Excavation of an early medieval structure in Upper Pasture, Horton in Ribblesdale, North Yorkshire

Ingleborough Archaeology Group

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Contents

Figures

Tables

Summary

Earthwork remains of a small rectangular, stone-built structure were identified by field walking in Upper Pasture to the west of the hamlet of Selside in Upper Ribblesdale. Whereas received knowledge – or educated hypothesising – has suggested that many archaeological sites in Upper Ribblesdale are most probably of Romano-British date, none has been firmly dated. Excavation of the structure was conceived with the aim of testing the hypothesis that it was an early medieval shieling associated with transhumance stock rearing rather than a Romano-British building.

Significant quantities of Late Neolithic/Early Bronze Age chert, some of it worked, were recovered from within the structure but radiocarbon dating of two charcoal samples impressed into the floor within the building produced identical calibrated AMS dates of AD 660 – 780, thereby confirming the building's early medieval provenance.

Acknowledgements

The project could not have taken place without the permission and support of the landowner, Natural England, and of Colin Newlands and Andrew Hinde of the Ingleborough National Nature Reserve, and of the grazier, Keith Middleton, so thanks are extended to them. Thanks are also extended to Arthur Batty for his geophysical and Hexacopter surveys; to Dr Denise Druce for post-excavation analysis and preparation of charcoal samples; and to Dr Hannah Russ for examining and reporting on the lithics. A debt of gratitude is also owed to The Robert Kiln Trust for their generous financial support. I should like to thank Dr Helen Shaw for permission to reproduce the pollen diagram shown in Appendix 7 prior to its being formally published. Robert White is thanked for his helpful comments on the first draft. All photographs were taken by Chris Bonsall unless otherwise acknowledged. He is also thanked for formatting the final version of this report.

1. Introduction

The site in question is located at the south-western extremity of an enclosure known as Upper Pasture which lies between Fell Close to the west and Over Pasture (formerly Over Close) to the east (Fig.1). It is not uncommon to find that field names change periodically and Upper Pasture was called Simon Nook, at least at the time of surveying for the Ordnance Survey First Edition Six Inch map in the late 1840s.

Upper Pasture is bounded on its western and southern sides by a dry stone wall whose style of construction and cross-sectional form suggest a medieval or immediate post-medieval origin. The dividing wall between Upper and Over Pastures is clearly of more modern construction and the two were historically part of one large and possibly stinted pasture whose origins are thought to date from the monastic era.

The excavated feature showed as a small rectangular structure, with turf-covered wall lines except in its northern gable where a crudely-coursed drystone limestone wall stood to a maximum internal height of 600mm above turf level.

Fig. 1 Site location: the star symbol marks the excavation site

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The earthwork extended internally c. 1.8m in width by 5.8m in length, aligned on a north-east to south-west (40° - 220°) axis, and is sited at NGR SD77665 74103. It is sheltered behind a low limestone knoll adjacent and to the north, approximately 2.2m above the general ground level. Figure 2 is an aerial view of the structure, taken on 7 November 2010, using a Ricoh GX200 digital camera mounted on a MikroKopter Hexakopter MK-Okto. Figures 3 and 4 are ground views of the structure.

Traces of crude, spasmodic linear wall footings, or stone banks, run from near the structure in north-west and south-south-east directions, enclosing a shallow basin c. 50m to the south of the structure (Fig. 5). It is not known if the wall lines are contemporary with the excavated structure. There is also a small structure with stone footings visible, at SD77756 74035, 110m south-east of the main structure. This has two clear wall lines, 5.5m long on the north-south axis and 7.4m on the east-west, with a longer wall line running northwards from the west end of the latter feature for at least 30m to a distinct break of slope, and a short wall line extending from the eastern end for 4.5m. Apart from these, the main structure seems unconnected with any other local features identified on the ground during the project or from prior Historic Environment Record (HER) mapping.

Fig.2 Aerial view of the excavation site. The building is just left of centre. (Photo Arthur Batty)

Fig. 3 Ground view of the earthwork looking north

Fig. 4 Ground view of the earthwork looking south-east

Fig. 5 Shallow basin south of the excavation site (Photo David Johnson)

The site was first recognised by a Level 1 survey rapid field investigation (English Heritage 2007, 23).

Work on site was set to run from 14 May 2011, initially running to 27 May, but the complexity of the structure led to a second phase of excavation from 27 to 30 June.

2. Site Location and Topography

The entire area is grounded on Carboniferous Limestone strata with pockets of glacial deposits, on occasion filling natural basins within the limestone. One such shallow basin, diameter c. 50m, lies 50m to the south-west of the structure, and is filled with soil deposits with a high organic content and a very dark brown hue. Much of the area in Upper Pasture has a very thin veneer of topsoil that has developed on limestone pavement lying just below or on the present ground surface, with pockets of fine light brown silt (probably wind-blown loess) at least 30mm thick.

The altitude drops from 384m OD at the southern end of Upper Pasture to 325m OD at the northern end. The excavated structure lies at 380m OD.

3. Local Archaeological Context

Prior to this project the Yorkshire Dales Historic Environment Record (HER) listed seven archaeological features within Upper Pasture (Fig. 6), though the site in question was not listed. The site has since been given the HER reference number MYD 55685, and the excavation event reference code EYD 7625. HER mapping identified a series of boundary features across the area as well as other archaeological sites in Sulber, the enclosure to the south of Upper Pasture.

