to 4 mm) and modern rootlets	-	No
3759	484	T3 Roundhouse C	Fill of small pit 3760	1	7	undisaggregated sediment lumps, modern rootlets, two earthworm egg capsules, ten uncharred, modern seeds of goosefoot ( <i>Chenopodium</i> ) and a few charcoal fragments (to 5 mm)	-	No
3761	485	T3 Roundhouse C	Fill of shallow hollow	1	22	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), modern rootlets and mostly charcoal (to 10 mm)	-	No
3765	457	T3 Roundhouse C	Fill of posthole	1	3	undisaggregated sediment lumps, modern rootlets and a few fragments of fine charcoal (to 3 mm)	-	No
3781	494	T3 Roundhouse C	Fill of possible structural post-hole for Roundhouse C	1	1	modern rootlets and a few charcoal fragments (to 5 mm)	-	No
3782	493	T3 Roundhouse C	Fill of internal drain for Roundhouse C	1	6	modern rootlets and a few charcoal fragments (to 10 mm)	-	No
3840	506	T3 Roundhouse C	Fill of 3839, with the post either pushed into it, or deposited after the post was in place	1	5	undisaggregated sediment lumps, mostly modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of charcoal (to 10 mm)	-	No
3840	506	T3 Roundhouse C	as above	1	5	undisaggregated sediment lumps, mostly modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern and a few fragments of charcoal (to 10 mm)	-	No
3841	507	T3 Roundhouse C	Fill of post-pipe 3859 within 3839	1	5	undisaggregated sediment lumps, mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of charcoal (to 10 mm)	-	No
3841	507	T3 Roundhouse C	as above	1	5	undisaggregated sediment lumps, mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of charcoal (to 10 mm)	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3844	509	T3 Roundhouse C	Fill of 3845, a possible slot for a fence line. Grouped as part of 9476	1	22	undisaggregated sediment lumps, modern rootlets, one earthworm egg capsule, two seeds of goosefoot ( <i>Chenopodium</i> ), one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) and one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 10 mm)	-	No
3860	508	T3 Roundhouse C	Fill of irregular shallow channel	1	5	small stones (to 3 mm), mostly modern rootlets, four earthworm egg capsules, five seeds of goosefoot ( <i>Chenopodium</i> ) and three nuts of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - all uncharred and modern, and charcoal (to 5 mm)	-	No
3864	512	T3 Roundhouse C	Fill of shallow ditch 3865. Grouped as part of 9478	1	6	small stones (to 3 mm), undisaggregated sediment lumps, modern rootlets, four earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and a few fragments of fine charcoal (to 5 mm)	-	No
3866	510	T3 Roundhouse C	Accumulation of silt around the main fill of stones 3882	2	23	undisaggregated sediment lumps, mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
3868	513	T3 Roundhouse C	Fill of 3869, part of linear alignment	1	10	small stones (to 5 mm), undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule, one seed of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and charcoal (to 10 mm)	-	No
3892	515	T3 Roundhouse C	Fill of short gully 3890, part of outer drain complex in Roundhouse C	1	9	small stones (to 3 mm), lumps of fused ash (with a high mineral content, perhaps derived from plant silica), modern rootlets, two earthworm egg capsules, one uncharred, modern seed of goosefoot ( <i>Chenopodium</i> ) and charcoal (to 10 mm)	-	No

XIV.6e) Roundhouse C/D

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3254	320	T3 Roundhouse C/D	Fill of 3256, part of enclosure/drainage ditch around Roundhouses C and D. (3254) is the only fill in this sondage to contain a significant amount of charcoal	1	32	a few modern rootlets, one uncharred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - modern, and charcoal (to 35 mm; distorted)	probably hazel (cf. <i>Corylus</i> )	No
3348	355	T3 Roundhouse C/D	Fill of 3350	1	6	mostly modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, a few fragments of fine charcoal (to 5 mm) and one charred cereal grain (poorly preserved, probably wheat - <i>Triticum</i> )	-	No
3349	356	T3 Roundhouse C/D	Primary fill of 3350	1	3	mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) and one nutlet of hemp-nettle ( <i>Galeopsis</i> ) - both uncharred and modern, and a few fragments of charcoal (to 10 mm)	-	No
3370	389	T3 Roundhouse C/D	Fill of 3371	1	14	few modern rootlets, one uncharred fruit stone of raspberry ( <i>Rubus idaeus</i> L.) - modern, and charcoal (to 15 mm; distorted)	probably hazel (cf. <i>Corylus</i> )	No

XIV.6f) Roundhouse D

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3907	517	T3 Roundhouse D	Lower fill of 3863	1	13	mostly modern rootlets, with a few fragments of charcoal (to 10 mm)	-	Yes
3928	518	T3 Roundhouse D	Fill of 3929, shallow gully related to Roundhouse D	1	13	mostly modern rootlets and a few fine charcoal fragments (to 5 mm)	-	Yes
3950	526	T3 Roundhouse D	Fill of 3952, on the W edge of small gully 3952	1	3	mostly modern rootlets and a few fragments of fine charcoal (to 5 mm)	-	Yes
3953	526	T3 Roundhouse D	Upper fill of 3954 and 3978, but renumbered as 3976	1	7	undisaggregated sediment lumps, mostly modern rootlets, seven earthworm egg capsules, one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.), one seed of elder ( <i>Sambucus</i> ), one seed of goosefoot ( <i>Chenopodium</i> ), one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, and a few fragments of charcoal (to 10 mm)	-	No
3957	527	T3 Roundhouse D	Lower fill of 3954, appeared to be the same as 3977. Possibly the remains of a post-pipe?	1	22	undisaggregated sediment lumps, mostly modern rootlets and charcoal (to 15 mm)	oak ( <i>Quercus</i> )	No
3959	529	T3 Roundhouse D	Fill of 3960, part of a possible partition across Roundhouse D	1	12	a few fragments of cinder and coal, mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a little charcoal (to 10 mm)	-	No
3991	530	T3 Roundhouse D	Fill of 3992, a gully extending NW from and partially within Roundhouse D	2	14	mostly modern rootlets, two earthworm egg capsules, one fruit stone of bramble ( <i>Rubus</i> ) and two seeds of goosefoot ( <i>Chenopodium</i> ) - all uncharred and modern and a few fragments of charcoal (to 15 mm)	-	No
9028	531	T3 Roundhouse D	Fill of 9027	1	4	mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
9033	532	T3 Roundhouse D	Fill of post-hole 9034	1	6	small stones (to 10 mm), mostly modern rootlets and a few charcoal fragments (to 10 mm)	-	No
9052	551	T3 Roundhouse D	Cut/fill of animal burrow	1	36	mostly modern rootlets, slag, coal, one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) and two seeds of goosefoot ( <i>Chenopodium</i> ) - all uncharred and modern, and a few charcoal fragments (to 15 mm)	-	No

XIV.6g) Roundhouse E

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
4179	345	T3 Roundhouse E	Charcoal rich deposit, fills 4383 containing hearth stones 4263	2	328	a few modern rootlets, five earthworm egg capsules, 13 uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and a grain assemblage (listed in Table 6h - see below)	ash ( <i>Fraxinus</i> ), probably oak (cf. <i>Quercus</i> )	Yes
4196	533	T3 Roundhouse E	Rubble deposit sealing Roundhouse E.	1	3	undisaggregated sediment lumps and charcoal (to 10 mm)	-	No
4197	346	T3 Roundhouse E	Burnt stoney layer below 4196 and E of 4192. Same as 4196	3	85	undisaggregated sediment lumps, modern rootlets, six earthworm egg capsules, two seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one achene of knotgrass ( <i>Polygonum</i> ) and one fruit stone of raspberry ( <i>Rubus idaeus</i> L.) - all uncharred and modern, mostly charcoal (to 10 mm), one charred caryopsis of brome ( <i>Bromus</i> ), one charred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one charred glume base of emmer ( <i>Triticum dicoccum</i> Schübl.), one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.) and two charred cereal grains (poorly preserved, one probably emmer)	-	Yes
4227	344	T3 Roundhouse E	Fill of 4226, contained packing stones	2	15	modern rootlets, one earthworm egg capsule, two seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - all uncharred and modern and mostly charcoal (to 10 mm)	hazel ( <i>Corylus</i> )	No
4229	343	T3 Roundhouse E	Contained large packing stones. Some of fill 4230 mixed with 4229 in sample 343, as not seen until some packing stones were removed	1	37	modern rootlets, five earthworm egg capsules, three seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one achene of knotgrass ( <i>Polygonum</i> ) and one achene of thistle ( <i>Carduus/Cirsium</i> ) - all uncharred and modern, mostly charcoal (to 10 mm) and one charred cereal grain (poorly preserved, probably barley)	-	Yes
4230	717	T4 Roundhouse E	Lower fill of 4228	1	37	a few modern rootlets and charcoal 'slivers' (to 10 mm)	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
4240	376	T3 Roundhouse E	Fill of 4241, possibly cut by 4306, but not clear	2	80	mostly undisaggregated sediment lumps, modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 10 mm) and one charred achene of stinking chamomile ( <i>Anthemis cotula</i> L.)	-	No
4243	388	T3 Roundhouse E	Fill of 4244	1	4	mostly undisaggregated sediment lumps, three earthworm egg capsules, one uncharred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - modern, and a few charcoal fragments (to 5 mm)	-	No
4245	341	T3 Roundhouse E	Fill of 4194, may be part of the same deposition phase as 4197	1	12	undisaggregated sediment lumps, modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, one charred fragment of hazelnut shell, one charred grain of oat ( <i>Avena</i> ), one charred grain of wheat ( <i>Triticum</i> ) and one charred unidentifiable cereal grain	-	Yes
4247	342	T3 Roundhouse E	Fill of post-hole 4246, part of four post structure inside Roundhouse E	1	32	seven earthworm egg capsules, charcoal (to 15 mm) and one charred cereal grain (poorly preserved, probably barley)	-	Yes
4249	381	T3 Roundhouse E	Fill of 4248, possibly part of a postring inside Roundhouse E	1	78	modern rootlets, a few earthworm egg capsules, several uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 10 mm), 147 charred fragments of hazelnut shell and one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.)	hazel ( <i>Corylus</i> )	Yes
4250	382	T3 Roundhouse E	Dump of material immediately W of the entrance to Roundhouse E	7	435	undisaggregated sediment lumps, a few modern rootlets, several seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.), one achene of knotweed ( <i>Persicaria</i> ), one fruit stone of blackberry ( <i>Rubus fruticosus</i> L.)	ash ( <i>Fraxinus</i> ), hazel ( <i>Corylus</i> )	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
						agg.) - all uncharred and modern, mostly charcoal (to 15 mm) and a grain assemblage (listed in Table 6h - see below)		
4253	383	T3 Roundhouse E	Fill of post-hole 4252, one of the group of four large posts inside Roundhouse E	5	127	charcoal (to 15 mm), one charred achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), two charred cereal grains of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.)	-	Yes
4264	393	T3 Roundhouse E	Fill of 4265	1	58	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 8 mm)	-	No
4266	394	T3 Roundhouse E	Fill of 4267	3	69	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few seeds of goosefoot ( <i>Chenopodium</i> ) and one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) - all uncharred and modern, charcoal (to 15 mm) and two charred unidentifiable cereal grains (poorly preserved)	oak ( <i>Quercus</i> )	Yes
4272	395	T3 Roundhouse E	Fill of 4273	2	4	undisaggregated sediment lumps, mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
4274	396	T3 Roundhouse E	Fill of 4275, part of the triangular gully feature on the south-eastern side of the ring groove 4267.	1	16	undisaggregated sediment lumps, modern rootlets, seven seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - all uncharred and modern, and mostly charcoal (to 15 mm)	-	No
4276	397	T3 Roundhouse E	Fill of post-hole 4277, possibly part of a post ring in Roundhouse E	1	42	mostly modern rootlets, two earthworm egg capsules, 11 uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, one charred achene of sheep's sorrel ( <i>Rumex acetosella</i> L.), one charred glume base of emmer ( <i>Triticum dicoccum</i> Schübl.), one charred grain of barley ( <i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.), one charred grain of naked wheat ( <i>Triticum aestivum</i> L./ <i>durum</i> Desf./ <i>turgidum</i> L.), one charred grain of spelt wheat ( <i>Triticum spelta</i> L.) and twelve charred cereal grains (distorted and eroded)	-	Yes
4278	398	T3 Roundhouse E	Fill of 4279, same as 4274 and 4266	1	7	undisaggregated sediment lumps, mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
4282	430	T3 Roundhouse E	Fill of 4284, a rock cut channel which runs through the centre of the four post structure inside Roundhouse E	2	36	undisaggregated sediment lumps, mostly modern rootlets, four seeds of goosefoot ( <i>Chenopodium</i> ), one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, charcoal (to 10 mm) and two charred grains of wheat ( <i>Triticum</i> )	-	Yes
4292	431	T3 Roundhouse E	Fill of 4291	1	63	modern rootlets, a few earthworm egg capsules, a few seeds of goosefoot ( <i>Chenopodium</i> ), one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve) - all uncharred and modern, and charcoal (to 10 mm)	-	No
4294	434	T3 Roundhouse E	fill of 4293	1	10	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few earthworm egg capsules, few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 8 mm)	-	No
4298	436	T3 Roundhouse E	Fill of 4297, similar to 4303	1	62	mostly modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 15 mm)	-	No
4300	435	T3 Roundhouse E	Fill of 4299, some of the stones may represent the remains of packing material	1	34	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few earthworm egg capsules, few seeds of goosefoot ( <i>Chenopodium</i> ), one floret of the grass family (Poaceae), one achene of dock ( <i>Rumex</i> ) - all uncharred and modern, and charcoal (to 10 mm)	-	No
4301	437	T3 Roundhouse E	Fill of 4302	1	134	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets and charcoal (to 35 mm)	oak ( <i>Quercus</i> )	No
4303	444	T3 Roundhouse E	Fill of 4304	1	46	undisaggregated sediment lumps, mostly modern rootlets and a few fragments of	-	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
						charcoal (to 5 mm)		
4305	445	T3 Roundhouse E	Fill of 4306	1	27	undisaggregated sediment lumps, mostly modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a little charcoal (to 8 mm)	-	No
4307	446	T3 Roundhouse E	Possible hearth layer, not in a true cut but overlies a loosely packed stone base in a very slight dip	2	115	mostly rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, some small fragments of charcoal (to 10 mm), one charred fragment of hazelnut shell and a grain assemblage (listed in Table 6h - see below)	-	Yes
4308	447	T3 Roundhouse E	Fill of 4309	1	8	mostly modern rootlets, a few earthworm egg capsules, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a little charcoal (to 8 mm)	-	No
4316	448	T3 Roundhouse E	Fill of 4315, ring gully of ancillary structure to the NE of Roundhouse E	1	22	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, a few earthworm egg capsules, one achene of black-bindweed ( <i>Fallopia convolvulus</i> (L.) Á. Löve), one nutlet of dead-nettle ( <i>Lamium</i> ), one achene of fumitory ( <i>Fumaria</i> ), a few seeds of goosefoot ( <i>Chenopodium</i> ) - all uncharred and modern, and a few fragments of charcoal (to 12 mm)	-	No
4324	460	T3 Roundhouse E	Fill of 4323	1	10	undisaggregated sediment lumps, mostly modern rootlets, few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few charcoal fragments (to 10 mm)	-	No
4329	461	T3 Roundhouse E	Fill of 4330, the larger stones were not obvious packing but may have slipped into the fill from their original positions	1	5	mostly modern rootlets, one earthworm egg capsule, four seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few charcoal fragments (to 10 mm)	-	No
4362	462	T3 Roundhouse E	Fill of 4361	1	6	mostly small stones and a few charcoal (to 5 mm)	-	No
4379	463	T3 Roundhouse E	Fill of 4378, similar to the fill of nearby postholes but with charcoal	1	44	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, and charcoal (to 15 mm)	probably hazel (cf. <i>Corylus</i> )	No
4392	465	T3 Roundhouse E	Fill of 4391, the rich charcoal fill may represent the <i>in situ</i> burning of the post	1	35	lumps of fused ash (with a high mineral content, perhaps derived from plant silica), a few modern rootlets and charcoal (to 5 mm)	-	No
4403	466	T3 Roundhouse E	Burnt natural beneath the hearth 4263	1	100	a few modern rootlets, a few uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, mostly charcoal (to 20 mm) and a grain assemblage (listed in Table 6h - see below)	ash ( <i>Fraxinus</i> ) – dominant, hazel ( <i>Corylus</i> )	Yes

XIV.6h) Roundhouse E larger grain assemblages

	T4 RHE	T4 RHE	T4 RHE	T4 RHE
<b>Feature</b>	hearth	?hearth	hearth	hearth
<b>Context</b>	4179	4250	4307	4403
<b>Sample</b>	345	382	446	466
<b>Radiocarbon date (where available)</b>	AD570 to 670	AD450 to 665	-	-
<b>sample volume (in litres)</b>	40	104	26	16
<b>flot weight (in g)</b>	592	432	114	100
<b>crops</b>				
<b>grain</b>				

			<b>T4 RHE</b>	<b>T4 RHE</b>	<b>T4 RHE</b>	<b>T4 RHE</b>
<b>Feature</b>			hearth	?hearth	hearth	hearth
<b>Context</b>			4179	4250	4307	4403
<b>Sample</b>			345	382	446	466
<b>Radiocarbon date (where available)</b>			AD570 to 670	AD450 to 665	-	-
<b>sample volume (in litres)</b>			40	104	26	16
<b>flot weight (in g)</b>			592	432	114	100
<i>Avena</i>	oat	grain	322	55	69	87
<i>Hordeum distichon</i> L./ <i>H. vulgare</i> L.	barley	grain	259	44	3	49
<i>Hordeum vulgare</i> L.	hulled barley	grain	9	2		
<i>Hordeum vulgare</i> L.	naked barley	grain	55	9		
<i>Secale cereale</i> L.	rye	grain			7	
<i>Triticum aestivum</i> L./ <i>T. durum</i> Desf./ <i>T. turgidum</i> L.	naked wheat	grain	286	37	62	72
<i>Triticum spelta</i> L.	spelt wheat	grain	4	1	6	1
Cerealia indet.	cereals	grain fragments	1221	202	236	176
<b>gathered plants</b>						
<i>Corylus avellana</i> L.	hazel	nut shell			46	
<b>weeds</b>						
<i>Anthemis cotula</i> L.	stinking chamomile	achene			1	
<i>Bromus</i>	brome	caryopsis	2			
<i>Chenopodium album</i> L.	fat-hen	seed	27			
<i>Fallopia convolvulus</i> (L.) Á. Löve	black-bindweed	achene	59	2		
<i>Lapsana communis</i> L.	nipplewort	achene	9			
<i>Persicaria</i>	knotweed	achene	34	2	2	2
Poaceae	grass family	caryopsis	1			
<i>Polygonum aviculare</i> L.	knotgrass	achene	7			
<i>Raphanus raphanistrum</i> L.	wild radish	mericarp	4			1
<i>Rumex</i>	dock	achene	6			
<i>Vicia hirsuta</i> (L.) Gray/ <i>V. tetrasperma</i> (L.) Schreb	tare	seed	3			
<b>sum of botanical remains</b>			<b>2308</b>	<b>354</b>	<b>432</b>	<b>388</b>

			T4 RHE	T4 RHE	T4 RHE	T4 RHE
<b>Feature</b>			hearth	?hearth	hearth	hearth
<b>Context</b>			4179	4250	4307	4403
<b>Sample</b>			345	382	446	466
<b>Radiocarbon date (where available)</b>			AD570 to 670	AD450 to 665	-	-
<b>sample volume (in litres)</b>			40	104	26	16
<b>flot weight (in g)</b>			592	432	114	100
<b>other unidentifiable plant remains</b>						
charcoal (ash)						x
charcoal (hazel)						x
<b>modern contaminants (waterlogged)</b>						
<i>Atriplex/Chenopodium</i>	orache/goosefoot	seed	68	7	15	
<i>Fumaria</i>	fumitory	achene	1	4	1	1
<i>Polygonum aviculare</i> L.	knotgrass	achene			1	
<i>Rubus idaeus</i> L.	raspberry	fruit stone		2		

XIV.6i) Structure F – possible Roundhouse

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
3921	571	T3 Structure F	Fill of presumed drainage gully 3922	1	6	small stones (to 5 mm), mostly modern rootlets and fragments of fine charcoal (to 5 mm)	-	No
9018	572	T3 Structure F	Main fill of post-hole 9020	2	7	small stones (to 5 mm), lumps of fused ash (with a high mineral content, perhaps derived from plant silica), mostly modern rootlets, one seed of goosefoot ( <i>Chenopodium</i> ) and two achenes of knotweed ( <i>Persicaria</i> ) - all uncharred and modern, and a few fragments of fine charcoal (to 5 mm)	-	No
9021	534	T3 Structure F	Fill of natural feature 9023	1	24	undisaggregated sediment lumps, mostly modern rootlets and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
9035	537	T3 Structure F	Fill of probable stone-hole 9036	1	31	mostly modern rootlets, two earthworm egg capsules, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
9053	545	T3 Structure F	Fill of possible ditch 9054	1	14	mostly modern rootlets and charcoal (to 20 mm)	hazel ( <i>Corylus</i> )	No
9075	561	T3 Structure F	Fill of pit 9066	1	13	mostly modern rootlets, coal (to 10 mm), slag (to 10 mm), two uncharred achenes of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - modern, a few fragments of charcoal (to 10 mm) and one charred fragment of hazelnut shell	-	Yes
9095	543	T3 Structure F	Fill of post-hole 9096	1	13	mostly modern rootlets and charcoal (to 10 mm)	-	No
9097	695	T3 Structure F	Fill of possible stone-hole or hollow 9098	1	8	small stones (to 6 mm), mostly modern rootlets and a little charcoal (to 10 mm)	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9100	544	T3 Structure F	Large post-hole	1	9	mostly modern rootlets and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	Yes
9107	550	T3 Structure F	Fill of post-hole 9108, contained a piece of possible slag	1	2	mostly modern rootlets and a few fragments of fine charcoal (to 5 mm)	-	No
9111	578	T3 Structure F	Fill of pit 9112	4	17	a few fragments of coal, mostly modern rootlets, and a little fine charcoal (to 5 mm)	-	No
9113	583	T3 Structure F	Stoney fill of irregular gully 9397, on edge of Structure F	1	29	undisaggregated sediment lumps (to 10 mm), mostly modern rootlets, some slag and coal, four seeds of goosefoot ( <i>Chenopodium</i> ) and three achenes of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and charcoal (to 10 mm)	-	No
9113	689	T3 Structure F	as above	1	9	a few small stones (to 4 mm), mostly modern rootlets, two earthworm egg capsules, one uncharred achene of knotgrass ( <i>Polygonum aviculare</i> L.) - modern, and few fragments of charcoal (to 10 mm)	-	No
9118	547	T3 Structure F	Fill of post-hole 9119	1	5	a few fragments of cinder and coal, mostly modern rootlets, one earthworm egg capsule, and a little fine charcoal (to 5 mm)	-	No
9120	549	T3 Structure F	Fill of post-hole 9121	2	41	a few small stones (to 10 mm), mostly modern rootlets and charcoal (to 15 mm), one charred grain of wheat ( <i>Triticum</i> ) - poorly preserved, and one charred glume base - probably emmer wheat ( <i>Triticum dicoccum</i> Schübl.)	oak ( <i>Quercus</i> )	Yes
9123	552	T3 Structure F	Fill of post impression in base of post-hole 9100	1	4	small stones (to 4 mm), mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
9137	556	T3 Structure F	Fill of post-hole 9138	1	111	undisaggregated sediment lumps (to 10 mm), mostly modern rootlets, charcoal (to 20 mm; deformed and orange-brown in colour)	-	No
9141	558	T3 Structure F	Fill of post-hole 9142	1	4	small stones (to 15 mm), mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
9145	546	T3 Structure F	?Fill of post-hole or pit	1	8	mostly modern rootlets and charcoal (to 10 mm)	-	No
9147	565	T3 Structure F	Fill of pit 9148	1	10	a few fragments of cinder and coal, mostly modern rootlets and a little charcoal (to 10 mm)	-	No
9149	562	T3 Structure F	Upper fill of ditch 9007, one of the main enclosure/drainage ditches to the S and E of Structure F	2	19	lumps of ash and charcoal (to 10 mm), mostly modern rootlets, two seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and a few charcoal fragments (to 15 mm)	-	No
9150	563	T3 Structure F	Lower fill of ditch 9007, one of the main enclosure/drainage ditches to the S and E of Structure F	1	20	lumps of ash and charcoal (to 10 mm), mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
9152	582	T3 Structure F	Large stone packed post-hole with smaller adjacent post-hole 9202, both assumed to be contemporary	1	6	a few small stones (to 8 mm), mostly modern rootlets, one uncharred achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - modern, and a little charcoal (to 5 mm)	-	No
9155	579	T3 Structure F	Upper fill of post-hole 9156 to the E of Structure F	1	15	mostly modern rootlets, one uncharred achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - modern, and some charcoal (to 15 mm; orange-brown in colour)	-	No
9203	581	T3 Structure F	Fill of post-hole 9202, part of entrance feature to Structure F	1	3	a few fragments of cinder and coal, mostly modern rootlets, and a little fine charcoal (to 5 mm)	-	No
9204	584	T3 Structure F	Lower fill of possible double post-hole 9152, part of entrance feature to Structure F	1	6	small stones (to 5 mm), mostly modern rootlets, and a few fragments of fine charcoal (to 5 mm)	-	No

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9206	590	T3 Structure F	Secondary fill of shallow pit 9205	2	12	Small stones (to 5 mm), two modern fly puparia, one modern insect fragment (elytron), mostly modern rootlets, one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.), one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.), one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - all uncharred and modern, and a few fragments of charcoal (to 13 mm)	oak ( <i>Quercus</i> )	No
9207	585	T3 Structure F	Fill of stake-hole 9208	1	1	small stones (to 3 mm), a few modern rootlets and fine charcoal (to 5 mm)	-	No
9209	587	T3 Structure F	Fill of stake-hole 9210, just W of entrance feature into Structure F	1	1	small stones (to 3 mm), a few modern rootlets and fine charcoal (to 5 mm)	-	No
9213	586	T3 Structure F	Fill of stake-hole 9214 near pit 9148 in Structure F	1	1	mostly small stones (to 6 mm), a few modern rootlets, and a little fine charcoal (to 3 mm)	-	No
9215	591	T3 Structure F	Lower fill of shallow pit 9205	2	19	small stones (to 5 mm), mostly modern rootlets, and a few fragments of fine charcoal (to 5 mm)	-	No
9295	596	T3 Structure F	Fill of post-hole 9296 at the W end of Structure F	1	8	mostly modern rootlets, a few charcoal fragments (to 10 mm)	-	No
9301	598	T3 Structure F	Fill of possible post-hole 9300 in ditch 3920	1	10	small stones (to 10 mm), undisaggregated sediment lumps (to 5 mm), mostly modern rootlets and charcoal (to 10 mm)	-	No
9302	671	T3 Structure F	Base of ploughsoil left in shallow depression	1	21	undisaggregated sediment lumps, mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
9313	676	T3 Structure F	Upper fill of pit 9315	1	9	small stones (to 5 mm), mostly modern rootlets and charcoal (to 13 mm)	probably hazel (cf. <i>Corylus</i> )	No
9319	675	T3 Structure F	Fill of pit 9320	1	6	small stones (to 3 mm), mostly modern rootlets, two earthworm egg capsules and a few fragments of charcoal (to 5 mm)	-	No
9322	674	T3 Structure F	Spread of clay, seems to be deliberately deposited to fill a hollow	1	11	mostly modern rootlets and a few charcoal fragments (to 5 mm)	-	No
9332	679	T3 Structure F	Fill of post-hole 9333, immediately W of triple post-hole on the E side of Structure F	2	10	small stones (to 7 mm), mostly modern rootlets and charcoal (to 10 mm)	hazel ( <i>Corylus</i> )	No
9398	690	T3 Structure F	Fill of 9399, shallow, rather irregular pit to the N of Structure F	1	4	mostly modern rootlets, one earthworm egg capsule and a few fragments of fine charcoal (to 2 mm)	-	No
9401	694	T3 Structure F	Fill of probable post-pipe 9400 within post-hole 9404	1	8	small stones (to 5 mm), mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
9402	691	T3 Structure F	Fill of possible post-hole 9403 within Structure F	1	14	mostly modern rootlets and a few fragments of charcoal (to 13 mm)	-	No
9435	701	T3 Structure F	Fill of 9434, a large shallow pit to the N of Structure F	2	19	undisaggregated sediment lumps, mostly modern rootlets, one achene of dock ( <i>Rumex</i> ) and one achene of knotweed ( <i>Persicaria</i> ) - both uncharred and modern, and a few fragments of charcoal (to 10 mm)	-	No
9199	580	T3 Structure F/G	Fill of post-hole 9200	1	10	small stones (to 3 mm), mostly modern rootlets, one earthworm egg capsule, one uncharred achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - modern, and a few charcoal fragments (to 10 mm)	-	No

XIV.6j) Structure G – possible Roundhouse

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9061	594	T3 Structure G	Upper fill of pit 9246	1	9	mostly modern rootlets and a few charcoal fragments (to 15 mm)	hazel ( <i>Corylus</i> )	No
9079	560	T3 Structure G	Fill of post-hole 9070, part of a line that crosses W part of Structure G	1	6	a few small stones (to 5 mm), a little coal, mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a few fragments of fine charcoal (to 5 mm)	-	No
9286	593	T3 Structure G	Fill of post-hole 9287, part of a group in the annexe to Structure G	1	9	small stones (to 2 mm), mostly modern rootlets and a few fragments of fine charcoal (to 5 mm)	-	No
9308	599	T3 Structure G	Fill of post-hole 9309, cutting pit 9307	1	6	mostly modern rootlets and a few fragments of fine charcoal (to 5 mm)	-	No
9311	672	T3 Structure G	Fill of post-hole 9312	1	5	a few small stones (to 3 mm), mostly modern rootlets and a little charcoal (to 10 mm)	-	No
9314	677	T3 Structure G	Lower fill of pit 9315	1	5	a few small stones (to 5 mm), mostly modern rootlets and a little fine charcoal (to 5 mm)	-	No
9328	684	T3 Structure G	Fill of pit 9329 in centre of Structure G	1	29	undisaggregated sediment lumps, a few small stones (to 3 mm), mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) – modern and some charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
9330	682	T3 Structure G	Fill of irregular feature 9331 in middle of Structure G	1	5	undisaggregated sediment lumps (to 10 mm), mostly modern rootlets and a few fragments of charcoal (to 15 mm)	-	No
9330	685	T3 Structure G	as above	1	11	a few small stones (to 5 mm), mostly modern rootlets, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and a few charcoal fragments (to 10 mm)	-	No
9334	681	T3 Structure G	Fill of 9335, stake-hole near the central features in Structure G	1	2	small stones (to 4 mm), mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a little fine charcoal (5 mm)	-	No
9343	683	T3 Structure G	Clayey packing material in post-hole 9327 in centre of Structure G	1	5	mostly modern rootlets and a few charcoal fragments (to 10 mm)	-	No
9353	686	T3 Structure G	Fill of penannular ditch 9352	1	11	a few small stones (to 5 mm), mostly modern rootlets and a few charcoal fragments (to 10 mm)	-	No
9370	688	T3 Structure G	Stake-hole adjacent to penannular ditch 9352	1	6	a few small stones (to 5 mm), mostly modern rootlets and charcoal (to 10 mm)	-	No
9406	692	T3 Structure G	Fill of 9391, shallow circular pit to the S of Structure G	1	5	small stones (to 8 mm), mostly modern rootlets and a few fragments of charcoal (to 10 mm)	-	No
9407	693	T3 Structure G	Fill of stone-filled land drain 9408	1	3	mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and a little fine charcoal (to 5 mm)	-	No
9420	698	T3 Structure G	Fill of stake-hole 9421 to the S of Structure G	1	2	small stones (to 3 mm) and mostly modern rootlets	-	No
9428	699	T3 Structure G	Fill of 9429, small post-hole in annexe to Structure G	1	3	small stones (to 5 mm), mostly modern rootlets and a few fine charcoal fragments (to 5 mm)	-	No
9436	700	T3 Structure G	Fill of 9437, post-hole in annexe of Structure G	1	5	small stones (to 2 mm), mostly modern rootlets and a few fragments of fine charcoal (to 2 mm)	-	No



Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9317	718	T3 Structure GN	Fill of pit 9318	1	11	small stones (to 4 mm), mostly modern rootlets, two earthworm egg capsules, one uncharred achene of fumitory ( <i>Fumaria</i> ) - modern, and a few fragments of charcoal (to 10 mm)	-	No
9338	687	T3 Structure GN	Fill of post-hole 9339 to the N of Structure G	1	3	small stones (to 4 mm), mostly modern rootlets and a few fragments of charcoal (to 5 mm)	-	No
9390	673	T3 Structure GN	Fill of groove or gully 9316 to the N of Structure G	1	5	undisaggregated sediment lumps, mostly modern rootlets, five earthworm egg capsules and a few fragments of charcoal (to 5 mm)	-	No

XIV.6k) Roundhouse H

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9161	569	T3 Roundhouse H	Fill of 9162, a curving gully to the SW of Roundhouse H	1	3	a few small stones (to 3 mm), mostly modern rootlets and a little charcoal (to 10 mm)	-	No
9164	555	T3 Roundhouse H	Probably an occupation layer over the interior of Roundhouse H, but truncated in places	3	17	small stones (to 8 mm), mostly modern rootlets, one earthworm egg capsule, 23 seeds of goosefoot ( <i>Chenopodium</i> ), one achene of knotgrass ( <i>Polygonum aviculare</i> L.), one achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) and one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - all uncharred and modern, a few fragments of petrified charcoal (to 10 mm), charcoal (to 15 mm) and two charred cereal grains (poorly preserved, probably wheat - <i>Triticum</i> )	probably hazel (cf. <i>Corylus</i> )	Yes
9165	559	T3 Roundhouse H	Hearth	1	3	small stones (to 3 mm), mostly modern rootlets and charcoal (to 5 mm)	-	No
9167	697	T3 Roundhouse H	Continuation of the 19th century ditch 3700 running through Roundhouse H	1	15	undisaggregated sediment lumps (to 10 mm), mostly modern rootlets, six earthworm egg capsules, one uncharred nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - modern, and charcoal (to 10 mm)	-	No
9174	589	T3 Roundhouse H	Fill of 9175	1	4	small stones (to 5 mm), coal, three earthworm egg capsules, mostly modern rootlets, one uncharred achene of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - modern, and a few charcoal fragments (to 5 mm)	-	No
9177	570	T3 Roundhouse H	Lower fill of linear to the W of Roundhouse H	1	4	small stones (to 10 mm), two earthworm egg capsules and mostly modern rootlets	-	No
9178	588	T3 Roundhouse H	Fill of 9170	1	13	undisaggregated sediment lumps, mostly modern rootlets and a few fragments of charcoal (to 5 mm)	-	No
9182	696	T3 Roundhouse H	Fill of 9163, inner drain of Roundhouse H	4	44	undisaggregated lumps of ash and charcoal, undisaggregated sediment lumps, mostly modern rootlets and a few charcoal fragments (to 25 mm)	hazel ( <i>Corylus</i> )	No
9183	566	T3 Roundhouse H	Upper fill of 9184, a small pit within Roundhouse H	1	10	a few small stones (to 8 mm), undisaggregated lumps of ash and charcoal, mostly modern rootlets, mostly charcoal (to 10 mm) and one charred cereal grain (poorly preserved, unidentifiable)	-	Yes

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
9185	568	T3 Roundhouse H	Fill of 9186, narrow gully within Roundhouse H	1	3	a few small stones (to 10 mm), mostly modern rootlets and charcoal (to 15 mm)	hazel ( <i>Corylus</i> )	No
9259	600	T3 Roundhouse H	Fill of shallow gully 9260	1	8	undisaggregated sediment lumps, mostly modern rootlets, one achene of knotweed family ( <i>Polygonaceae</i> ) and one seed of the pea family ( <i>Fabaceae</i> ) - both uncharred and modern	-	No
9276	608	T3 Roundhouse H	Fill of 9277, a large pit W of Roundhouse H and inside curving gully 9162/9260	1	14	undisaggregated lumps of ash and charcoal, mostly modern rootlets, five uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, charcoal (to 15 mm), one charred seed of dock ( <i>Rumex</i> ), one charred glume base (probably emmer wheat - <i>Triticum dicoccum</i> Schübl.) and three charred cereal grains (very poorly preserved, unidentifiable)	oak ( <i>Quercus</i> )	Yes
9280	613	T3 Roundhouse H	Fill of 9281, possibly the outer gully 9281 for Roundhouse H	1	6	small stones (to 3 mm), mostly modern rootlets, one seed of goosefoot ( <i>Chenopodium</i> ) and one one nut of silver/downy birch ( <i>Betula pendula</i> Roth/ <i>B. pubescens</i> Ehrh.) - both uncharred and modern, and a few charcoal fragments (to 5 mm)	-	No
9282	614	T3 Roundhouse H	Stone spread to the S of Roundhouse H, same as 9279, appeared deliberately deposited	1	6	mostly modern rootlets, one seed of goosefoot ( <i>Chenopodium</i> ) and one achene of knotgrass ( <i>Polygonum aviculare</i> L.) - both uncharred and modern	-	No

Table XIV.7. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from deposits associated with the bead cache from Pit 2104, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
2090	172	Bead cache	Fill of 2091, a well defined flat bottomed pit adjacent to the glass bead collection	1	15	undisaggregated sediment lumps, mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
2098	232	Bead cache	Only fill of 2104, a small hole disturbed by animal burrowing. Contained large numbers of Roman glass beads	2	20	undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule, three seeds of goosefoot ( <i>Chenopodium</i> ) and two fruit stones of blackberry ( <i>Rubus fruticosus</i> L. agg.) - all uncharred, modern, charcoal (to 10 mm), one charred fragment of hazelnut shell and one charred unidentifiable cereal grain (eroded and distorted)	-	Yes
2125	226	Bead cache	Fill of 2124, a shallow pit located near to the collection of glass beads	1	15	few modern rootlets and mostly charcoal (to 10 mm)	-	No
2126	234	Bead cache	Series of three animal burrows in the base of 2104	1	1	undisaggregated sediment lumps and a few fragments of fine charcoal (to 3 mm)	-	No

Table XIV.8. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from Bronze Age features in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1263	39	T1 prehistoric? Pit 1390	Patch of burnt natural	1	43	charcoal (to 10 mm) and two charred fragments of hazelnut shell	hazel ( <i>Corylus</i> )	Yes
1391	70	T1 prehistoric? Pit 1390	Primary fill of deep pit 1390	1	22	charcoal (to 13 mm)	hazel ( <i>Corylus</i> ), oak ( <i>Quercus</i> )	No

Table XIV.9. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Biological remains recovered from samples from all other features in context number order, with notes on the presence of material suitable for submission for radiocarbon dating.

Key: see Table 1.

Cont	Sam	Subgroup	Context description	Bags	Wt	Notes of biological remains	Charcoal Ids	AMS
1524	103	T1 prehistoric?	Very unusual material which varies from almost white to vivid pink. Mottled throughout 2098, but mostly concentrated slightly E of the centre of the fill.	1	5	small stones (to 5 mm), mostly modern rootlets, three uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 10 mm)	-	No
1557	104	T1 prehistoric?	Fill of 1523	1	4	small stones (to 5 mm), mostly modern rootlets, one uncharred seed of goosefoot ( <i>Chenopodium</i> ) - modern, and charcoal (to 15 mm)	-	No
1568	105	T1 prehistoric?	Fill of 1567, with the possible remains of packing stones	1	5	a few modern rootlets, one earthworm egg capsule, two uncharred seeds of goosefoot ( <i>Chenopodium</i> ) - modern, and mostly charcoal (to 10 mm)	-	No
1821	214	T1 animal/tree hole	Fill of burnt tree hollow 1822	1	360	mostly charcoal 'slivers' (to 15 mm)	oak ( <i>Quercus</i> )	No
2023	140	T2 animal/tree hole	Fill of 2024	1	104	a few modern rootlets, one seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal 'slivers'	oak ( <i>Quercus</i> ) – dominant, hazel ( <i>Corylus</i> )	No
2038	144	T2 animal/tree hole	Fill of animal burrow 2040	1	2	undisaggregated sediment lumps and a few fragments of charcoal (to 5 mm)	-	No
2038	144	T2 animal/tree hole	as above	1	19	undisaggregated sediment lumps, mostly modern rootlets and charcoal (to 15 mm)	-	No
3117	240	T3 animal/tree hole	Fill of 3118	1	48	mostly charcoal 'slivers' (to 20 mm)	oak ( <i>Quercus</i> )	No
3545	418	T3 ditches	Fill of 3544	1	8	undisaggregated sediment lumps, mostly modern rootlets, one earthworm egg capsule, one uncharred achene of knotgrass ( <i>Polygonum aviculare</i> L.) - modern, and charcoal (to 10 mm)	-	No
3676	449	T3 ditches	Fill of 3677, a shallow gully possibly related to the Roundhouse settlement	1	67	mostly modern rootlets, four earthworm egg capsules, 16 seeds of goosefoot ( <i>Chenopodium</i> ) and one achene of fumitory ( <i>Fumaria</i> ) - all uncharred and modern, and charcoal (to 10 mm)	-	No

4108	554		?context 6020	1	18	charcoal (to 25 mm)	hazel ( <i>Corylus</i> )	No
4223	366	T4 prehistoric?	Lower fill of 4182, probably natural erosion deposit	1	8	undisaggregated sediment lumps, mostly modern rootlets, charcoal (to 5 mm), one charred achene of stinking chamomile ( <i>Anthemis cotula</i> L.), one charred grain of oat ( <i>Avena</i> ) and four charred unidentifiable cereal grains (eroded and distorted)	-	Yes
9447	702	T3 prehistoric?	Fill of 9448, a shallow circular pit	1	12	mostly undisaggregated sediment lumps, modern rootlets, four earthworm egg capsules, one fruit stone of blackberry ( <i>Rubus fruticosus</i> L. agg.) and two achenes of meadow/creeping buttercup ( <i>Ranunculus acris</i> L./ <i>R. repens</i> L.) - all uncharred and modern, and one charred fragment of hazelnut shell	-	Yes
9450	703	T3 prehistoric?	Charcoal rich fill of 9449	1	3	mostly undisaggregated sediment lumps and charcoal (to 5 mm)	-	No
9452	704	T3 prehistoric?	Fill of 9451, a root-hole in area of pit 9448	1	3	undisaggregated sediment lumps, a few modern rootlets, fine charcoal (to 3 mm) and five charred fragments of hazelnut shell	-	Yes
9454	705	T3 prehistoric?	Fill of 9453, a root-hole in area of pit 9448	1	4	undisaggregated sediment lumps, modern rootlets, one uncharred achene of fumitory ( <i>Fumaria</i> ) - modern, a few fragments of fine charcoal (to 3 mm) and two charred fragments of hazelnut shell	-	Yes
9456	706	T3 prehistoric?	Fill of 9455, a root-hole in area of pit 9448	1	6	undisaggregated sediment lumps, a few modern rootlets and fine charcoal (to 3 mm)	-	No

Table XIV.10. Parc Bryn Cegin, Llandygai, Bangor, North Wales: Vertebrate remains from all periods in context number order.

Key: U/S = unstratified; SF no. = small find number; Frags = total number of fragments.

Context	Sample	SF no.	Subgroup	Context description	Frag	Wt (g)	Notes
1051	726	1053	Pit Group I	Fill of small shallow pit 1052	7	<1g	bones have rounded edges, fresh breakage, chalky burnt bone fragments (to 11 mm)
1327	737	-	Early Neolithic building	Fill of pit 1328 close to line of east gable end of the Early Neolithic building	55	1g	very tiny fragments (to 7 mm), unidentifiable
1327	743	-	Early Neolithic building	as above	44	3	small burnt fragments (to 15 mm), most very small, all unidentified, rather battered, some rounded
1327	746	59	Early Neolithic building	as above	7	<1g	7 fragments (4 mm or less) and a quantity of tiny tiny traces of burnt bone
1327	746	-	Early Neolithic building	as above	~250	52g	a collection of burnt bone, many small fragments (less than 10 mm), few larger ones (to 32 mm). Material difficult to identify but does not have the appearance of human bone. There are also a number of fragments that resemble horncore but this could be caprovind or cattle. The rest of the assemblage cannot be identified.
1340	734	1054	Early Neolithic building	Fill of pit 1339 inside the eastern end of the Neolithic building	1	<1g	1 fragment of burnt bone, unidentifiable

Context	Sample	SF no.	Subgroup	Context description	Frag	Wt (g)	Notes
1389	751	-	Early Neolithic building	fill of posthole 1406	18	1g	small (to 8 mm), unidentified burnt fragments, rounded edges. NB. also labelled as Context 2098, Sample 720, Small find no. 246
1392	752	1315	Early Neolithic building	Fill of pit 1393 on inner gable end of building	1	<1g	1 tiny fragment of burnt bone, approximately 5 mm in maximum dimension, not identifiable
1392	753	1327	Early Neolithic building	as above	3	<1g	3 tiny fragments of burnt bone, all less than 5 mm, not identifiable
1513	733	112	Early Neolithic building	Within post-hole 1532	1	1g	1 distal humerus fragment of medium-sized mammal, sheep/goat/roe deer
2098	232	-	Bead cache	Fill of pit 2104	2	1	fragile fragments of burnt bone, including ?medium-sized mammal rib fragment
3112	730	302	Pit Group VII	Fill of pit 3111	1	<1g	1 fragile fragment of burnt bone, approximately 8 mm in maximum dimension. Not identifiable, chalky, with rounded edges
3137	729	1055	Pit Group VII	Upper fill of pit 3139	1	<1g	1 fragment of burnt bone
3142	742	-	Pit Group VII	Lower fill of pit 3139	22	<1g	22 small fragments of burnt bone (2 to 8 mm in size), not identifiable, fresh breakage damage and rounded edges
3154	728	1056	Pit Group VII	Fill of pit 3155	7	<1g	tiny fragments of burnt bone (to 10 mm), quite soft with rather rounded edges. Possible medium-sized mammal mandible and shaft fragments
3192	749	-	Pit Group VII	Fill of burnt patch	5	<1g	5 tiny (less than 3 mm) fragments of burnt bone
3270	750	-	T3 Roundhouse A	Fill of middle ring ditch 3058	1	<1g	1 medium-sized mammal shaft fragment
3490	727	612	T3 Roundhouse A	Fill of 3491, the large pit to the east of Roundhouse A	1	2	1 mm shaft fragment, 40 mm
3495	725	605	T3 Roundhouse A	Fill of 3496, part of the inner drainage gully of Roundhouse A	3	<1g	3 fragments of burnt bone, to 10 mm, fresh breakage damage, eroded surfaces, soft and chalky
3495	741	-	T3 Roundhouse A	Fill of 3496, part of the inner drainage gully of Roundhouse A	1	<1g	1 small fragment (~5 mm) of burnt bone, unidentifiable, rather eroded fragment
4025	724	1057	Pit Group II	Fill of pit 4024	3	<1g	3 small (less than 5 mm) fragments of burnt bone, fresh breakage, unidentifiable
4108	722	553	Pit Group IV	Lower fill of pit 4109	37	<1g	bluish tinge on a couple of frags, quite angular edges and fresh breakage damage
4120	732	1058	T4 animal/tree hole fill ?	Animal/tree hole fill	1	<1g	1 fragment of burnt bone, rounded, unidentifiable, c. 5 mm
4147	740	-	Pit Group V	Fill of pit with late Neolithic pottery	2	<1g	2 very tiny burnt fragments (<5 mm)
4147	747	-	Pit Group V	as above	6	1g	6 small (to 8 mm) fragments of burnt bone, rounded edges, unidentifiable

Context	Sample	SF no.	Subgroup	Context description	Frag	Wt (g)	Notes
4149	723	1059	Pit Group V	Fill of pit with late Neolithic pottery, same pit as 4147	4	<1g	4 very small fragments of burnt bone, unidentifiable, rounded edges
4149	748	-	Pit Group V	as above	2	<1g	2 crumbles of burnt bone
4282	739	-	T4 Roundhouse E	Fill of gully	2	<1g	2 small (to 7 mm) fragments of burnt bone, unidentifiable and rounded edges
4307	738	-	T4 Roundhouse E	Hearth layer	14	<1g	tiny fragments of burnt bone (5 mm or less in maximum size), rather rounded edges
9446	721	1060	T3 prehistoric?	Fill of pit 9445	7	1	7 rather poorly preserved fragments (to 15 mm), damaged by fresh breakage, with some edges rounded, bones rather chalky. 1 medium-sized mammal shaft fragment
9447	719	1061	T3 prehistoric?	Fill of shallow circular pit 9448	9	1g	burnt bone fragments, with sharp edges and fresh breakage damage, not identifiable
9447	744	-	T3 prehistoric?	as above	5	<1g	small (to 6 mm), unidentified burnt fragments
9447	754	1326	T3 prehistoric?	as above	5	<1g	very tiny fragments of burnt bone, all less than 5 mm, not identifiable
U/S	731	681	T2 burnt mounds	Tooth found near burnt mound 2031	1	12	upper horse tooth, rather battered and slightly damaged by fresh breakage



Figure XIV.1. Parc Bryn Cegin, Llandygai, Bangor, Gwynedd, North Wales: relative proportions of charred cereals in the larger grain assemblages recovered from deposits associated with Roundhouse A (including those from the Corn Drier 3671).

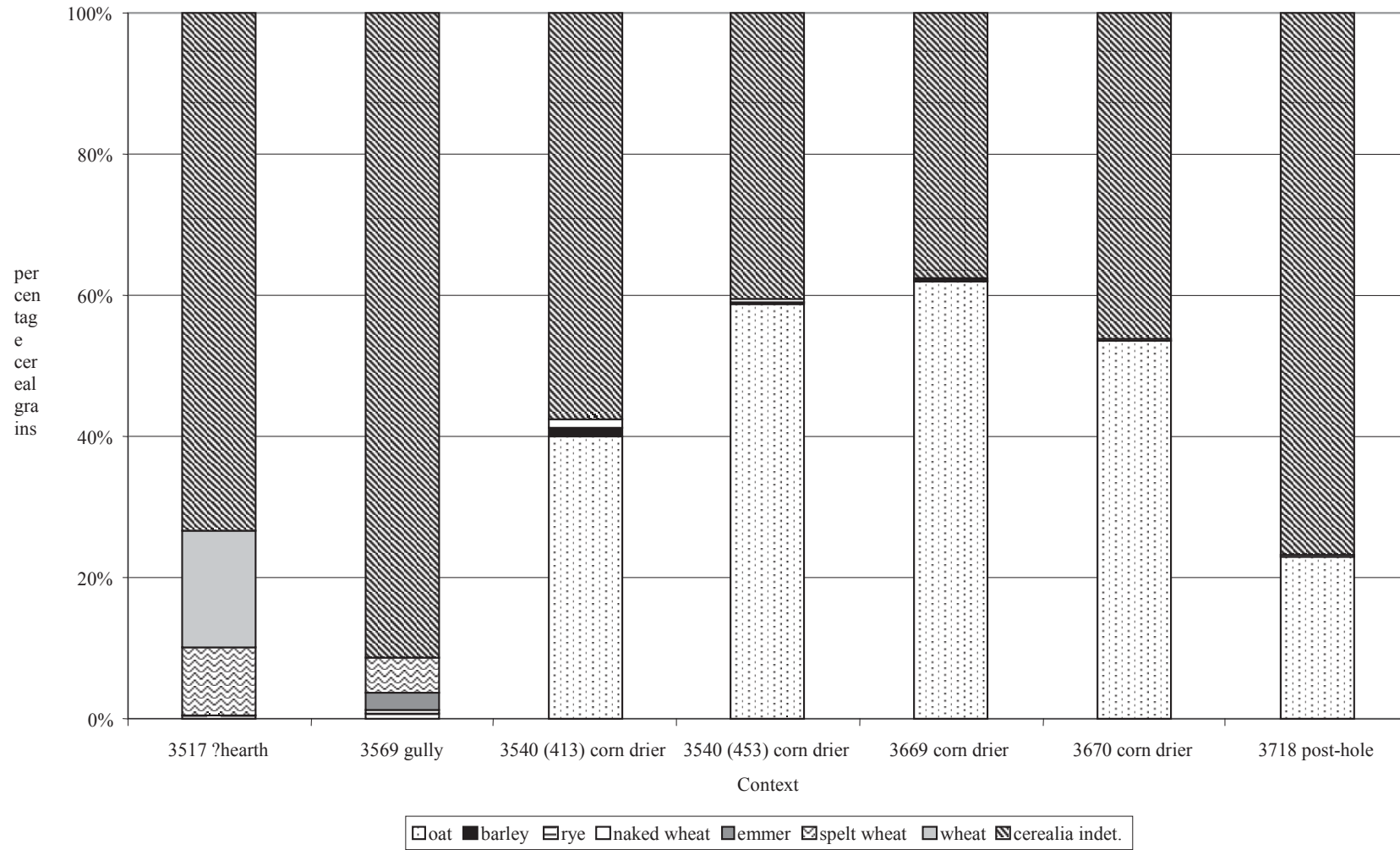
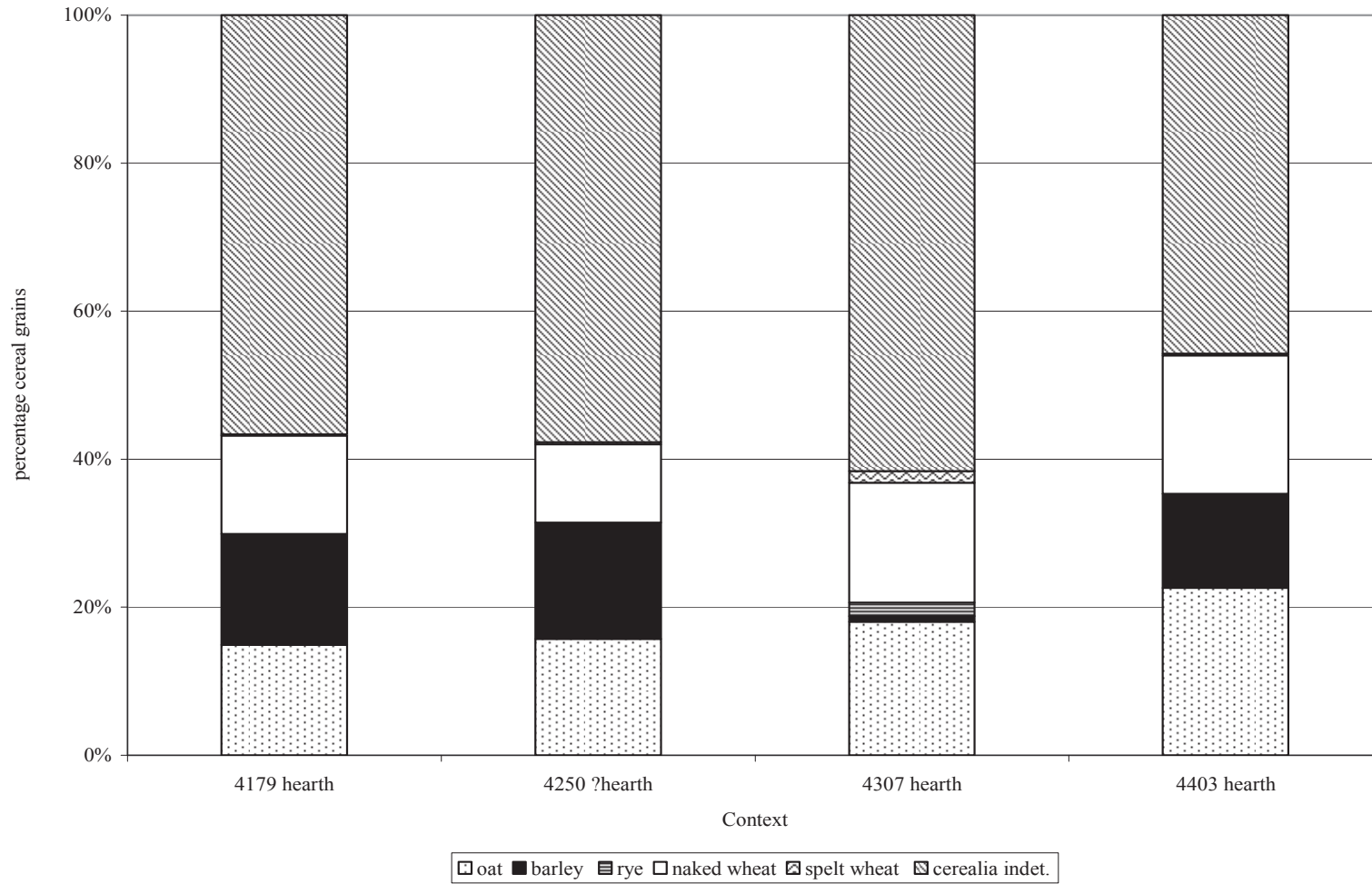


Figure XIV.2. Parc Bryn Cegin, Llandygai, Bangor, Gwynedd, North Wales: relative proportions of charred cereals in the larger grain assemblages recovered from deposits associated with Roundhouse E.



## APPENDIX XV: PEDOLOGY

David Jenkins

Six monoliths were collected during excavation with the aim of answering specific questions over the mode of origin of particular horizons. Further to relevant field observations, it is possible that features within the sample microfabric could provide this information through micromorphological analysis.

The microfabric will have borne an imprint of all events since deposition of the original material, through the period of archaeological interest and finally of subsequent pedogenic processes up to the development of the present day soil profile. Whether those microfabrics that are of archaeological interest survive depends on their nature and on the intensity of the pedogenic processes subsequently involved. Some of the latter can be destructive so that the information of archaeological interest is obliterated from the micromorphological record. In this instance information is sought about the nature of the original material and its mode of deposition, such as sedimentation, colluviation, random infill by man? However, relic stratification and evidence of random deposition could have been obliterated by processes such as bioturbation (earthworms), structural development (granulation) and agricultural practices (ploughing).

The six monoliths have been cleaned and photographed, and their colour (air-dry - Munsell), structure, horizonation, texture, *etc.* recorded (Hodgson 1976) and interpreted in terms of the soil classification used by Ball (1963). These observations correspond closely to the field records although terminology may differ, and the term "clayey silt" is used descriptively here rather than the official designation of "silt loam" (Hodgson 1976). Brief notes on the monoliths are given below together with the photographic record (Figure XV.1), and recommendations made as to further possible studies

- 185:** Brown/dark brown (10YR4/3) loamy silt with fine angular and rounded small siltstones; strongly developed small sub-rounded granular structure  
*merging boundary*  
Greyish brown (10YR5/2) loamy silt + charcoal and darker stained surfaces  
*merging boundary*  
Brown (10YR5/3) loamy silt with small siltstone and silicic igneous stones; moderately developed fine granular structure

This corresponds to Bw horizons of a Brown Earth of the *Arfon Series*. It has a strong granular structural development, which is likely to have obliterated any original structure.

- 186:** Grey brown (10YR ) loamy silt with weak fine sub-rounded granular structure  
*strong structural break*  
Pale grey (10YR6/1-2) with occasional fine orange brown (5YR5/8-4/6) mottles; weakly developed fine angular granular structure and fine pinhole voids  
*merging boundary*  
pale grey (10YR6/1) silty clay with rare mottles, massive with a weak prismatic structure and fine pinhole voids with clay linings

This section comprises a strongly gleyed profile (Bw/Bg1/Bg2) which, combined with 185 above would then fit into the "Brown Earth with gleying" *Sannan Series*. It is possible that any original sedimentation structure might be preserved within the basal Bg2 horizon. No "burnt stone" was seen, but strongly Fe-stained orange stones are present. Both 185 and 186 were taken through the fills of pit 1619. The column was taken in two parts to avoid stones in the fill. Pit 1619 was dated to the Early Neolithic, contemporary with the rectangular timber structure, and contained a broken stone axe and other artefacts within a charcoal-rich layer within its fill.

- 339:** Yellowish brown (10YR5/4) clayey silt with small angular siltstones; strongly developed sub-rounded granular structure  
*major structural break* ("plough layer"?)  
Thin slightly darker layer – earlier ploughed-in Ah (organic surface) layer?  
Paler brown (10YR6/4) clayey silt with moderately developed fine granular structure with weak development of large subangular peds.

Light brownish grey (10YR6/2) clayey silt; weak granular tending to massive structure

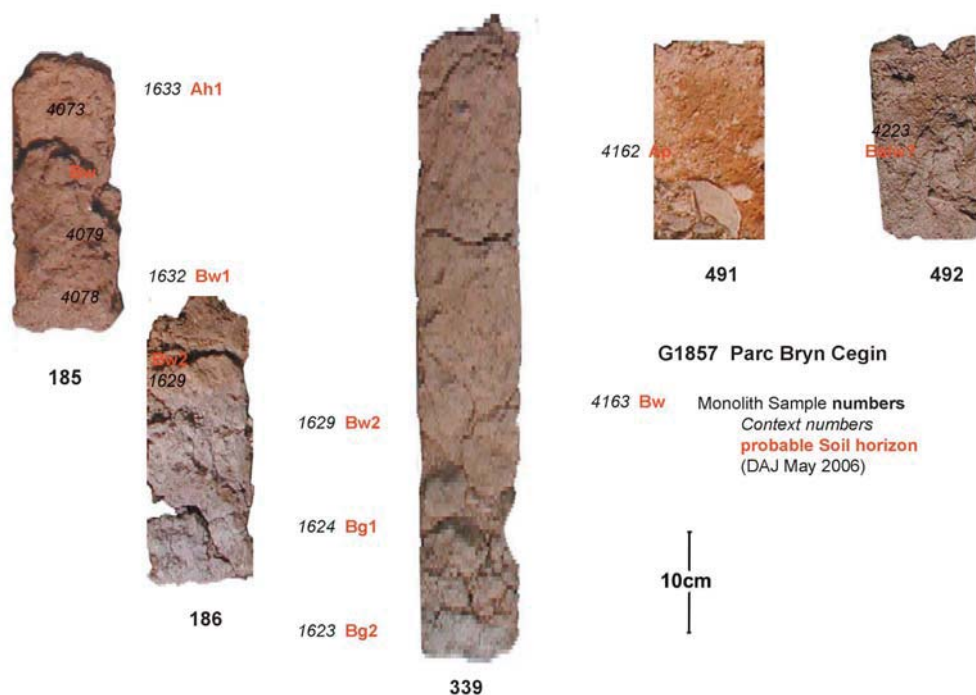
This corresponds to a “Brown Earth with gleying at depth” (*Sannan Series*) with the development of a plough layer (Ap) due to agricultural management. It is unlikely that original structures will have survived except in the basal Bg. This column was taken through the fill of a glacial hollow (4167) to investigate the colluvial deposits.

- 491:** Light brown to reddish yellow (7.5YR6/4-5) sandy clay with occasional angular and rounded fine gravel and small charcoal fragments. A distinctive fine pellety structure is weakly developed. A lens of coarser angular siltstone gravel occurs at the base.

The colour and fabric suggest that this material could be the result of weak podzolisation and derive from a profile tending to a “brown podzolic soil” (*Manod Series* – Bs horizon); this could be confirmed by chemical tests. It is unlikely that any depositional fabric would survive this process, although it might persist if deposition post-dated podzolisation. This column was taken through a layer (4223) identified as a possible soil horizon in the base of what appeared to be a deep glacial hollow (4182).

- 492:** Brown to pale brown (10YR5/3-6/3), verging to light yellowish brown (10YR6/4) in the upper part, clayey silt with common rounded and angular fine siltstone gravel, increasing in size with depth. Medium-strong loose subangular granular structure with weak sub-vertical peds.

No distinct horization, as in the field description, is evident and, since the upper half of the monolith was lost in collecting, the sample would probably correspond to the Bw horizon of a “brown earth” (*Arfon Series*). No relict stratification is evident to suggest it is part of a “deep colluvial layer”, nor would this be likely to be preserved in the microfabric. This column was taken through deposits 4073 and 7079 in a natural hollow to study the colluvial processes.



### **References**

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### **Conclusions**

Jane Kenney

The two columns collected to study the colluvial processes on site (339 and 492) proved to have insufficient stratification surviving and micromorphological analysis would not have been productive. Layer 4223 did appear to be a soil horizon and further work could clarify its origin. However, the feature in which it was deposited appeared to be formed naturally, probably by peri-glacial action and it was considered that further study of this deposit was more likely to be of geological rather than directly archaeological interest and could not be justified within the present project. Column 185/186 was taken to determine how pit 1619 had been infilled and whether this gave any indication of its use. The fill had been considerably altered by subsequent soil formation processes and little of the original structure was likely to have survived. No evidence of the pit's function was identified and it was considered that micromorphological study would be unlikely to reveal more significant information. Monoliths 339 and 492 have been discarded as having no significant information value, but monoliths 185/186 and 491 will be stored with the other artefacts to allow the possibility of future analysis.

## APPENDIX XVI: RADIOCARBON DATES

P Marshall<sup>1</sup>, J Kenney<sup>2</sup>, P M Grootes<sup>3</sup>, A Hogg<sup>4</sup> and C Prior<sup>5</sup>

### Introduction

One hundred and 16 radiocarbon age determinations have been obtained on samples of carbonised wood, charred plant remains and a single charred residue on the interior of a pottery sherd from Parc Bryn Cegin.

### Methods

The 33 samples submitted to the Leibniz Labor für Altersbestimmung und Isopenforschung, Christian-Albrechts-Universität, Kiel, Germany (producing 35 results) were processed according to the methods outlined in Grootes *et al* (2004) and measured by AMS according to Nadeau *et al* (1997)

The 53 samples submitted to the Rafter Radiocarbon Laboratory (Institute of Geological and Nuclear Sciences), New Zealand were processed according to the methods outlined in Bevan-Athfield and Sparks (2001) and measured by AMS according to Zondervan and Sparks (1997)

Twenty eight samples were submitted to The University of Waikato Radiocarbon Dating Laboratory, New Zealand. The samples were converted to CO<sub>2</sub> by oxidation at 800°C using CuO. The CO<sub>2</sub> was then purified in the presence of silver wire to absorb any SO<sub>x</sub> and NO<sub>x</sub> that is produced. The CO<sub>2</sub> was reduced to graphite with Zn at 600°C using an iron catalyst. Target preparation and analysis of the graphite was undertaken at the Rafter Radiocarbon Dating Laboratory according to Zondervan and Sparks (1997).

All three laboratories maintain continual programmes of quality assurance procedures, in addition to participation in international inter-comparisons (Scott 2003) which indicate no laboratory offsets and demonstrate the validity of the precision quoted. Two samples (KIA-30446 and KIA-30451) were particularly small and the humic acid fractions were dated as well as the alkali residues to provide additional information. The humic acid fractions of two other samples (KIA-30436 and KIA-30453) were also dated to compare to the dates on the alkali residues. This enabled the reliability of using the humic acid fraction to be tested. Sample KIA-30453 showed slight indications of contamination in the humic acid fraction so the dates relying on these measurements may be slightly too young, but generally agreement was good.

### Results

The radiocarbon results are given in **Table XVI.1**, and are quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). They are conventional radiocarbon ages (Stuiver and Polach 1977).

### Calibration

The calibrations of the results, relating the radiocarbon measurements directly to calendar dates, are given in **Table XVI.1** and in **Figures XVI.3, 8, 13, 15-16, 19-20 and 23**. All have been calculated using the calibration curve of Reimer *et al* (2004) and the computer program OxCal (v3.10) (Bronk Ramsey 1995; 1998, 2001). The calibrated date ranges cited in the text are those for 95% confidence. They are quoted in the form recommended by Mook (1986), with the end points rounded outwards to 10 years if the error term is greater than or equal to 25 radiocarbon years, or to 5 years if it is less. The ranges quoted in italics are *posterior density estimates* derived from mathematical modelling of archaeological problems (see below). The ranges in plain type in Table 1 have been calculated according to the maximum intercept method (Stuiver and Reimer 1986). All other ranges are derived from the probability method (Stuiver and Reimer 1993).

### Methodological Approach

A Bayesian approach has been adopted for the interpretation of the chronology from this site (Buck *et al* 1996). Although the simple calibrated dates are accurate estimates of the dates of the samples, this is usually not what archaeologists really wish to know. It is the dates of the archaeological events, which are represented by those samples, which are of interest. In the case of Parc Bryn Cegin, it is the chronology of the use of the early Neolithic building, burnt mounds, etc that is under consideration, not the calibrated dates of the individual samples (Bayliss *et al*, 2007). The dates of this activity can be

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estimated not only using the absolute dating information from the radiocarbon measurements on the samples, but also by using the stratigraphic relationships between samples.

Fortunately, methodology is now available which allows the combination of these different types of information explicitly, to produce realistic estimates of the dates of archaeological interest. It should be emphasised that the *posterior density estimates* produced by this modelling are not absolute. They are interpretative *estimates*, which can and will change as further data become available and as other researchers choose to model the existing data from different perspectives.

The technique used is a form of Markov Chain Monte Carlo sampling, and has been applied using the program OxCal v3.10 (<http://www.rlaha.ox.ac.uk/>), which uses a mixture of the Metropolis-Hastings algorithm and the more specific Gibbs sampler (Gilks *et al* 1996; Gelfand and Smith 1990). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001) and fully worked examples are given in the series of papers by Buck *et al* (1991; 1992; 1994a; 1994b).

The algorithm used in the models described below can be derived from the structures shown in **Figures XVI.4, 14, 22, 24 and 26**.

### **Objectives and sampling strategy**

The radiocarbon programme was designed to achieve the following objectives:

1. To provide a precise date for the early Neolithic building.
2. To provide a precise date for the nationally important assemblage of ceramics contained within the later Neolithic pit groups.
3. To investigate chronological differences between the groups of burnt mounds.
4. To provide a precise date for the earth ovens.
5. To provide a precise date for the use of the ring grooved roundhouse (roundhouse E) and the associated metalworking activity.
6. To understand the chronological relationship of structures F and G and the clay-walled roundhouse settlement.
7. To date and therefore phase isolated features.

In order to implement a Bayesian approach a rigorous procedure for extracting the necessary information to build chronological models from archaeological sites has been developed (Bayliss and Ramsey, 2004; **Fig XVI.1**). This procedure was used to underpin all stages of the radiocarbon dating programme for Parc Bryn Cegin.

The first stage in sample selection was to identify short-lived material, which was demonstrably not residual in the context from which it was recovered. The taphonomic relationship between a sample and its context is the most hazardous link in this process, since the mechanisms by which a sample came to be in its context are a matter of interpretative decision rather than certain knowledge. All samples consisted of single entities (Ashmore 1999). Material was selected only where there was evidence that a sample had been put fresh into its context. The main category of material, which met these taphonomic criteria was;

- Charcoal from short-lived taxa, or of charred, short-lived plant macrofossils (seeds or nutshell) - from contexts in which it seemed to have been freshly deposited, eg hearths, ovens, industrial features.

Other samples with a less certain taphonomic origin submitted included:

- Charcoal from the fill of post-holes; interpreted as relating to the use of structures rather than its construction, as suggested by experimental archaeology (Reynolds 1995), and from the primary fill of pits. Where possible duplicate samples from these contexts were submitted to test the assumption that the material was of the same actual age.
- A single charred residue adhering to the inside of ceramic sherd. The sherd selected was large and unabraded suggesting that the residue/sherd had not been exposed to weathering for a long period of time.

Once suitable samples had been identified a models were devised to try and answer the objectives outlined above, which incorporated the archaeological information along with simulated radiocarbon results. The radiocarbon results were simulated using the R\_Simulate function in OxCal, with errors based on the material to be analysed and the type of measurement required (eg single run AMS). This was used to determine the number of samples that should be submitted in the dating programme (for example see **Fig XVI.2**).

### The samples, sequences and results

The following section concentrates on describing the archaeological evidence, which has been incorporated into the chronological models, explaining the reasoning behind the interpretative choices made in producing the models presented. These archaeological decisions fundamentally underpin the choice of statistical model.

#### Early Neolithic Building and pit 1619

Fourteen samples were submitted from the postholes and post-trench that made up the early Neolithic building and a small internal pit (Cut 1339). Where possible duplicate samples were submitted from postholes to test the assumption that the material was of the same actual age. A number of simulations for the early Neolithic house were undertaken (eg **Fig XVI.2**) based on different assumed dates for the house ie 3700, 3600 and 3500 cal BC. These dates were chosen by comparison to other structures of this type especially Llandygai I (Lynch and Musson 2001)

The simulations were also used to determine the optimal number of samples that were needed to achieve estimates of <50 years for the start and end of use of the building, and to compare the effects of different parts of the calibration curve on the likely results given the uncertainty about the actual calendar date of the samples. Following receipt of the first round of six measurements from the building in September 2006, simulations showed that the optimal number of additional samples to be submitted would be eight.

The following duplicate measurements are statistically consistent and could therefore be of the same actual age.

- Cut 1339 (KIA-31081 & KIA-31082;  $T'=3.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 1532 (KIA-30433 & KIA-30434;  $T'=0.4$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 1691 (KIA-30437 & KIA31087;  $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 1406 (KIA-31084 & KIA-31085;  $T'=5.3$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The replicate measurements (alkali and humic fractions) on a single piece of oak charcoal from Cut 1613 (KIA-30436a & KIA-30436b) are statistically consistent ( $T'=0.3$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and thus allow a weighted mean to be calculated ( $5060 \pm 22BP$ ). Given that this sample has only been identified as oak, and could thus suffer from an unknown age at depth offset (Bowman 1990), we have treated it as only providing a *tpq* for its context.

All the measurements from the early Neolithic building, apart from Cut 1613 because of the potential age at depth offset are statistically consistent ( $T'=28.0$ ;  $v=12$ ;  $T'(5\%)=28.0$ ; Ward and Wilson 1978) which might mean that all the dated samples are exactly the same age. However, it is possible that if all the activity that resulted in them took place over a relatively short period of time such a group of results could be produced.

The simple calibrated results are shown in **Figure XVI.3**.

The model shown in **Figure XVI.4**, based on the assumption that the house was in continuous use for a period of time (Buck *et al* 1996), shows good agreement ( $A_{\text{overall}}=94.8\%$ ) between the radiocarbon results and stratigraphy (in this case the hypothesis that all the measurements come from a single phase of activity).

The model provides estimates for the start of the use of the building of 3800-3670 cal BC (95% probability; Boundary start; **Fig XVI.4**) and probably 3760-3700 cal BC (68% probability) and the end of use of 3690-3610 cal BC (95% probability; end) and probably 3670-3620 cal BC (68% probability; Boundary end; **Fig XVI.4**). The span of use of the building is estimated at 10-140 years (95% probability) and probably 40-110 years (68% probability) (**Figure XVI.5**). Given the shape of the probability distributions for the start, end and use of the building (see **Figs XVI.5- 6**), they all have pronounced tails, we as stated above believe the 68% probabilities given are probably the best estimates for the dates/duration of these events.

Two samples (KIA-31088 & KIA-31089), from a large external pit (containing a broken stone axe; Cut 1619) east of the building are not statistically consistent ( $T'=47.3$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). These results have not been included in the model described above as the objective was to determine whether Pit 1619 was contemporary with the building or not. Thus although on the basis of the two measurements the pit would not seem to be contemporary with the building, it does contain material (ie KIA-31089) that could be the same date and thus originate from the use of the building. Given the statistically inconsistent results KIA-31088 (3520-3350 cal BC) at present provides the best estimate as a *tpq* for the date of the pit. However, the possibility does exist that the pit is actually contemporary with the building and that KIA-31088 represents intrusive material. The only way to clarify this question would be to submit more material from the feature for dating.

### *The Llandegai early Neolithic buildings*

The radiocarbon results from House B1 excavated at Llandygai (Lynch and Musson 2001) are given in **Table XVI.2**. As three of the measurements were made on bulked oak charcoal, that may have an unknown age at death, they only provide a *tpq*'s for their contexts (postholes). The single AMS measurement (GrA-20012; 4860±50 BP) thus probably provides the best estimate for the date of the building. **Figure XVI.7** shows the dates of House B1 together with the estimated start and end dates for the building from Parc Bryn Cegin. Given the lack of secure dating for House B1 it is at present impossible to say whether they are contemporary or not.

### *Late Neolithic pit groups*

Seventeen samples were submitted from the several groups of pits that made up the various late Neolithic pit groups. The simple calibrated results are shown in **Figure XVI.8**.

Two measurements (NZA-26671 & NZA-26672) on charred hazelnut fragments from Cut 1052 (Pit group I), associated with a large quantity of Mortlake Ware pottery (belonging to a single bowl), are statistically consistent ( $T'=2.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and could therefore be of the same age.

The charred organic residue adhering to the interior of a sherd of Peterborough (Fengate) Ware (NZA-26679), from Pit Group V provides a direct date for the last use of the vessel. It does not therefore suffer from the problems often inherent in dating ceramics when associated material, most commonly charcoal is used (Nakamura *et al* 2001)

The two measurements (NZA-26680 & NZA-26681) on hazelnut shells from Cut 6041 (Pit group VI), containing three different (?Grooved Ware) pots are not statistically consistent ( $T'=193.6$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and the pit clearly contains material of different ages. Therefore the best estimate for the date of the pit is provided by the youngest date (NZA-26681) which gives a *tpq* of 2580-2460 cal BC.

The two measurements (NZA-26687 & NZA-26688) on hazelnut shells from Cut 6072 (Pit group VI), associated with pieces of a single Peterborough (Fengate) Ware vessel, are statistically consistent ( $T'=1.4$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and could be of the same age.

The two measurements (NZA-26693 & NZA-26694) on hazelnut shells from Cut 1553 (Pit group VII), associated with, perhaps 6 different Grooved Ware pots, none of which are complete but present in quite large pieces are statistically consistent ( $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The two measurements (NZA-26689 & KIA-30440) on material from Cut 3146 (Pit group VII), associated with early Neolithic ceramics are statistically consistent ( $T'=1.9$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

Duplicate samples were also submitted from a number of pits without diagnostic material culture. The measurements from Cut 3155 (Pit group VII) are not statistically consistent ( $T'=4.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and the pit clearly contains material of different ages. Therefore the best estimate for the date of the pit is provided by the youngest date (KIA-30442) which gives a *tpq* of 1750-1610 cal BC.

The two measurements (NZA-26682 & NZA-26690) on material from Cut 3139 (Pit group VII) are statistically consistent ( $T'=3.4$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The two measurements (NZA-26691 & NZA-26692) on material from Cut 1309 (Pit group VIII) are statistically consistent ( $T'=0.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

All four measurements from Cut's 1309 and 1553 (Pit group VIII) are statistically consistent ( $T'=2.5$ ;  $v=3$ ;  $T'(5\%)=7.8$ ; Ward and Wilson 1978) and could therefore be of the same actual age. This suggests that infilling of pits both with and without ceramics was taking place at the same time.

All five measurements associated with Peterborough Ware, both Mortlake and Fengate Ware (**Fig XVI.9**) are statistically consistent ( $T'=4.4$ ;  $v=4$ ;  $T'(5\%)=9.5$ ; Ward and Wilson 1978) and could therefore be of the same actual age. This might suggest that a typological succession as postulated by Smith (1956; 1974), for Peterborough Ware from Ebbsfleet through Mortlake to Fengate is not apparent. However, as these results, and more generally those obtained for Peterborough Ware all fall on a plateau in the calibration curve from *c* 3300-2900 cal BC (see **Fig XVI.10**), they might suggest a degree of contemporaneity that is not actually real.

Modelling these results as part of a simple continuous phase of activity, together with other radiocarbon dates associated with Peterborough Ware from Wales and The Marches (Gibson and Kinnes 1997, Healey pers comm.) suggests that Peterborough Ware began to be used in this region in 3400–3100 cal BC (95% probability; **Fig XVI.11: Boundary start**), and probably in 3370–3240 cal BC (68% probability). The latest deposits of this style occurred in 3110-2890 cal BC (73% probability; **Fig XVI.11 boundary end**), and probably in 3090–2950 cal BC (60% probability). It should be noted

that the results from Cefn Bryn (Ward 1987; Gibson 1995) have not been included in this model. Some at least of these appear to be anomalously late (Birm-1238 and Birm-1236, with probabilities of 0.3% and 0.1% respectively of lying within this phase of deposition). The samples in question came from beneath a Bronze Age cairn, and it is possible that later material was incorporated into these bulk samples.

Further analysis (see **Fig XVI.12**) shows that there is only a 5% probability that the early Neolithic building was in use when Cut 3146 (pit group VII) was infilled.

### ***Burnt Mounds***

Thirty samples were submitted from 11 of the 16 burnt mounds found scattered across the site. The simple calibrated results are shown in **Figure XVI.13**.

The three measurements (KIA-30443, KIA-30444 & NZA-26765) from Mound 1097 (Cut 1154) are not statistically consistent ( $T'=474.0$ ;  $v=2$ ;  $T'(5\%)=6.0$ ; Ward and Wilson 1978). However, if KIA-30443 is excluded, the other two measurements are statistically consistent ( $T'=1.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). This suggests that the charred hazelnut (KIA-30443) is residual.

The two measurements (NZA-26766 & NZA-26767) from Mound 2031 (Cut 2149) are not statistically consistent ( $T'=6.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). Given that the samples came from the fill of the trough and could therefore be expected to relate to the use of the burnt mound, the fact that the samples are of different ages is not completely unexpected.

The two measurements (NZA-26768 & NZA-26769) from Mound 2167 (Cut 2175) are also not statistically consistent ( $T'=6.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). However, given how material is likely to be incorporated into burnt mound features (see above) this is not surprising.

Nine samples were submitted from four of the features making up Mound 2176. The following duplicate measurements are statistically consistent and could therefore be of the same actual age.

- Cut 2202 (NZA-26773 & NZA-26774;  $T'=3.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 2186 (NZA-26770 & NZA-26771;  $T'=0.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Hearth 2212 (NZA-26775 & NZA-26776;  $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The three measurements from Cut 2197 (KIA-30447, KIA-30448 & NZA-26772) are not statistically consistent ( $T'=45.3$ ;  $v=2$ ;  $T'(5\%)=6.0$ ; Ward and Wilson 1978), and the context clearly contains material of different ages. However, excluding KIA-30448 the remaining two measurements are statistically consistent ( $T'=0.3$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). This suggests that the charred grain (KIA-30448) is intrusive.

Excluding KIA-30448 the remaining eight measurements from Mound 2176 are statistically consistent ( $T'=13.5$ ;  $v=7$ ;  $T'(5\%)=14.1$ ; Ward and Wilson 1978). This might mean that all the dated samples from the burnt mound are exactly the same age. However, it is possible that if all the activity that resulted in them took place over a relatively short period of time such a group of results could be produced.

The model, shown in **Figure XVI.14**, based on the assumption that the burnt mound was in continuous use for a period of time (Buck et al 1996), shows good agreement ( $A_{\text{overall}}=82.5\%$ ) between the radiocarbon results and stratigraphy (in this case the hypothesis that all the measurements come from a single phase of activity).

The model provides estimates for the start of the use of Mound 2176 of 2570-2370 cal BC (95% probability; *Boundary start*; **Fig XVI.14**) and probably 2500-2370 cal BC (68% probability) and the end of use of 2390-2010 cal BC (95% probability; *Boundary end*; **Fig XVI.14**) and probably 2300-2150 cal BC (68% probability).

The following duplicate measurements are statistically consistent and could therefore be of the same actual age.

- Mound 2287, (NZA-26777 & NZA-26818;  $T'=0.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Mound 4199, (NZA-26819 & NZA-26820;  $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Mound 6016, (NZA-26821 & NZA-26823;  $T'=0.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The following duplicate measurements are not statistically consistent and these mounds therefore contain material of different ages.



- Mound 6019, (NZA-26824 & NZA-26825;  $T'=439.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Mound 6094, (KIA-30449 & KIA-30450;  $T'=5.9$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Mound 7039, (NZA-26822 & NZA-26828;  $T'=408.7$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Mound 7035, (KIA-30445 & KIA-30446  $T'=7.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

#### ***Burnt Stone feature 7055***

The three measurements (NZA-26762-26764) from another feature full of burnt stones (7055) are not statistically consistent ( $T'=658.9$ ;  $v=2$ ;  $T'(5\%)=6.0$ ; Ward and Wilson 1978). However, excluding NZA-26763 the two remaining measurements are statistically consistent ( $T'=0.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). This therefore suggests that the unidentified cereal grain (NZA-26763) is intrusive.

**Figure XVI.15** shows the dates for all the “burnt stone” features.

#### ***Earth Ovens***

Fourteen samples were submitted from the seven earth ovens found across the site. The simple calibrated results are shown in **Figure XVI.16**.

The following duplicate measurements are statistically consistent and could therefore be of the same actual age.

- Cut 1072 (NZA-26829 & NZA-26988;  $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 1230 (NZA-26830 & NZA-26831;  $T'=1.7$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 1510 (NZA-26833 & NZA-26834;  $T'=0.3$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 3133 (NZA-26835 & NZA-26989;  $T'=3.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 6033 (NZA-26837 & NZA-26838;  $T'=0.4$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The following duplicate measurements are not statistically consistent and these earth ovens therefore contain material of different ages.

- Cut 1259 (NZA-26839 & NZA-26832;  $T'=255.7$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).
- Cut 3314 (NZA-26836 & NZA-26840;  $T'=11.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

**Figure XVI.17** shows that three of the earth ovens (cuts 1259, 3133 and 6035) could be contemporary with the early Neolithic building.

**Figure XVI.18** shows that earth ovens (cuts 1072, 1230, 1510 and 3314) are contemporary with burnt mound activity, however, given the duration of burnt mound activity this is not unexpected.

#### ***Pit 1390, etc (Fig 19)***

The two measurements (Wk-20061 & Wk-20062) from Pit 1390 are statistically consistent ( $T'=0.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978), as are those (NZA-26830 & NZA-26831) from Cut 1230 ( $T'=1.7$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). All four measurements from these two contexts are statistically consistent ( $T'=2.3$ ;  $v=4$ ;  $T'(5\%)=9.5$ ; Ward and Wilson 1978) and could therefore be of the same actual age. These features are close to pit oven 1230 and the similarity in the dates suggests they may be functionally related.

#### ***Roundhouse E***

Eight samples were submitted from five features in the area of Roundhouse E (**Fig XVI.20**). The two measurements (Wk-20048 & Wk-20049) from Posthole 4277 are statistically consistent ( $T'=0.2$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) and could be of the same actual age. These measurements and that (KIA-30438) from the stony charcoal-rich deposit sealing the four postholes in the middle are also statistically consistent ( $T'=5.0$ ;  $v=2$ ;  $T'(5\%)=6.0$ ; Ward and Wilson 1978). Although a single charred twig fragment from the fill of one of the four large postholes has given an earlier date (KIA-30439), plotting the four results on the calibration curve (**Fig XVI.21**) shows that it is possible that KIA-30439 might only be slightly earlier. It is probably therefore that Roundhouse E dates to the fifth to sixth centuries cal BC

The two deposits (4250 & 4283) with metalworking debris associated with roundhouse E are clearly later in date (see **Fig XVI.20**). The two measurements (Wk-20044 & Wk-20045) from Deposit 4250 are statistically consistent ( $T'=0.9$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978), as are those from

Deposit 4283 (Wk-20046 & Wk-20047;  $T'=0.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). All four measurements from these two deposits are statistically consistent ( $T'=1.5$ ;  $v=3$ ;  $T'(5\%)=7.8$ ; Ward and Wilson 1978) and could therefore be of the same actual age.

The model, shown in **Figure XVI.22**, based on the assumption that metalworking activity took place for continuous period of time (Buck *et al* 1996), shows good agreement ( $A_{\text{overall}}=117.5\%$ ) between the radiocarbon results and stratigraphy (in this case the hypothesis that all the measurements come from a single phase of activity). The model provides estimates for the start of metalworking activity of *cal AD 480-650* (95% probability; *Boundary start*; **Fig XVI.22**) and probably *cal AD 570-640* (68% probability) and the end of activity of *cal AD 600-760* (95% probability; *Boundary end*; **Fig XVI.22**) and probably *cal AD 620-680* (68% probability). The span of use of the dated metalworking activity is estimated at *10-80 years* (95% probability) and probably *10-40 years* (68% probability). However, the small number of dates available is likely to mean that the estimate tends to suggest that activity continues for longer than it really did.

### **Roundhouse settlement (Fig 23)**

The choice of samples for dating from the Roundhouse settlement was severely limited by a shortage of suitable material and secure contexts. Twenty three samples were dated from the area of the settlement but four of these proved to be from later features and did not contribute to dating the settlement itself.

#### *Roundhouse C*

The five measurements from Roundhouse C (Wk-20039-20043) are not statistically consistent ( $T'=78.7$ ;  $v=4$ ;  $T'(5\%)=9.5$ ; Ward and Wilson 1978), however, given the external gully was repeatedly re-cut, implying the structure was in use for a considerable period of time, this is not surprising. The two measurements (Wk-20041 & Wk-20042) from Deposit 3672 are though statistically consistent ( $T'=0.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

Although only a small number of measurements are available from Roundhouse C (this is also the case for Structures F and G and Roundhouse H - see below), this is combination of two factors, firstly the paucity of suitable material for radiocarbon dating, and secondly the relative flat nature of the calibration curve, it was felt worthwhile to attempt modelling of the results. It must though be acknowledged that the number of samples is extremely small and from a limited number of contexts, and therefore does not probably represent material dating from the full use of the structures. The results could therefore be biased. However, given, the need to try and understand whether any chronological or spatial variation in these structures existed we think that this attempt is in the circumstances justifiable.

Deposits 3672 and 3648 are stratigraphically later than pit 3325.

The model, for Roundhouse C shown in **Figure XVI.24**, shows good agreement ( $A_{\text{overall}}=89.3\%$ ) between the radiocarbon results and stratigraphy. It provides estimates for the start of activity of *280 cal BC-cal AD 210* (95% probability; *Boundary start C*) and probably *40 cal BC-cal AD 140* (68% probability) and end of *cal AD 130-540* (95% probability; *Boundary end C*) and probably *cal AD 160-360* (68% probability).

#### *Structure F*

Five samples were submitted for dating from Structure F, all from the fills of postholes. The two measurements (Wk-20052 & Wk-20053) from Posthole 9121 are statistically consistent ( $T'=0.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978), however, those (Wk-20050 & Wk-20051) from Posthole 9092 are not ( $T'=8.5$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The model, for Structure F shown in **Figure XVI.24**, shows good agreement ( $A_{\text{overall}}=94.6\%$ ) between the radiocarbon results and assumption that all the samples come from a single phase of activity. It provides estimates for the start of activity of *470-110 cal BC* (95% probability; *Boundary start F*) and probably *360-120 cal BC* (68% probability) and end of *10 cal BC-cal AD 380* (95% probability; *Boundary end F*) and probably *cal AD 30-200* (68% probability).

#### *Structure G*

The two measurements (Wk-20054 & Wk-20055) from Cut 9246 are statistically consistent ( $T'=1.8$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). Although the replicate measurements (KIA-30453a & KIA-30453b) on an unidentified short lived charred twig from Posthole 9327 are not statistically consistent ( $T'=4.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978), we have taken a weighted mean of the two results ( $1975 \pm 20$  BP).

The model, for Structure G shown in **Figure XVI.24**, shows good agreement ( $A_{\text{overall}}=89.9\%$ ) between the radiocarbon results and stratigraphy. It provides estimates for the start of activity of *450-*



100 cal BC (95% probability; Boundary start G) and probably 330-150 cal BC (68% probability) and end of 10 cal BC-cal AD 310 (95% probability; Boundary end G) and probably cal AD 30-160 (68% probability).

#### Roundhouse H

The two measurements (Wk-20058 & Wk-20059) from Cut 9277 are statistically consistent ( $T'=3.0$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978), while those (Wk-20056 & Wk-20057) from Cut 9184 are not statistically consistent ( $T'=5.4$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978).

The model, for Roundhouse H shown in **Figure XVI.24**, shows good agreement ( $A_{\text{overall}}=95.3\%$ ) between the radiocarbon results and stratigraphy. It provides estimates for the start of activity of 150 cal BC-cal AD 210 (95% probability; Boundary start H) and probably 10 cal BC-cal AD 130 (68% probability) and end of cal AD 130-450 (95% probability; Boundary end H) and probably cal AD 140-300 (68% probability).

**Figure XVI.25** and **Table XVI.3** attempt to estimate the relative order of the start of use of structures within the roundhouse settlement based on the estimated start dates calculated in **Figure XVI.24**. As explained above these estimates are only based on a small number of measurements from each structure and only reflect those samples, dated. Further analysis shows a 25% probability that the order is *start\_G start\_F start\_C start\_H*.

#### Corn drier

Four samples were dated from a group of features one of which (Cut 3671) cut the enclosure ditch to roundhouse A. Feature 3671 was interpreted as a corn drier. The two measurements (Wk-20035 & Wk-20036) from Cut 3671 are statistically consistent ( $T'=0.9$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978) as are those from Posthole 3717 (Wk-20037 & Wk-20038;  $T'=1.1$ ;  $v=1$ ;  $T'(5\%)=3.8$ ; Ward and Wilson 1978). All four measurements are statistically consistent ( $T'=3.5$ ;  $v=3$ ;  $T'(5\%)=7.8$ ; Ward and Wilson 1978) and could therefore be of the same age.

The model, shown in **Figure XVI.26**, based on the assumption that the corn drier was in continuous use period of time (Buck *et al* 1996), shows good agreement ( $A_{\text{overall}}=94.6\%$ ) between the radiocarbon results and stratigraphy (in this case the hypothesis that all the measurements come from a single phase of activity). The model provides estimates for the start of activity of cal AD 880-1160 (95% probability; Boundary start; **Fig XVI.26**) and probably cal AD 1000-1130 (68% probability) and the end of activity of cal AD 1040-1350 (95% probability; Boundary end; **Fig XVI.26**) and probably cal AD 1080-1240 (68% probability). The span of use of the dated corn drier activity is estimated at 0-160 years (95% probability) and probably 0-90 years (68% probability). However, the small number of dates available is likely to mean that the estimate tends to suggest that activity continues for longer than it really did.

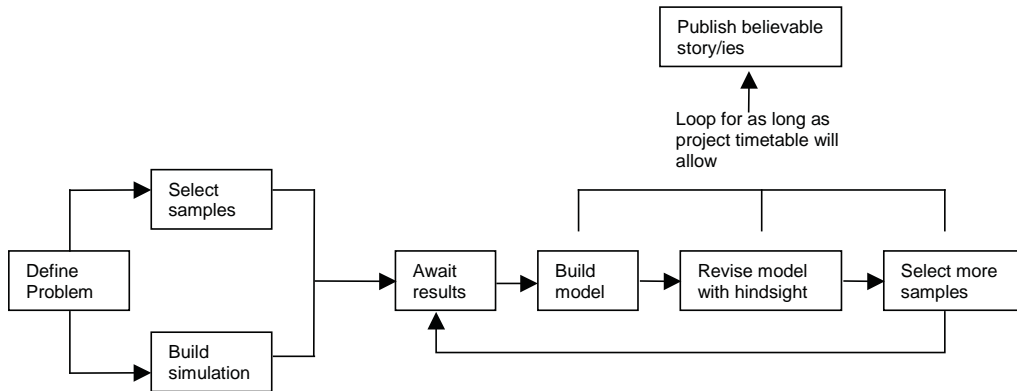
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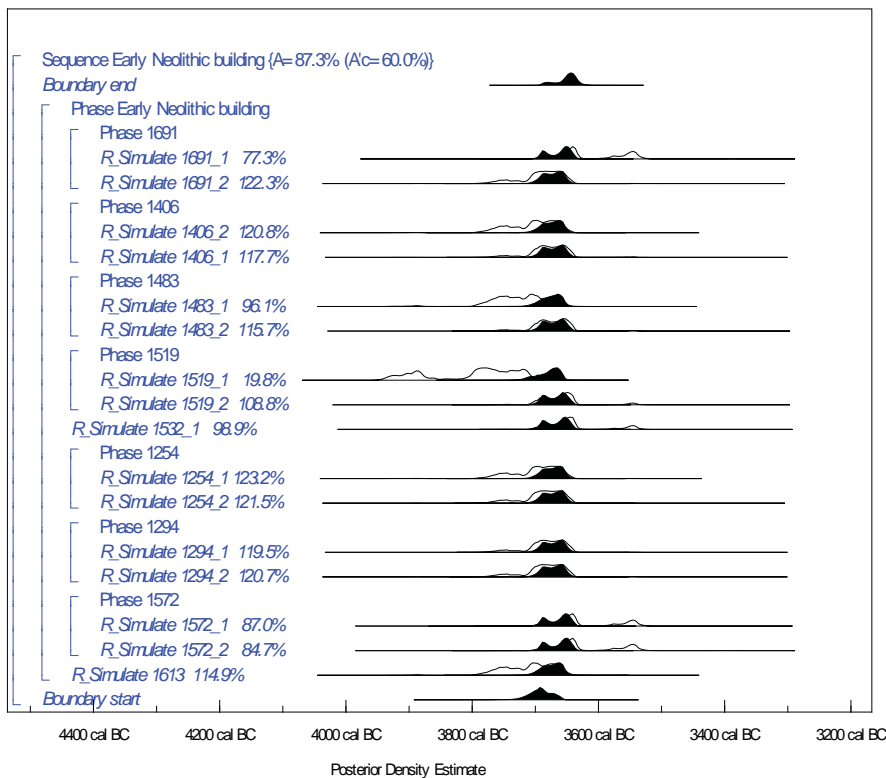
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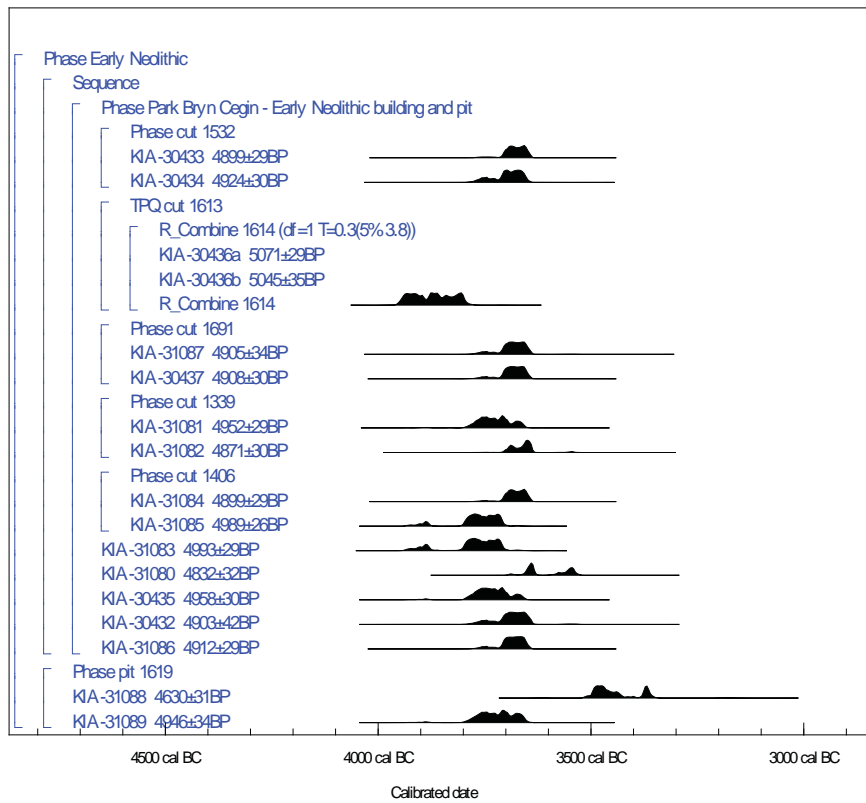
**Figure XVI.1:** Flow Diagram showing stages in routine chronology building (after Bayliss and Bronk Ramsey 2004)



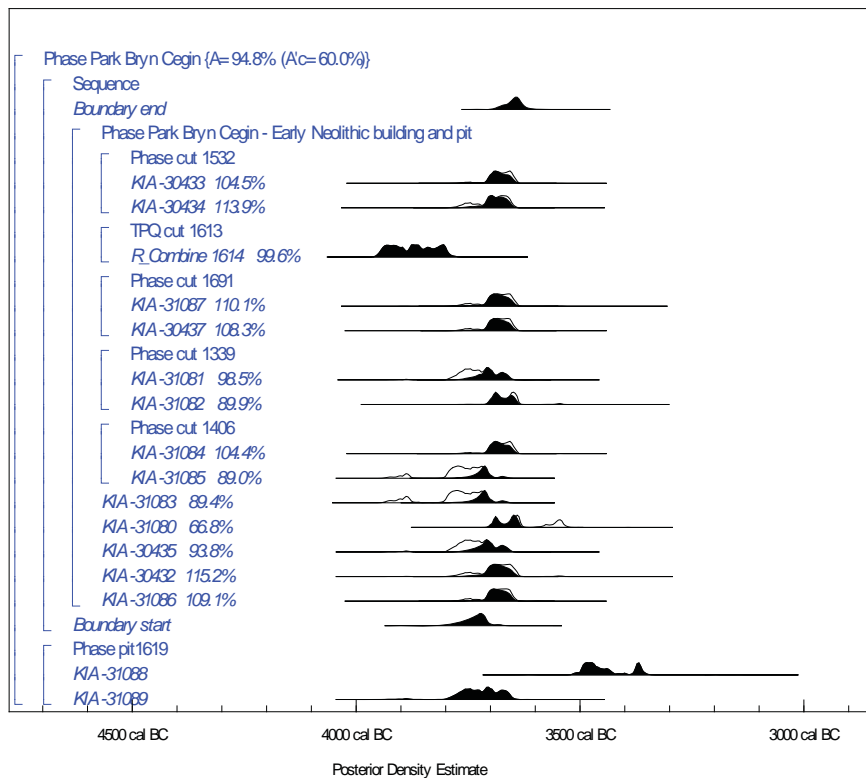
**Figure XVI.2:** Probability distributions of simulated dates from Parc Bryn Cegin – early Neolithic hou: each distribution represents the relative probability that an event occurred at some particular time. For each of the simulated radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘Boundary start’ is the estimated date for the start of use of the building at Parc Bryn Cegin. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



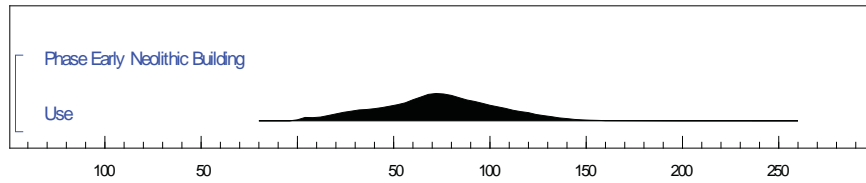
**Figure XVI.3:** Probability distributions of dates from Parc Bryn Cegin – early Neolithic building. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



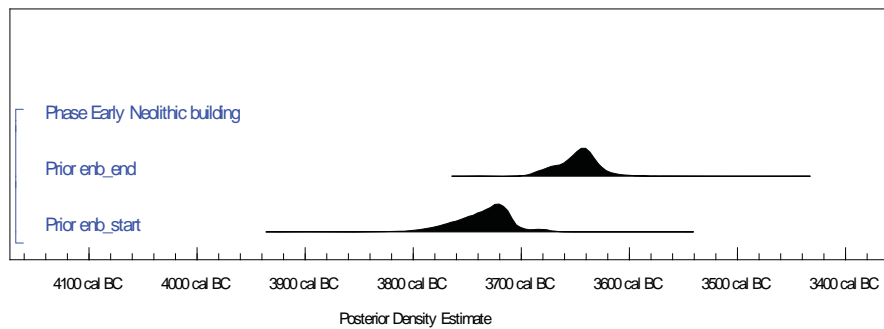
**Figure XVI.4:** Probability distributions of dates from Parc Bryn Cegin – early Neolithic building: each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘Boundary start’ is the estimated date for the start of use of the building. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



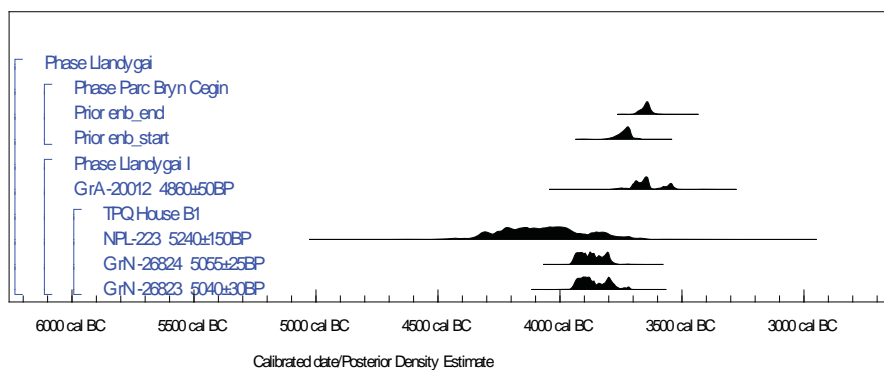
**Figure XVI.5:** Probability distribution of the number of years during which the building was in use. The distribution is derived from the model defined in **Figure 4**.



**Figure XVI.6:** Probability distributions of the estimates for the start and end of use of the early Neolithic building. The distributions are derived from the model defined in **Figure 4**.

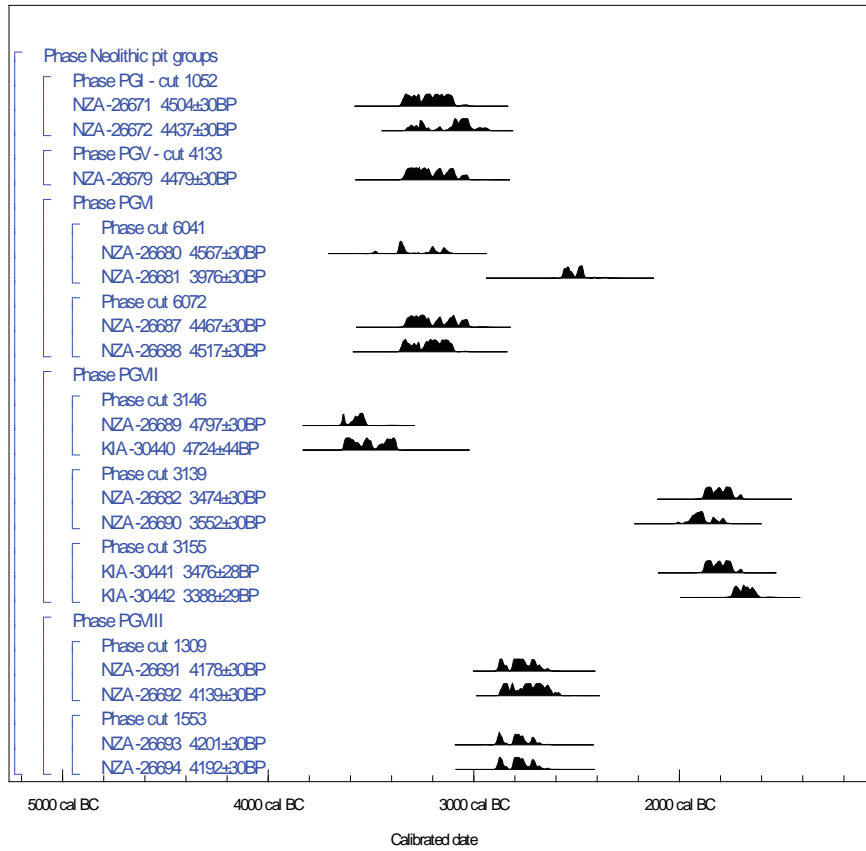


**Figure XVI.7:** Probability distributions of dates from Parc Bryn Cegin and Llandygai House B1. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993) apart from Parc Bryn Cegin derived from model shown in **Figure 4**.

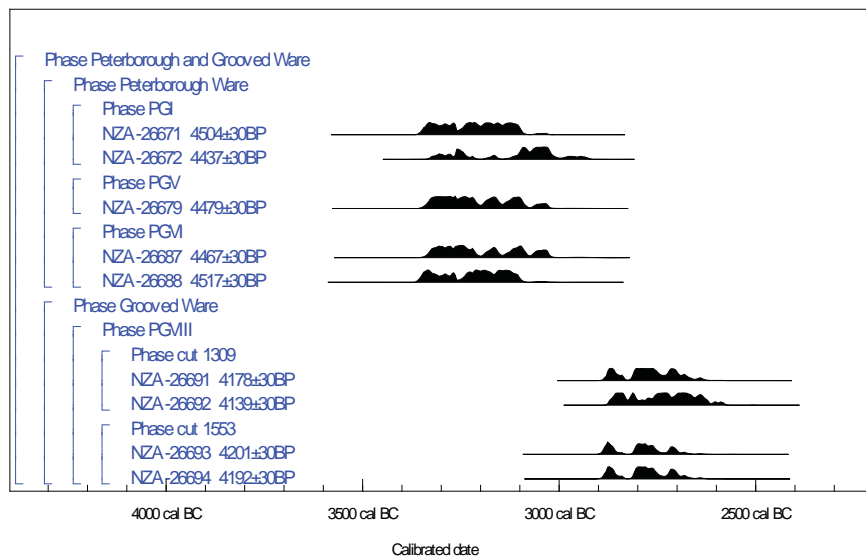




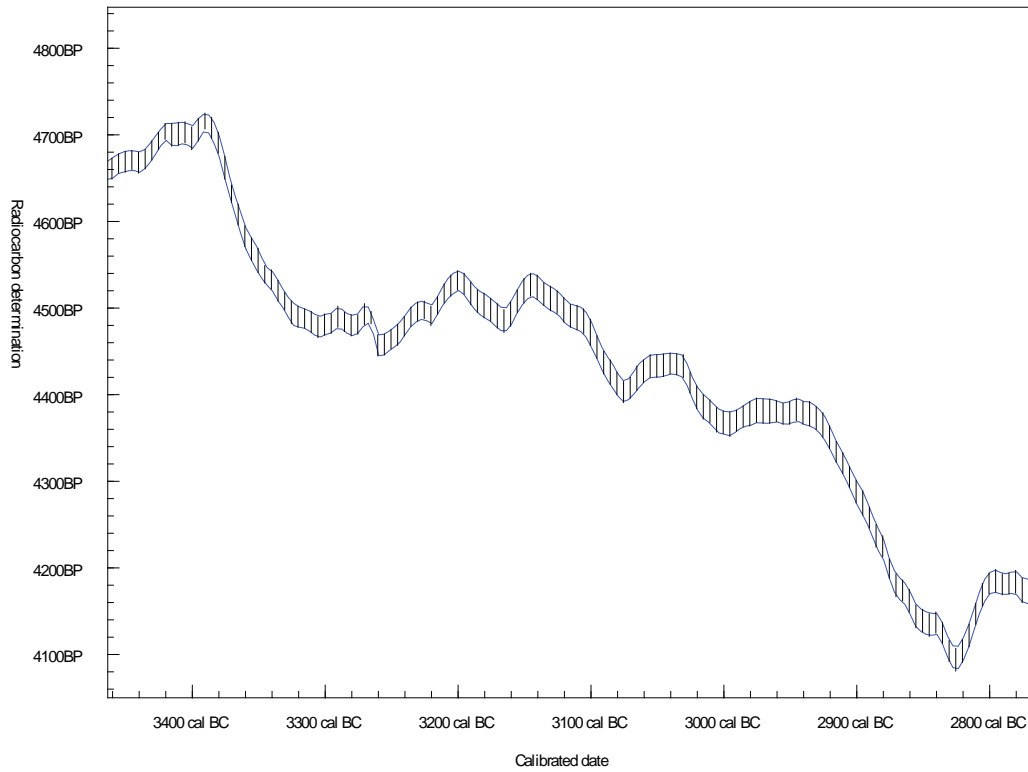
**Figure XVI.8:** Probability distributions of dates from Parc Bryn Cegin –Neolithic pits. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



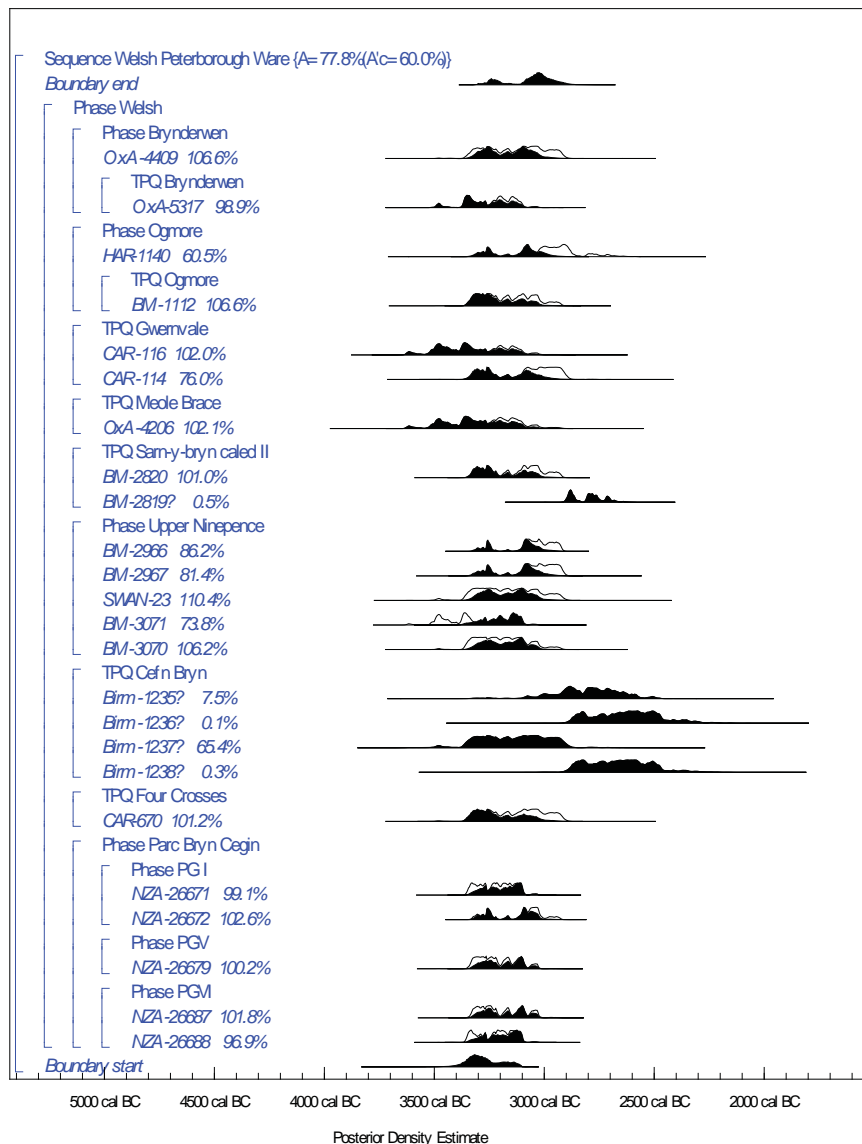
**Figure XVI.9:** Probability distributions of dates from Parc Bryn Cegin –Neolithic pits (Peterborough W and Grooved Ware). Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



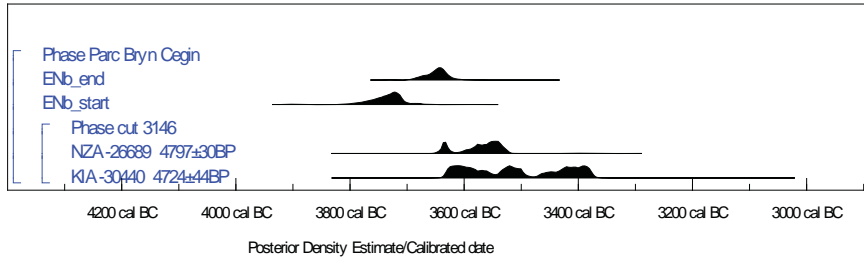
**Figure XVI.10:** Radiocarbon calibration curve (460-2800 cal BC)



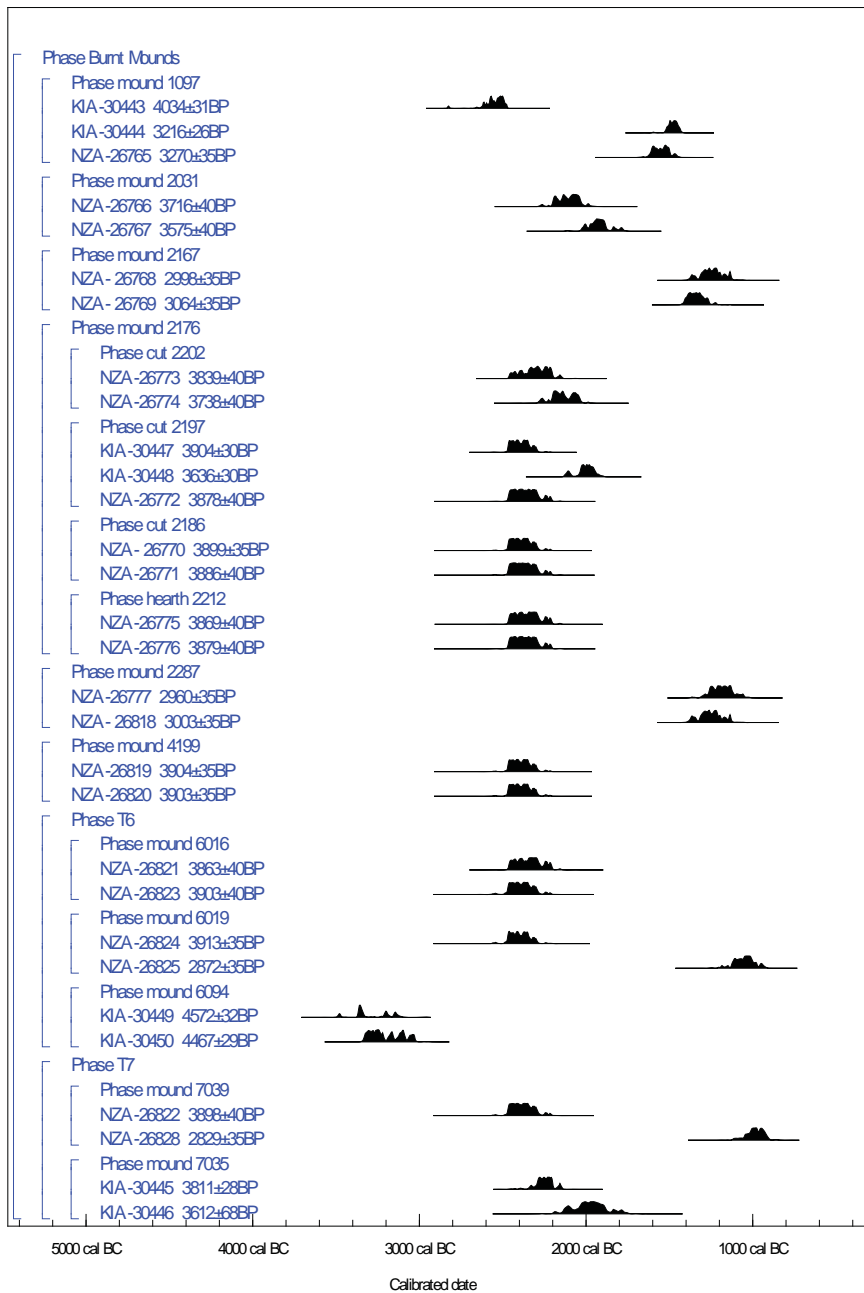
**Figure XVI.11:** Probability distributions of dates associated with Peterborough Ware from Wales and the Marches. A question mark (?) indicates that the result has been excluded from the model. The model is defined exactly by the brackets down the left hand side of the diagram



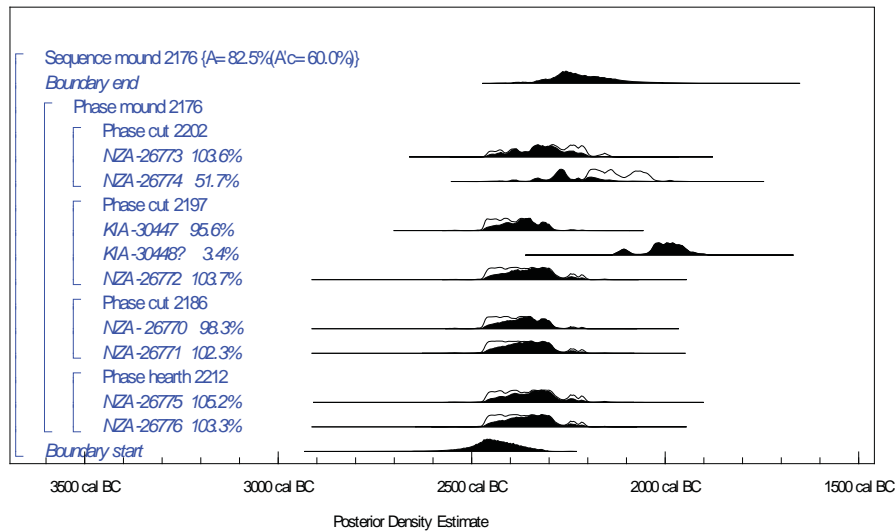
**Figure XVI.12:** Probability distributions of dates from the early Neolithic building and Cut 3146. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993) apart from the early Neolithic building derived from model shown in Figure 4.



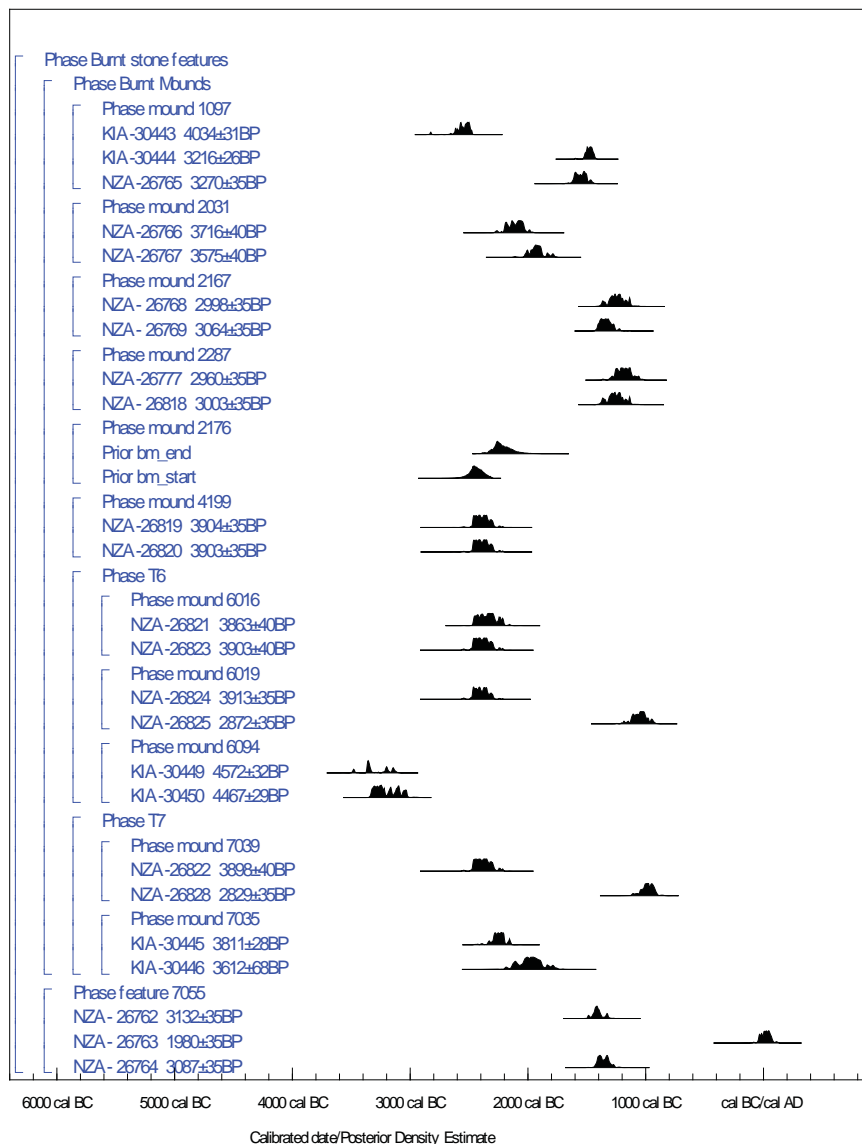
**Figure XVI.13:** Probability distributions of dates from Parc Bryn Cegin – Burnt Mounds. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



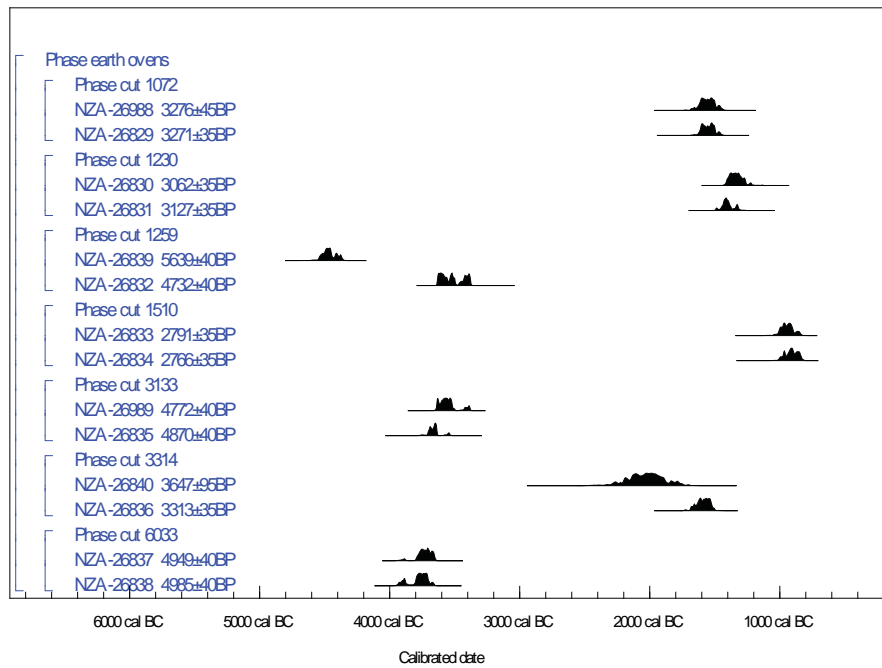
**Figure XVI.14:** Probability distributions of dates from Parc Bryn Cegin – Burnt mound 2176: each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘Boundary start’ is the estimated date for the start of use of the building. A question mark (?) indicates that the result has been excluded from the model. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



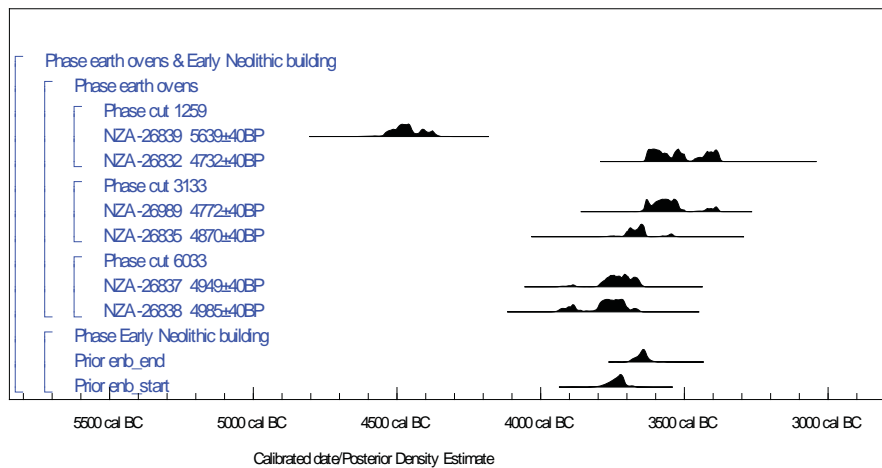
**Figure XVI.15:** Probability distributions of dates from Parc Bryn Cegin – Burnt stone features. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993) apart from Mound 2176 that are derived from model shown in Figure 14.



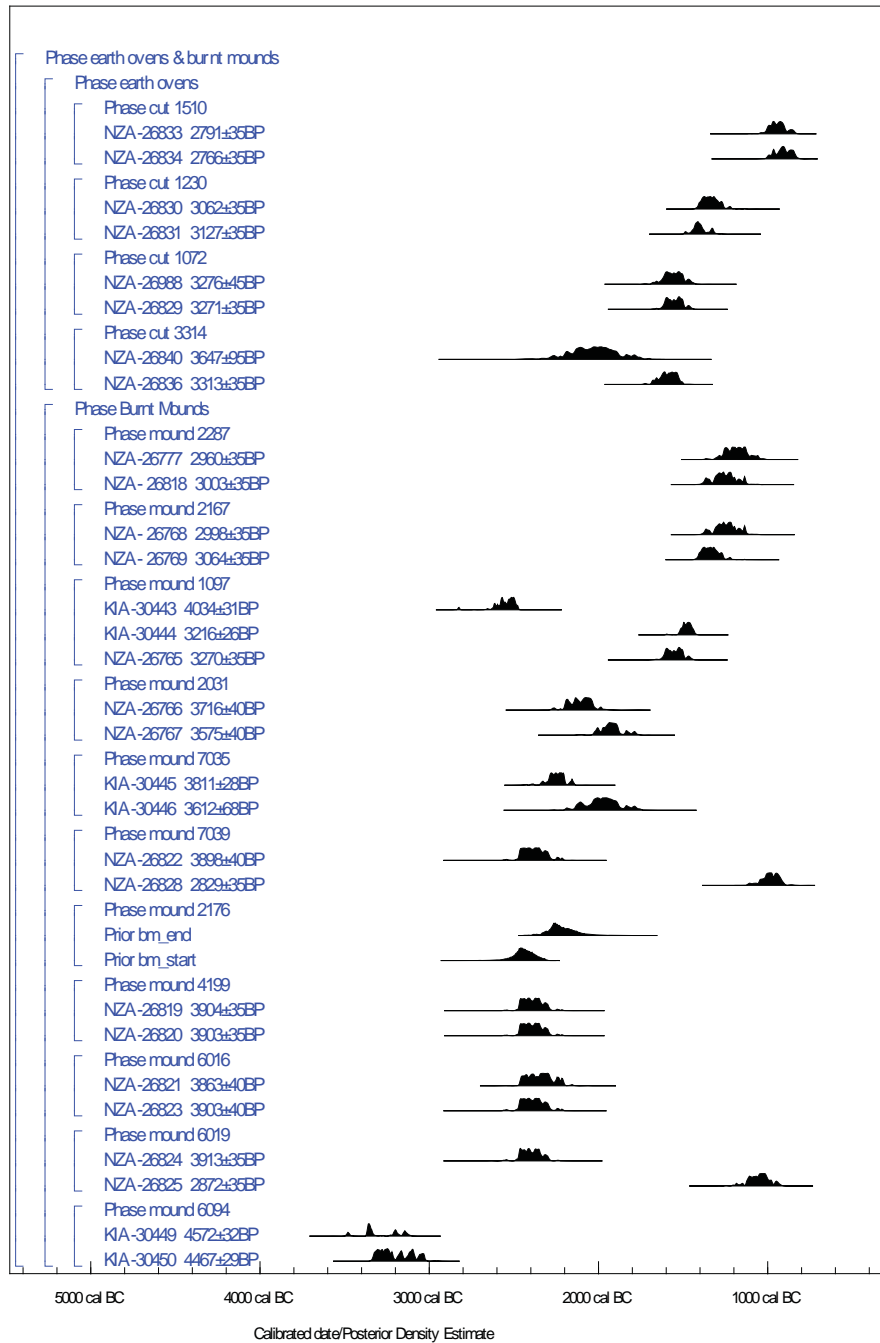
**Figure XVI.16:** Probability distributions of dates from Parc Bryn Cegin – earth ovens. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



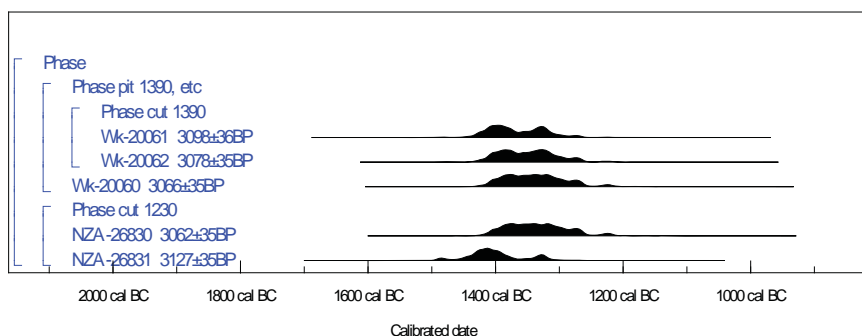
**Figure XVI.17:** Probability distributions of dates from Parc Bryn Cegin – Neolithic earth ovens and the early Neolithic building. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993) apart for those from the early Neolithic building derived from model shown in Figure 4.



**Figure XVI.18:** Probability distributions of dates from Parc Bryn Cegin –earth ovens and burnt mound. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993) apart from Mound 2176 derived from model shown in **Figure 14**.

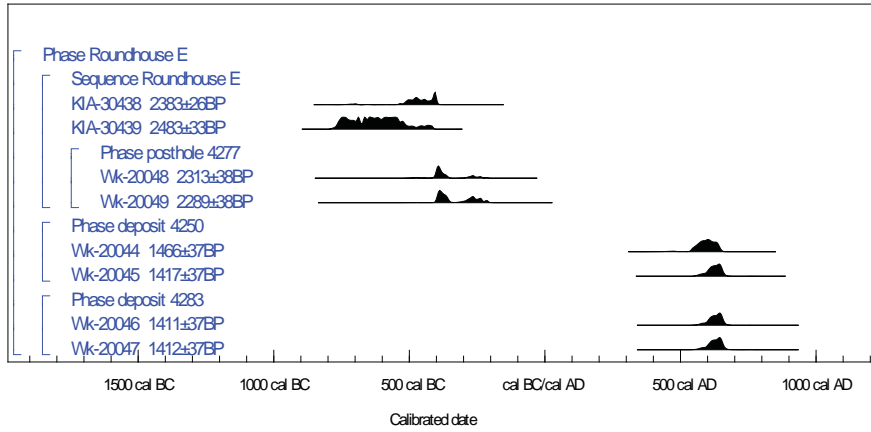


**Figure XVI.19:** Probability distributions of dates from Parc Bryn Cegin –pit 1390, etc. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).

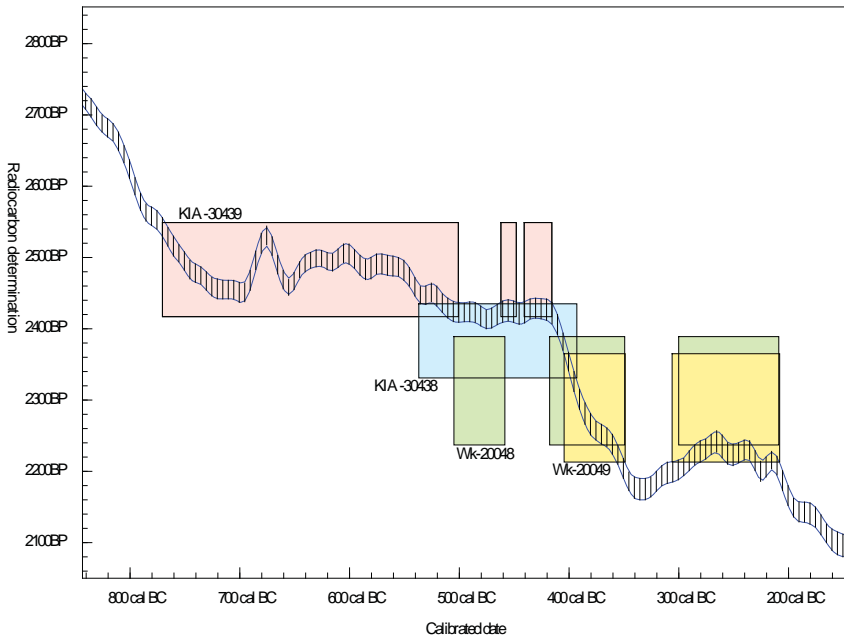




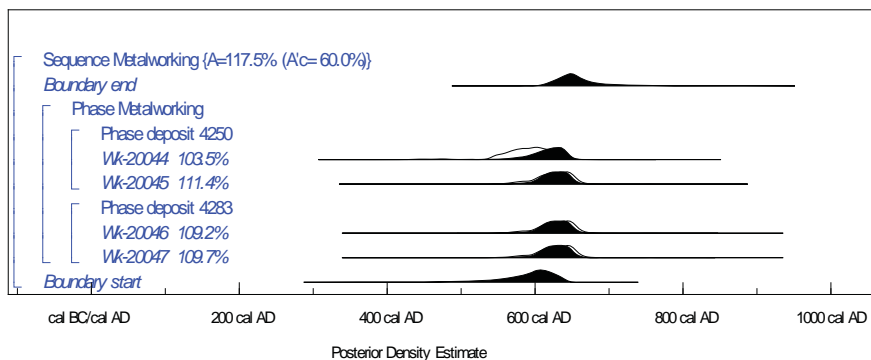
**Figure XVI.20:** Probability distributions of dates from Parc Bryn Cegin – Roundhouse E. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



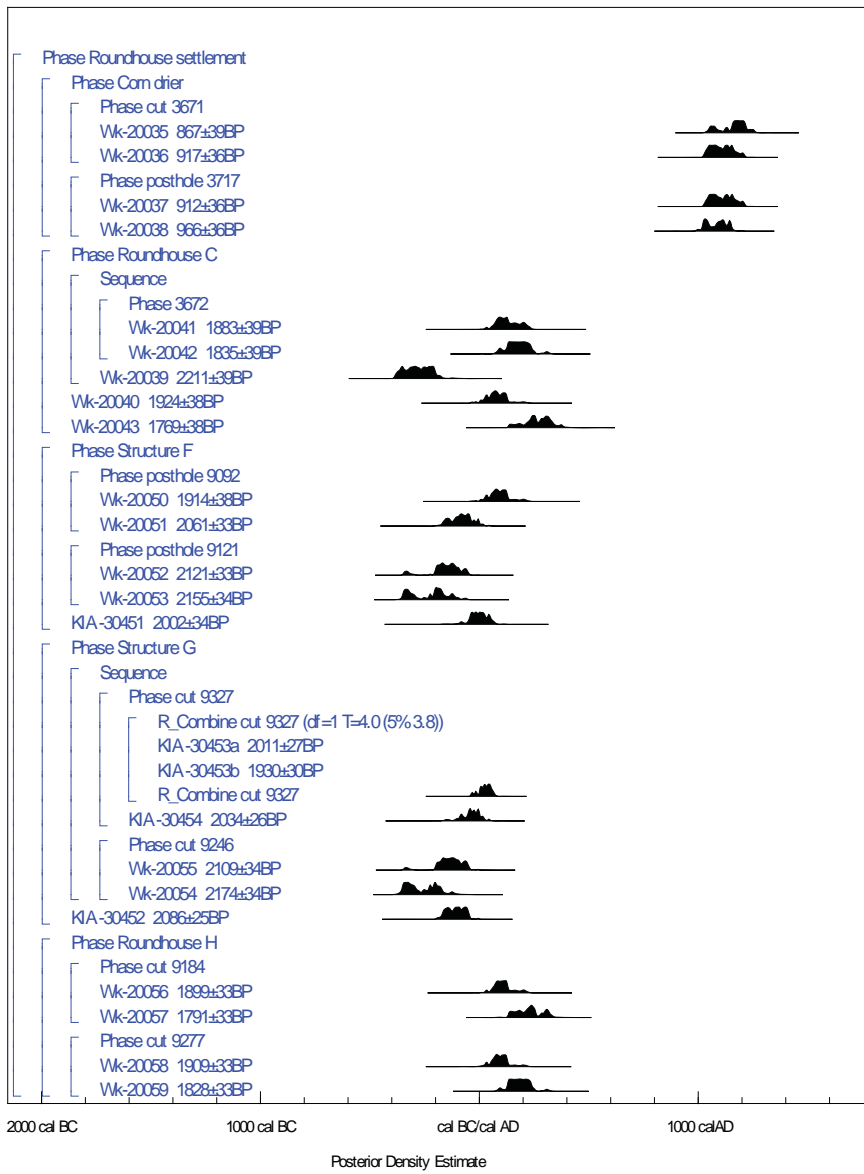
**Figure XVI.21:** Roundhouse E posthole radiocarbon results plotted on the calibration curve of Reimer et al. (2004)



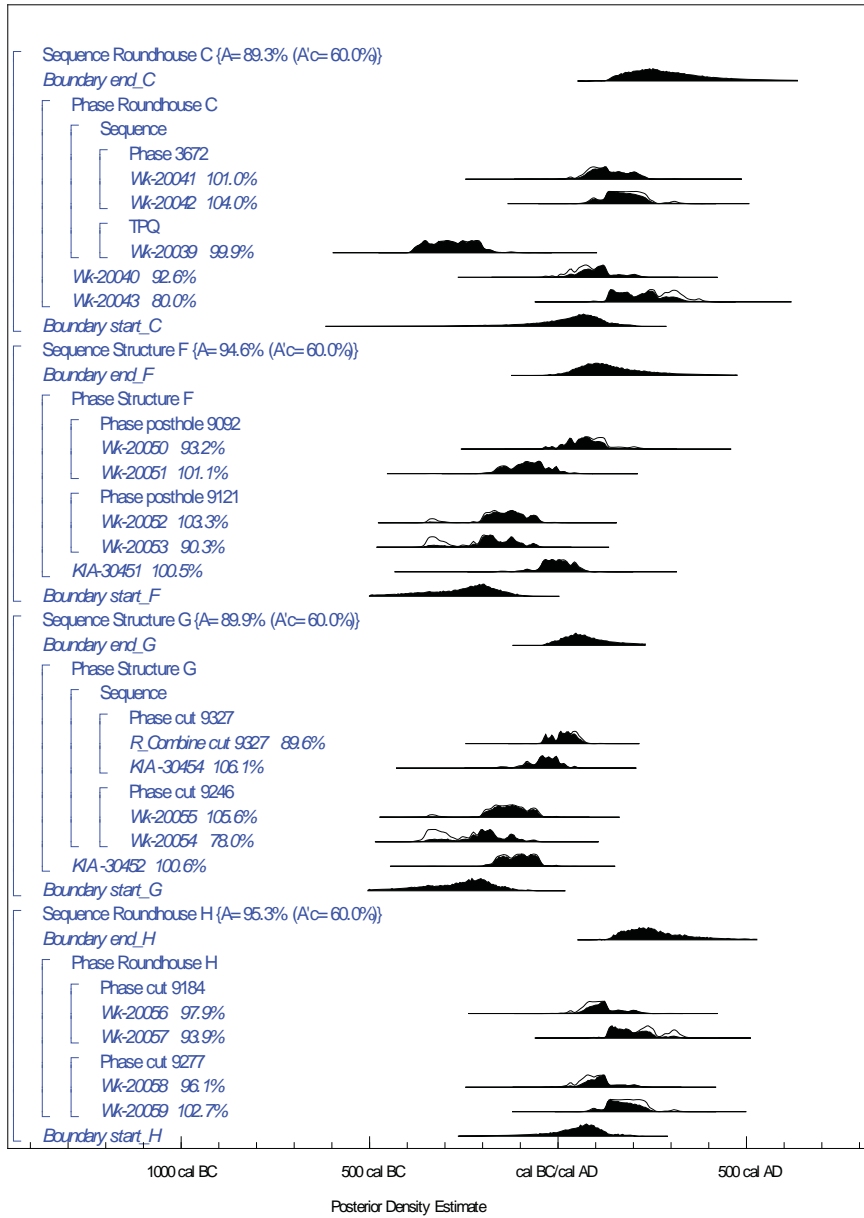
**Figure XVI.22:** Probability distributions of dates from Parc Bryn Cegin – metalworking (Roundhouse E). Each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘Boundary start’ is the estimated date for the start of use of the building. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



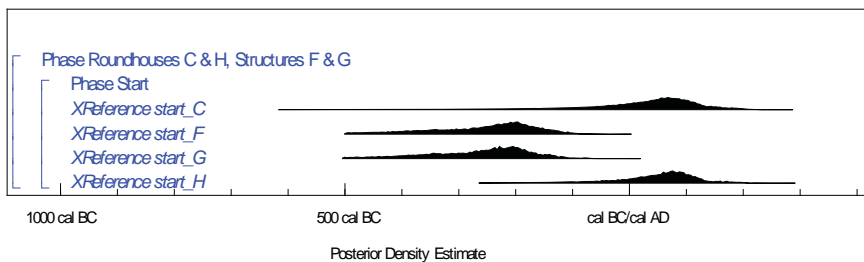
**Figure XVI.23:** Probability distributions of dates from Parc Bryn Cegin –earth roundhouse settlement. Each distribution represents the relative probability that an event occurred at a particular time. These distributions are the result of simple radiocarbon calibration (Stuiver and Reimer 1993).



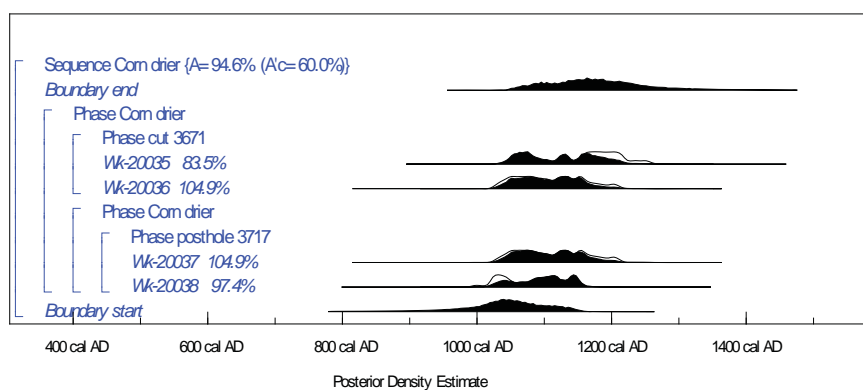
**Figure XVI.24:** Probability distributions of dates from Parc Bryn Cegin – roundhouse settlement: each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘*Boundary\_start\_H*’ is the estimated date for the start of use of the Roundhouse H. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



**Figure XVI.25:** Probability distributions of estimated start dates from Parc Bryn Cegin roundhouse settlement: each distribution represents the relative probability that an event occurred at some particular time. The distributions are derived from the model defined in figure XVI.24



**Figure XVI.26:** Probability distributions of dates from Parc Bryn Cegin – corn drier (near Roundhouse) each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, the distribution ‘*Boundary start*’ is the estimated date for the start of use of the corn drier. The large square brackets down the left hand side along with the OxCal keywords define the overall model exactly.



**Table XVI.1.** Parc Bryn Cegin radiocarbon results  
(All single entity samples weighing 1g or less)

**Early Neolithic building and pit**

<b>Cut No.</b>	<b>Context</b>	<b>Lab number</b>	<b>Local sample number</b>	<b>Material</b>	<b>Radiocarbon age (BP)</b>	<b>Weighted mean</b>	<b>Calibrated date (95% confidence)</b>	<b>Posterior Density Estimate (95% probability)</b>
1291	1290: fill of small internal posthole	KIA-31080	G1857/45/1290	Charred hazelnut shell	4832 ± 32		3660-3530 cal BC	3700-3630 cal BC
1339	1340: fill of small internal pit	KIA-31081	G1857/61/1340/1	Charred hazelnut shell	4952 ± 29		3800-3650 cal BC	3760-3650 cal BC
1339	1340: fill of small internal pit	KIA-31082	G1857/61/1340/2	Charred hazelnut shell	4871 ± 30		3710-3630 cal BC	3710-3640 cal BC
1370	1369: upper fill of small internal posthole	KIA-31083	G1857/62/1369	Charred hazelnut shell	4993 ± 29		3940-3700 cal BC	3770-3660 cal BC
1404	1445: charcoal-rich fill in post trench	KIA-31086	G1857/86/1445	Charred wheat grain	4912 ± 29		3760-3640 cal BC	3720-3640 cal BC
1406	1389: post-packing deposit in one of the central postholes	KIA-31084	G1857/73/1389	Charred hazelnut shell	4899 ± 29		3710-3640 cal BC	3710-3640 cal BC
1406	1405: fill of postpipe in one of the central postholes	KIA-31085	G1857/79/1405	Charred hazelnut shell	4989 ± 26		3910-3700 cal BC	3770-3660 cal BC
1483	1486: upper fill of E gable end posthole. Possibly deposited after the post was removed	KIA-30432	G1857/88/1486	Charred hazelnut shell	4903 ± 42		3780-3630 cal BC	3740-3640 cal BC
1532	1522: fill of postpipe in one of the central postholes	KIA-30433	G1857/96/1522/1	Charred hazelnut shell	4899 ± 29		3710-3640 cal BC	3710-3640 cal BC
1532	1522: fill of postpipe in one of the central postholes	KIA-30434	G1857/96/1522/2	Charred emmer wheat grain	4924 ± 30		3780-3640 cal BC	3740-3640 cal BC
1572	1571: secondary fill of posthole on S wall	KIA-30435	G1857/108/1571	Charred hazelnut shell	4958 ± 30		3800-3650 cal BC	3760-3650 cal BC
1613	1614: fill of postpipe in posthole on S wall	KIA-30436a	G1857/124/1614	Oak charcoal (alkali residue)	5071 ± 29	5060± 22 BP (T'=0.3; T' (5%)=3.8; v=1; Ward & Wilson 1978)	3955-3785 cal BC	3950-3795 cal BC
1613	1614: fill of postpipe in posthole on S wall	KIA-30436b	G1857/124/1614	Oak charcoal (humic acids)	5045 ± 35			
1619	1631: charcoal-rich fill within large pit,	KIA-31088	G1857/126/1631	Charred hazelnut	4630 ± 31		3520-3350 cal BC	-

Cut No.	Context	Lab number	Local sample number	Material	Radiocarbon age (BP)	Weighted mean	Calibrated date (95% confidence)	Posterior Density Estimate (95% probability)
	contained broken stone axe			shell				
1619	1631: charcoal-rich fill within large pit, contained broken stone axe	KIA-31089	G1857/204/1631	Charred hazelnut shell	4946 ± 34		3800-3650 cal BC	-
1691	1709: material deposited into top of W end gable posthole after post removed	KIA-30437	G1857/176/1709	Oak charcoal	4908 ± 30		3760-3640 cal BC	3720-3640 cal BC
1691	1723: post-packing deposit in W gable end posthole	KIA-31087	G1857/179/1723	Charred cereal grain	4905 ± 34		3780-3630 cal BC	3720-3640 cal BC

#### Neolithic pit groups

Pit Group	Cut No.	Context	Lab number	Local sample number	Material	Radiocarbon age (BP)	Calibrated date (95% confidence)
I	1052	1051: fill of small pit with Mortlake Ware	NZA-26671	G1857/8/1051/1	Charred hazelnut shell	4504 ± 30	3360-3090 cal BC
I	1052	1051: fill of small pit with Mortlake Ware	NZA-26672	G1857/8/1051/2	Charred hazelnut shell	4437 ± 30	3330-2920 cal BC
V	4133	4149: charcoal-rich fill towards base of pit with Fengate Ware	NZA-26679	G1857/569/4149	Residue from pot sherd in SF 569 (vessel V.A)	4479 ± 30	3350-3020 cal BC
VI	6041	6005: fill of pit with Grooved Ware	NZA-26680	G1857/607/6005	Charred hazelnut shell	4567 ± 30	3490-3120 cal BC
VI	6041	6005: fill of pit with Grooved Ware	NZA-26681	G1857/627/6005	Charred hazelnut shell	3976 ± 30	2580-2460 cal BC
VI	6072	6066: upper fill of pit with Fengate Ware	NZA-26687	G1857/653/6066	Charred hazelnut shell	4467 ± 30	3340-3020 cal BC
VI	6072	6073: lower fill of pit with Fengate Ware	NZA-26688	G1857/656/6073	Charred hazelnut shell	4517 ± 30	3360-3090 cal BC
VII	3139	3137: upper fill of pit	NZA-26682	G1857/248/3137/1	Charred barley grain	3474 ± 30	1890-1690 cal BC
VII	3139	3137: upper fill of pit	NZA-26690	G1857/248/3137/2	Charred hazelnut shell	3552 ± 30	1980-1770 cal BC
VII	3146	3145: lower fill of pit with Early Neolithic pot	NZA-26689	G1857/292/3145	Hazelnut charcoal	4797 ± 30	3650-3520 cal BC
VII	3146	3144: upper fill of pit	KIA-30440	G1857/291/3144	Wood charcoal, <10 years, species not identifiable	4724 ± 44	3640-3370 cal BC
VII	3155	3154: fill of pit	KIA-30441	G1857/294/3154/1	Charred hazelnut shell	3476 ± 28	1890-1690 cal BC
VII	3155	3154: fill of pit	KIA-30442	G1857/294/3154/2	Charred hazelnut shell	3388 ± 29	1750-1610 cal BC



VIII	1309	1308: primary fill of pit	NZA-26691	G1857/49/1308/1	Charred hazelnut shell	4178 ± 30	2890-2630 cal BC
VIII	1309	1308: primary fill of pit	NZA-26692	G1857/49/1308/2	Charred hazelnut shell	4139 ± 30	2880-2580 cal BC
VIII	1553	1554: main fill of pit with Grooved Ware	NZA-26693	G1857/241/1554	Charred hazelnut shell	4201 ± 30	2900-2670 cal BC
VIII	1553	1554: main fill of pit with Grooved Ware	NZA-26694	G1857/242/1554	Charred hazelnut shell	4192 ± 30	2890-2670 cal BC

### Burnt mounds

Burnt Mound No.	Cut No.	Context	Lab number	Local sample number	Material	Radiocarbon age (BP)	Calibrated date (95% confidence)	Posterior Density Estimate (95% probability)
1097	1154	1158: primary fill of trough	KIA-30443	G1857/29/1158/1	Charred hazelnut shell	4034 ± 31	2830-2470 cal BC	
1097	1154	1158: primary fill of trough	KIA-30444	G1857/29/1158/2	Charred hazelnut wood	3216 ± 26	1530-1420 cal BC	
1097	1154	1158: fill of trough.	NZA-26765	G1857/29/1158	Hazel charcoal	3270 ± 35	1630-1450 cal BC	
2031	2149	2145: fill of trough.	NZA-26766	G1857/497/2145/1	Hazel charcoal	3716 ± 40	2280-1970 cal BC	
2031	2149	2145: fill of trough.	NZA-26767	G1857/497/2145/2	Hazel charcoal	3575 ± 40	2030-1770 cal BC	
2167	2175	2173: fill of pit	NZA-26768	G1857/618/2173/1	Hazel charcoal	2998 ± 35	1390-1120 cal BC	
2167	2175	2173: fill of pit	NZA-26769	G1857/618/2173/2	Hazel charcoal	3064 ± 35	1420-1210 cal BC	
2176	2186	2193: fill of trough	NZA-26770	G1857/625/2193	Hazel charcoal	3899 ± 35	2480-2230 cal BC	2470-2230 cal BC
2176	2186	2196: fill of trough	NZA-26771	G1857/632/2196	Hazel charcoal	3886 ± 40	2480-2200 cal BC	2470-2230 cal BC
2176	2197	2200: main fill of trough	KIA-30447	G1857/638/2200/1	Possibly hazel charcoal, indeterminate age	3904 ± 30	2480-2290 cal BC	2460-2290 cal BC
2176	2197	2200: main fill of trough	KIA-30448	G1857/638/2200/2	Charred grain, species unidentified	3636 ± 30	2130-1910 cal BC	
2176	2197	2208: fill of trough	NZA-26772	G1857/639/2208	Hazel charcoal	3878 ± 40	2480-2200 cal BC	2470-2230 cal BC
2176	2202	2203: fill of trough	NZA-26773	G1857/661/2203/1	Hazel charcoal	3839 ± 40	2470-2140 cal BC	2450-2200 cal BC
2176	2202	2203: fill of trough	NZA-26774	G1857/661/2203/2	Hazel charcoal	3738 ± 40	2290-2020 cal BC	2430-2110 cal BC
2176		2209: fill of hearth 2212	NZA-26775	G1857/633/2209/1	Hazel charcoal	3869 ± 40	2470-2200 cal BC	2460-2210 cal BC
2176		2209: fill of hearth 2212	NZA-26776	G1857/633/2209/2	Hazel charcoal	3879 ± 40	2470-2200 cal BC	2470-2210 cal BC

2287	2288	2289: fill of trough	NZA-26777	G1857/667/2289/1	Hazel charcoal	2960 ± 35	1310-1040 cal BC	
2287	2288	2289: fill of trough	NZA-26818	G1857/667/2289/2	Hazel charcoal	3003 ± 35	1390-1120 cal BC	
4199	4208	4222: fill of trough	NZA-26819	G1857/368/4222/1	Hazel charcoal	3904 ± 35	2480-2280 cal BC	
4199	4208	4222: fill of trough	NZA-26820	G1857/368/4222/2	Hazel charcoal	3903 ± 35	2480-2280 cal BC	
6016	6018	6037: fill of pit	NZA-26821	G1857/616/6037/1	Hazel charcoal	3863 ± 40	2470-2200 cal BC	
6016	6018	6037: fill of pit	NZA-26823	G1857/616/6037/2	Hazel charcoal	3903 ± 40	2480-2210 cal BC	
6019	6023	6020: fill of pit	NZA-26824	G1857/610/6020/1	Hazel charcoal	3913 ± 35	2490-2290 cal BC	
6019	6023	6020: fill of pit	NZA-26825	G1857/610/6020/2	Hazel charcoal	2872 ± 35	1190-920 cal BC	
6094	6058	6057: fill of trough	KIA-30449	G1857/643/6057/1	Charred hazelnut shell	4572 ± 32	3490-3120 cal BC	
6094	6058	6057: fill of trough	KIA-30450	G1857/643/6057/2	Charred hazelnut shell	4467 ± 29	3340-3020 cal BC	
7039	7043	7044: fill of pit	NZA-26822	G1857/554/7044/1	Hazel charcoal	3898 ± 40	2480-2210 cal BC	
7039	7043	7044: fill of pit	NZA-26828	G1857/554/7044/2	Hazel charcoal	2829 ± 35	1120-900 cal BC	
7035	7045	7048: middle fill of pit	KIA-30446	G1857/576/7048	Possibly oak charcoal, indeterminate age	3612 ± 68	2200-1760 cal BC	
7035	7045	7049: upper fill of pit	KIA-30445	G1857/574/7049	Possibly oak charcoal, indeterminate age	3811 ± 28	2350-2140 cal BC	

### Feature 7055

Cut No.	Context	Lab number	Local sample number	Material	Radiocarbon age (BP)	Calibrated date (95% confidence)
7055	7050: Charcoal layer in base of [7055]	NZA-26762	G1857/601/7050	Hazel charcoal	3132 ± 35	1500-1310 cal BC
7055	7051: Main fill of [7055]	NZA-26763	G1857/602/7051	Unidentifiable cereal grain	1980 ± 35	50 cal BC-cal AD 90
7055	7059: Fill of stakehole in base of [7055]	NZA-26764	G1857/603/7059	Charcoal, probably hazel	3087 ± 35	1440-1260 cal BC

**Earth ovens**

<b>Cut No.</b>	<b>Context</b>	<b>Lab number</b>	<b>Local sample number</b>	<b>Material</b>	<b>Radiocarbon age (BP)</b>	<b>Calibrated date (95% confidence)</b>
1072	1087: main burnt stone fill	NZA-26988	G1857/13/1087/1	Barley grain	3276 ± 45	1680-1440 cal BC
1072	1087: main burnt stone fill	NZA-26829	G1857/13/1087/2	Hazelnut shell	3271 ± 35	1630-1450 cal BC
1230	1231: main burnt stone fill	NZA-26830	G1857/36/1231	Charcoal, probably hazel	3062 ± 35	1420-1210 cal BC
1230	1232: main burnt stone fill	NZA-26831	G1857/35/1232	Hazel charcoal	3127 ± 35	1490-1310 cal BC
1259	1260: main burnt stone fill	NZA-26839	G1857/56/1260	Hazelnut shell	5639 ± 40	4550-4360 cal BC
1259	1261: main burnt stone fill	NZA-26832	G1857/44/1261	Hazelnut shell	4732 ± 40	3640-3370 cal BC
	1263: charcoal spread over postholes	Wk-20060	G1857/39/1263	Hazelnut shell	3066 ± 35	1420-1210 cal BC
1390	1391: primary fill of deep pit	Wk-20061	G1857/70/1391/1	Probably hazel charcoal	3098 ± 36	1440-1260 cal BC
1390	1391: primary fill of deep pit	Wk-20062	G1857/70/1391/2	Probably hazel charcoal	3078 ± 35	1430-1260 cal BC
1510	1511: main burnt stone fill	NZA-26833	G1857/114/1511	Hazel charcoal	2791 ± 35	1020-830 cal BC
1510	1589: part of pit lining	NZA-26834	G1857/115/1589	Hazel charcoal	2766 ± 35	1010-820 cal BC
3133	3131: main burnt stone fill	NZA-26989	G1857/246/3131	Hazelnut shell	<b>4772 ± 40</b>	3650-3380 cal BC
3133	3132: primary fill	NZA-26835	G1857/247/3132	Hazel charcoal	4870 ± 40	3710-3530 cal BC
3314	3315: main burnt stone fill	NZA-26836	G1857/348/3315/2	Hazel charcoal	3313 ± 35	1690-1500 cal BC
3314	3315: main burnt stone fill	NZA-26840	G1857/348/3315/1	Hazel charcoal	3647 ± 95 (The large error reflects a high degree of variability in the 14/13 ratio)	2290-1740 cal BC
6033	6051: main burnt stone fill	NZA-26837	G1857/647/6051	Hazel charcoal	4949 ± 40	3900-3640 cal BC
6033	6052: lower fill, possible erosion deposit	NZA-26838	G1857/648/6052	Hazel charcoal	4985 ± 40	3940-3650 cal BC

**Roundhouse E**

<b>Cut No.</b>	<b>Context</b>	<b>Lab number</b>	<b>Local sample number</b>	<b>Material</b>	<b>Radiocarbon age</b>	<b>Calibrated date (95% confidence)</b>	<b>Posterior Density Estimate (95%)</b>
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							<i>probability)</i>
	4197: stony, charcoal-rich deposit sealing the 4 postholes in the middle of RHE	KIA-30438	G1857/346/4197	Charred barley grain	2383 ± 26	520-390 cal BC	
4252	4253: fill of one of the 4 large postholes in the middle of RHE	KIA-30439	G1857/383/4253	Charred twig fragment, species unidentified	2483 ± 33	780-410 cal BC	
4277	4276: fill of posthole	Wk-20048	G1857/397/4276/1	Barley grain	2313 ± 38	410-250 cal BC	
4277	4276: fill of posthole	Wk-20049	G1857/397/4276/2	Probably naked wheat grain	2289 ± 38	410-220 cal BC	
4250	Deposit with metal working debris	Wk-20044	G1857/382/4250/1	Barley grain	1466 ± 37	cal AD 530-660	<i>cal AD 570-660</i>
4250	Deposit with metal working debris	Wk-20045	G1857/382/4250/2	Naked wheat grain	1417 ± 37	cal AD 570-670	<i>cal AD 580-660</i>
4283	4179: fill of hearth with metal working debris	Wk-20046	G1857/345/4179/1	Barley grain	1411 ± 37	cal AD 580-670	<i>cal AD 590-670</i>
4283	4179: fill of hearth with metal working debris	Wk-20047	G1857/345/4179/2	Naked wheat grain	1412 ± 37	cal AD 570-670	<i>cal AD 590-670</i>

### Roundhouse settlement

Feature group	Cut No.	Context	Lab number	Local sample number	Material	Radiocarbon age (BP)	Weighted mean	Calibrated date (95% confidence)	Posterior Density Estimate (95% probability)
Corn drier near RHA	3671	3669: fill of corn drier	Wk-20035	G1857/450/3669	Oat grain	867 ± 39		cal AD 1040-1260	<i>cal AD 1040-1220</i>
Corn drier near RHA	3671	3670: fill of corn drier	Wk-20036	G1857/451/3670	Oat grain	917 ± 36		cal AD 1020-1220	<i>cal AD 1030-1190</i>
Corn drier near RHA	3717	3718: fill of posthole	Wk-20037	G1857/454/3718 /1	Oat grain	912 ± 36		cal AD 1020-1220	<i>cal AD 1030-1190</i>
Corn drier near RHA	3717	3718: fill of posthole	Wk-20038	G1857/454/3718 /2	Hazelnut shell	966 ± 36		cal AD 990-1160	<i>cal AD 1020-1160</i>
Roundhouse C	3325	3584: fill of pit	Wk-20039	G1857/469/3584	Hazel charcoal	2211 ± 39		390-170 cal BC	
Roundhouse C		3648: deposit overlying pit complex	Wk-20040	G1857/472/3648	Hazel charcoal	1924 ± 38		cal AD 1-140	
Roundhouse C		3672: deposit overlying pit complex	Wk-20041	G1857/475/3672 /1	Emmer/spelt grain	1883 ± 39		cal AD 20-240	

Roundhouse C		3672: deposit overlying pit complex	Wk-20042	G1857/475/3672 /2	unidentifiable cereal grain	1835 ± 39		cal AD 70-320	
Roundhouse C	3724	3681: fill of pit	Wk-20043	G1857/441/3681	Hazelnut shell	1769 ± 38		cal AD 130-390	
Structure F	9006	9004: main fill of posthole	KIA-30451	G1857/536/9004	Charred grain, species unidentified (humic acids)	2002 ± 34		90 cal BC-cal AD 80	
Structure F	9092	9091: fill of posthole	Wk-20050	G1857/541/9091 /1	Roundwood twig	1914 ± 38		cal AD 1-210	
Structure F	9092	9091: fill of posthole	Wk-20051	G1857/541/9091 /2	Roundwood twig	2061 ± 33		180 cal BC-cal AD 20	
Structure F	9121	9120: fill of posthole	Wk-20052	G1857/549/9120 /1	Wheat grain	2121 ± 33		350-40 cal BC	
Structure F	9121	9120: fill of posthole	Wk-20053	G1857/549/9120 /2	Roundwood twig	2155 ± 34		360-90 cal BC	
Structure G	9324	9323: fill of pit cut into fill of penannular gully	KIA-30452	G1857/678/9323	Charred twig, species unidentified, <20 years	2086 ± 25		190-40 cal BC	
Structure G	9327	9326: fill of posthole in centre of structure	KIA-30453a	G1857/680/9326 /1	Charred twig, species unidentified, 8-10 years (alkali residue)	2011 ± 27	1975± 20 BP (T <sup>+</sup> =4.0; T <sup>-</sup> (5%)=3.8; v=1; Ward & Wilson 1978)	40 cal BC-cal AD 75	
Structure G	9327	9326: fill of posthole in centre of structure	KIA-30453b	G1857/680/9326 /1	Charred twig, species unidentified, 8-10 years (humic acids)	1930 ± 30			
Structure G	9327	9326: fill of posthole in centre of structure	KIA-30454	G1857/680/9326 /2	Charred hazelnut shell	2034 ± 26		110 cal BC-cal AD 30	
Structure G	9246	9061: fill of pit	Wk-20054	G1857/594/9061 /1	Hazel charcoal	2174 ± 34		370-110 cal BC	
Structure G	9246	9061: fill of pit	Wk-20055	G1857/594/9061 /2	Hazel charcoal	2109 ± 34		350-40 cal BC	
Roundhouse H	9184	9185: fill of pit	Wk-20056	G1857/568/9185 /1	Hazel charcoal	1899 ± 33		cal AD 20-220	
Roundhouse H	9184	9185: fill of pit	Wk-20057	G1857/568/9185 /2	Hazel charcoal	1791 ± 33		cal AD 130-340	
Roundhouse H	9277	9276: fill of pit	Wk-20058	G1857/608/9276 /1	Unidentifiable cereal grain	1909 ± 33		cal AD 20-210	

Roundhouse H	9277	9276: fill of pit	Wk-20059	G1857/608/9276 /2	Unidentifiable cereal grain	1828 ± 33		cal AD 80-320	
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**Table XVI.2.** Llandegai -House B1 radiocarbon results Lynch and Musson 2001)

Posthole No	Lab number	Local sample number	Material	Radiocarbon age (BP)	Calibrated date (95% confidence)
9	NPL-223	B73	Fragments of mature charcoal	5240 ± 150	4360-3700 cal BC
12	GrN-26824	B98	Charcoal (45g) large pieces which were part of the core of the oak post	5055 ± 25	3960-3770 cal BC
2	GrN-26823	B77	Charcoal (60g), 38 pieces of oak, 3 pieces too incinerated but probably oak	5040 ± 30	3950-3710 cal BC
5	GrA-20012	B72	Charred hazel nut shell	4860 ± 50	3710-3520 cal BC

**Table XVI.3.** Probabilities of the relative chronology of the estimated start date for structures within the roundhouse settlement: the cells show the probability that the structure listed at the left of the table is earlier than the listed at the head of the table, eg the probability that *start\_G* is earlier than *start\_F* is 53.9%.

	<i>start_G</i>	<i>start_F</i>	<i>start_C</i>	<i>start_H</i>
<i>start_G</i>	-	53.9%	95.3%	96.5%
<i>start_F</i>	46.1%	-	94.8%	96.2%
<i>start_C</i>	4.7%	5.2%	-	53.3%
<i>start_H</i>	3.5%	3.8%	46.7%	-

## APPENDIX XVII: PETROGRAPHIC ANALYSES OF SHERDS FROM PARC BRYN CEGIN

John Ll. W. Williams and David A Jenkins

### 1. Introduction

Petrographic analysis was undertaken on 19 sherds which were selected from the Early Neolithic building and Pit Groups identified at Parc Bryn Cegin. This sample included all the typological groups represented at the site. The analysis aimed to classify the pottery by fabric, to provide information on the provenance of the ceramic raw materials, and to establish the typological association of the fabrics. The thin-section preparation techniques have been described elsewhere (Williams & Jenkins 1999, 2004a) and the site archive contains the full detailed report of these techniques and descriptions of the individual sherd fabric types identified. The quantitative analysis of the fabrics was based on a count analysis of 400 points *per* thin section in which the following components were identified according to general grain size: matrix (<0.06mm); grains (0.06-0.2mm); grog (>0.2mm), clasts (0.2-6.0mm) and voids (>0.002mm). The results are presented in tables and as triangular diagrams (Tables XVII.1 & 2; Figs. XVII.1 & 2) to relate to the fabric classification outlined in an extended study of prehistoric pottery from northern Wales (Williams & Jenkins 2004a)

### 2. Summary of Results

A summary of the analytical data is presented in Table XVII.1. Full data are given in the archival report.

### 3. Discussion

The analytical data can be considered in terms of: (1) general characterisation and grouping of the sherds, (2) the provenance of the materials used in production of the vessels, whether local or imported pottery, and (3) the typology of the pots.

#### 3.1 *Characterisation and grouping of sherds*

The general character of the fabrics can be described in terms of the proportions of filler, matrix and voids (Williams & Jenkins 2004a). From the resulting triangular diagram (Figure XVII.1) it can be seen that the 19 sherds analysed show similar proportions of these components to other Neolithic-Bronze Age pottery examined from northern Wales (Williams & Jenkins 2004a). Thus most are “moderately” tempered (15-30% filler), though 572, 568 & 776 are “sparsely” tempered (10-12%) whilst 768 stands apart in being “heavily” tempered (50% filler). Except for the three “corky” (vesicular) sherds (Group 1), samples are “dense” (voids <10%); indeed, the three corky sherds are also dense when their clast-voids are re-expressed in their presumed original calcareous form (Figure XVII.1).

**Table XVII.1: Summary of the analytical data for 19 sherds from Parc Bryn Cegin**

Sherd small find No.	Lab. Thin section No.	Voids: construction.	Voids: clast-voids	Matrix	Grains	Triassic quartz	Grog	Clasts	Mafic igneous	Silicic igneous	Sandstones	Metagartzites	Vein quartz	Fabric group
82	2241	2.0	17.2	78.9	1.7	p	-	1.2	-	0.5	0.5	-	0.2	1
167	2242	2.2	15.7	75.4	0.7	-	5.7	-	-	-	-	-	-	1
143	2235	2.5	20.2	62.5	5.0	p	>5.7	3.9			3.2	-	0.7	1
776	2238	6.5	1.5	80.5	1.0	p	>9.0	1.4	-	-	1.4	-	p	2
628	2248	6.5	5.7	80.9	2.5	-	13.5	1.0	-	p	1.0	-	p	2
103	2233	5.5	12.5	53.5	7.5	p	17.0	3.7	-	0.5	2.7	-	0.5	2
541	2244	5.2	4.5	64.2	6.0	p	9.2	10.4	-	9.2	p	-	1.2	2/3b
532	2236	4.2	0.2	61.2	9.0	p	15.5	9.7	p	-	7.5	-	2.2	2/3d
580b	2247	5.7	6.5	69.7	6.2	-	4.5	7.2	-	1.5	5.7	-	-	2/3d
106	2234	2.5	9.2	71.0	5.7	p	2.0	9.3	0.7	1.7	1.4	-	5.5	“3e/2”
572	2246	3.7	-	79.4	5.5	0.2	-	10.6	-	0.2	10.2	-	-	3c
768	2249	6.0	-	48.5	1.2	-	-	44.2	-	-	-	44.2	-	3d
568	2245	5.7	-	78.5	3.2	0.2	-	12.4	-	2.0	9.5	-	0.7	3d
580a	2237	4.7	-	56.0	13.0	p	6.4	19.6	-		15.1	-	4.5	3d
1	2240	9.2	-	65.2	2.2	0.5	-	23.2	-	-	1.2	-	22.7	3e
45	2232	3.2	-	70.5	5.2	0.2	-	20.2	-	-	1.2	-	19.0	3e
907	2250	3.7	-	52.4	7.5	p	8.0	28.3	-	0.2	7.4	-	20.5	3e
859	2239	5.2	-	63.5	10.0	p	0.5	20.7	-	14.0	p	-	6.7	3b/e
529	2243	7.7	-	64.9	4.7	0.2	-	22.4	-	1.0	2.0	7.9	11.5	3d/e

The grouping of sherds has been made according to the nature of the filler employed, that is the proportions of (1) clast-voids, (2) grog, and (3) lithic clasts, with intermediate mixed groups, such as 2/3. (Table XVII.1; Figure XVII.2). Group (3) is further sub-divided according to the general dominant/major lithology of the clasts, reflecting their provenance, perhaps modified by selection. Almost all groups are represented in this Parc Bryn Cegin sample, *i.e.*

- Group 1 -** Clast-void rich fabrics
- Group 2 -** Grog-rich Fabrics +/- minor clast-voids
- **Sub-group 2/3** Fabrics combining rock clasts and grog
- Group 3 -** Fabrics rich in rock clasts
  - Sub-group 3b** silicic igneous rocks
  - Sub-group 3c** metamorphic rocks
  - Sub-group 3d** sedimentary rocks
  - Sub-group 3e** vein quartz

**Sub-group 3a** (mafic igneous rocks) is not represented in the Parc Bryn Cegin sample and the groupings of some fabrics (*e.g.* **SF 103, 106, 167**) need to be considered individually as will be discussed in 3.3 below.

### 3.2 Provenance

Parc Bryn Cegin is located on the interfluvial ridge between the valleys of the north-flowing river Ogwen and the east-flowing Cegin. The former has its source in the Ordovician igneous and low-grade metamorphic rock outcrops of central Snowdonia, and the latter drains an area of the Arfon platform dominated by intermixed glacial and glaci-fluvial deposits again of Snowdonian extraction. Parc Bryn Cegin also lies near the confluence of Snowdonian Ice with the Irish Sea Ice whose deposits were derived from geological terrains remote from northern Wales.

In all fabric groups, and particularly Group 3, the overall rock assemblages are dominated by distinctive silicic igneous material (including ignimbrites), sedimentary rocks ranging from coarse lithic sandstone to fine grained foliated sandstone to mudstone; mafic igneous rocks and slates are only rarely represented. Other than for a metaquartzite dominant in one sherd (**SF 572**), this type of rock assemblage is typical of a Snowdonian source and suggests the local origin of the fabrics, although with a qualification. The only likely extraneous element in the assemblage is the presence of rounded Triassic sand grains (occasionally with pellicles and overgrowths) which are represented in fabrics belonging to all three of the principal fabric groups. Their presence may indicate a contribution from the Irish Sea deposits, a possibility that is consistent with the location of the Parc Bryn Cegin where exposures of both Snowdonian and Irish Sea tills occur nearby. Rock clasts, particularly of metamorphic, igneous and arenaceous rock types, are characterised by their angularity and sharp fractures; they contrast with the more rounded outlines of the argillaceous rocks, particularly the softer mudstones and clay nodules.

Provenancing material in sherds in Groups 1 and 2 is difficult since their clast content is small (<4%). Even where clasts are more common in Group 3 (7-44%) sourcing these rock types to specific outcrops is not possible since all occur in the derived context of the drift deposits of Snowdonia and the Arfon platform. Some of the Group 3 fabrics are characterised by an assortment of rock types rather than by single dominant forms, which may suggest that selection of specific rock fillers may not have been an overriding issue. In such examples it is possible that a coarse textured sandy sediment was added to the clay to produce a granular fabric. Those fabrics containing single rock types, such as the angular metaquartzite clasts in Fabric 3c, may require a different explanation since they suggest a degree of selectivity in the preparation of the potting mixture, a proposal discussed further when the typology of the pottery is presented in 3.3 below.

### 3.3 Typological correlations

The typology of the pottery and its relationship to the fabric classification is presented in Table 2.

**Table XVII.2: Correlation of fabric classification with pottery typology**

		<i>Typology:</i>				
		Early Neolithic	Mortlake	Fengate	Grooved Ware	Beaker?
<i>Group: (filler type)</i>	<i>Sub-group (Filler composition):</i>					
		82				

<b>1 Clast voids</b>		167				
		143				
<b>2 Grog</b>					776	
					103	
					628	
<b>2/3 mixed</b>	2/3b grog/silic. ign.			541?		
	2/3d grog/sedim.			532		
	“3e/2” v.q./grog				106	
<b>3 Clasts</b>	3c metamorphic			572		
	3d sedimentary			580a		
				768		
	3e vein quartz (v.q.)		1			907
		45				
3e/b v.q./silicic ig.			859			
3e/d v.q./sedim.			529			

The study indicates that Group 1 (clast-void rich – “corky”) fabrics have been identified associated with the Early Neolithic pottery from the “house structure” at Parc Bryn Cegin. The same types of fabrics have been noted in similar Neolithic pottery from the house structure at the adjoining site of Llandygai (Williams and Jenkins 2004b, 135). However, more than one type of clast-void (rhombic and cylindrical) is represented which might justify future sub-groups within Group 1, and this is best exemplified by fabric **SF 167** which is also unusual in being the one fabric devoid of lithic clasts.

Mortlake and Fengate pottery are principally associated with Group 2/3 and Group 3 fabrics where the granularity of the composition appears to be of prime importance. Angular rock clasts form the most important element in these fabrics, and in association with grog in Group 2/3 fabrics, they represent some of the most heavily tempered compositions in the whole assemblage. Although some of these fabrics contain an assortment of rock clasts the emphasis appears to be on the selection of light coloured lithic material. Vein quartz, orthoquartzites and metaquartzites are prominent in the clast-rich Group 3 sherds and these rocks may have been sought specifically and crushed deliberately. This preference for vein quartz in particular has been noted elsewhere (Gibson 1995) but so far this is the best example recorded in northern Wales. It contrasts with the marked preference for dark mafic igneous rock types observed in Bronze Age pottery (Williams & Jenkins 1999).

The Grooved Ware fabrics are of interest since they span Groups 2 and 2/3 in which grog appears as a particularly important component whether in combination with lithic clasts (2/3) or with minor void clasts (2). It is noted that Group 2 fabric with grog forming the principal filler constituent is represented in a single Grooved Ware sherd (**SF 776**) at Parc Bryn Cegin. This fabric is characterised by the coarse texture of the grog fragments and it replicates a similar ‘unrefined’ Grooved Ware fabric at Llandygai (Sample B118). Classic Beaker pottery, however, is not represented in the Parc Bryn Cegin sample. Another problem is posed by fabric **SF 106** whose combination of lithic clast and grog as filler is not recognised as a sub-group in the current classification (hence “3e/2” in the Tables and its position in Figure 2). However, the presence of the grog does align it with the other three Grooved ware sherds. Finally, it has not been possible to identify the typological status of an undiagnostic sherd from Parc Bryn Cegin (**SF 907**) petrographically. It is classified as Group 2/3, which might align it with the other Grooved Ware examples, and it is unlikely to be Beaker since the fabric does not correspond to the Group 2 fabrics identified in the Llandygai Beaker pottery (Williams & Jenkins 2004b, 133).

#### 4. Conclusion

The lithological assemblages associated with the fabrics identified in this analysis suggest that the greater proportion of the pottery is of local manufacture but, in the wider context, they also correspond to compositions that occur elsewhere in Wales and Britain. Yet, within this predominantly local repertoire, there are some compositions which stand out because of certain facets in their lithology or fabric, as in **SF 572** (Group 3) because of its un-provenanced metaquartzite, and in **SF 167** (Group 1) because of the absence of lithic clasts and the sophistication of its fabric. This might suggest that, in spite of a generally unspecific lithology, these two originate from a more distant provenance than the Parc Bryn Cegin area.

## References

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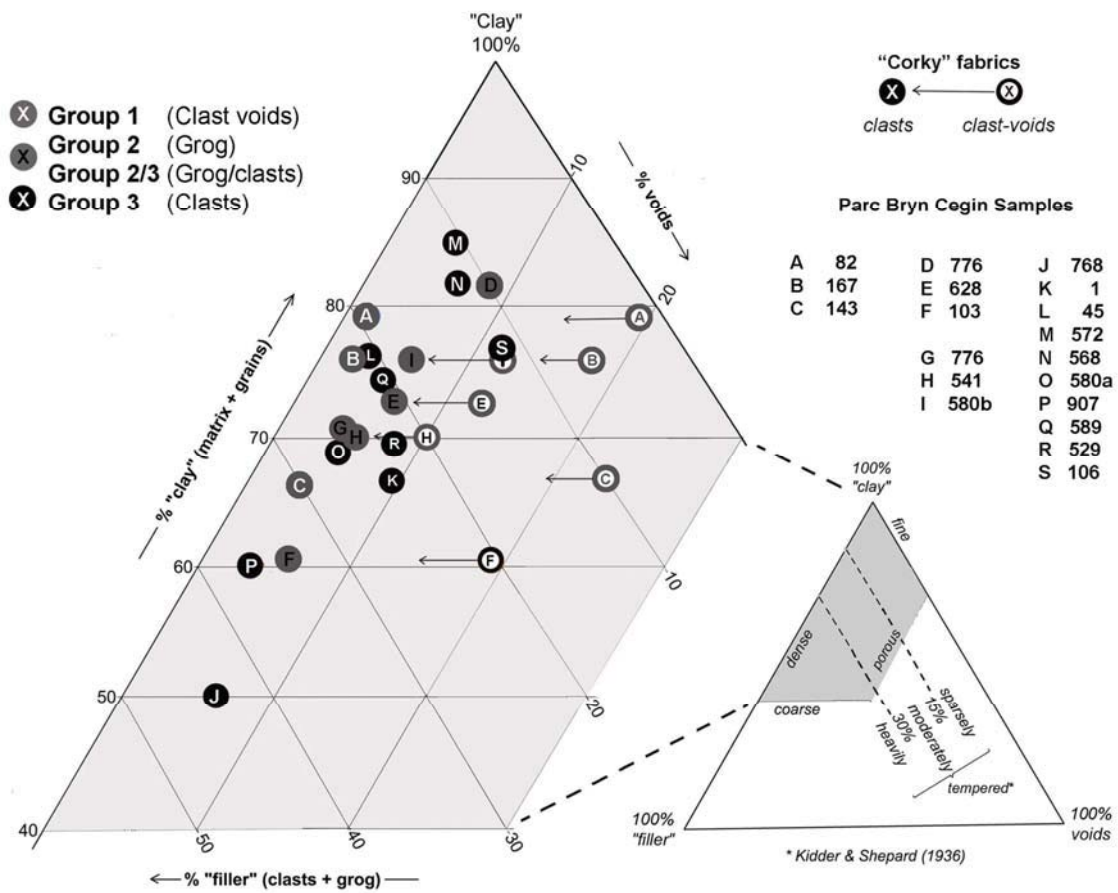


Figure 1: samples plotted according to fabric characteristics

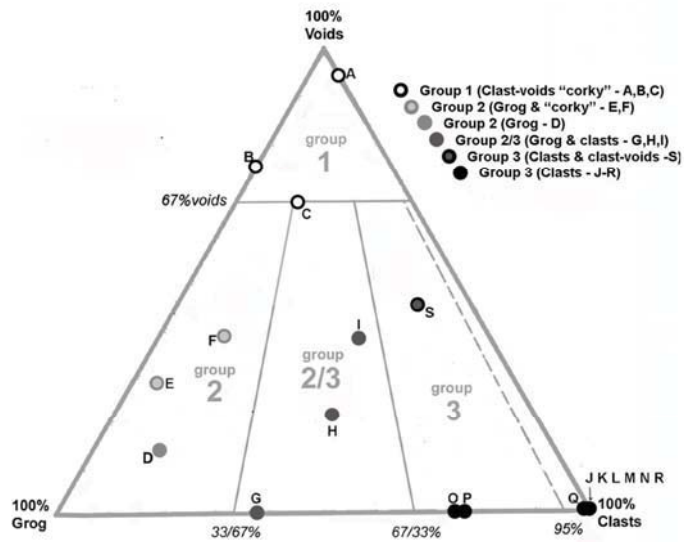


Figure 2: samples plotted according to filler type



YMDDIRIEDOLAETH  
ARCHAEOLEGOL  
GWYNEDD



GWYNEDD  
ARCHAEOLOGICAL  
TRUST

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