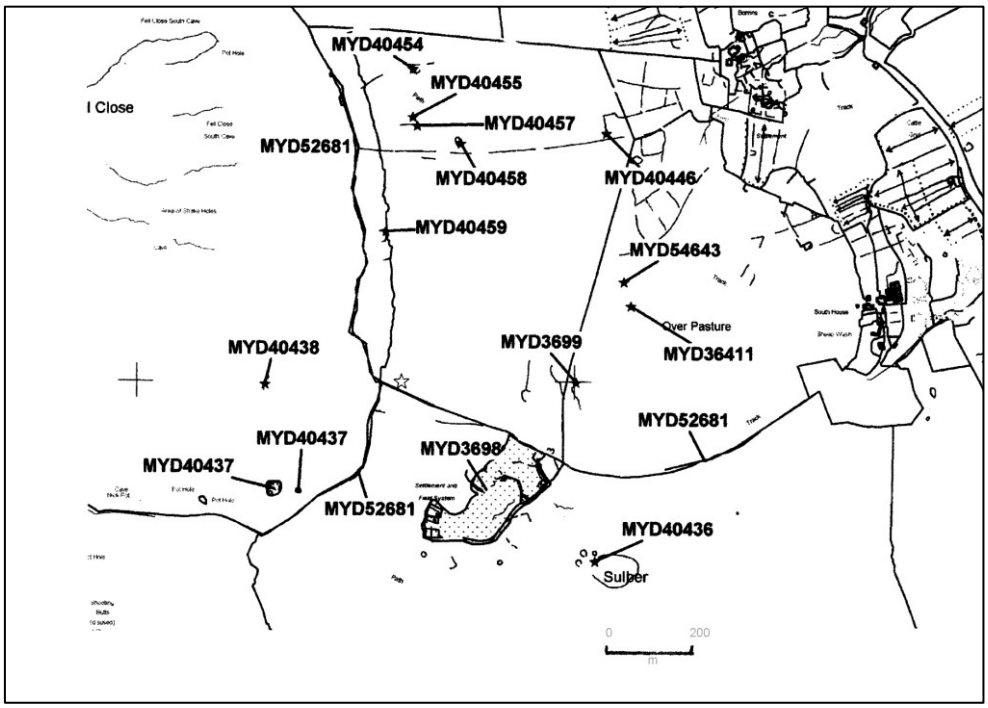

Fig. 6 Historic Environment Record plot showing recorded sites prior to the excavation. The star symbol represents the excavation site. North is at the top.

(© Yorkshire Dales National Park Authority)

Sites recorded on the HER, within a 1km radius of the site to be investigated, can be summarised as follows:

Upper Pasture

MYD40446 – probable field system of unknown date, seen as earthworks

MYD40454 – possible enclosure of unknown date, seen as earthworks

MYD40455 – possible cairn of unknown date, seen as an earthwork and stone pile

MYD40457 – potential bank of unknown date, seen as an earthwork

MYD40458 – possible enclosure of unknown date, seen as an earthwork

MYD40459 – probable enclosure of unknown date, seen as an earthwork and stonework

MYD52681 – drystone walling, probably medieval, associated with monastic sheep management, bounding Upper Pasture on its western and southern sides

Over Pasture

MYD3699 – inhumation burial with a Neolithic polished stone axe, petrological group VI, found in a gryke*

MYD36411 – two turf-covered wall bases

MYD52681 – see Upper Pasture above, bounding Over Pasture on its southern side

MYD54643 – limestone gryke with two adjacent upstanding large stones with 'high archaeological potential'

* Local anecdotal evidence rejects any direct connection between the location of the burial and that of the axe, as explained below.

Fell Close

MYD40437 – complex of two or three enclosures with one possible hut circle

MYD40438 – possible sheepfold of unknown date, seen as an earthwork and stonework

MYD52681 – see Upper Pasture above, separating Fell Close from Sulber to the south-east

Sulber

MYD3698 – probable Iron Age/Romano-British settlement and field system, visible as earthworks

MYD40436 – probable enclosure of unknown prehistoric date, see as earthworks.

Alan King outlined 'reasonably complete' field evidence of Romano-British activity on terraces between 260m and 340m OD, which has survived owing to an absence of subsequent ploughing (King 1986, Fig. 2; King and Simpson 2011, 28). He plotted a

significant number of possible Romano-British farmstead sites between Ribblehead and Selside, on the western side of Ribblesdale; and mapped in some detail enclosures and field systems at five such sites, one of which extends to the east of the Settle-Carlisle railway line. He described field enclosures associated with these farmsteads from 0.9ha to 1.35ha in area (King 1986, 186; 2004, 336-44). The site under review was not included in his surveys.

In a generalised and wide-ranging discussion Horne (2003, 59) drew attention to field evidence of 'fairly intensive agricultural use' in all the major valleys of the Dales, predating medieval occupation, though with a lack of firm dating evidence. No specific localities were discussed.

Upper and Over Pastures have been recognised as part of a large-scale monastic stock management operation centred on Selside under the control of Furness Abbey. The dividing wall between the two pastures is relatively modern but the (much rebuilt) tall and straight-sided curving wall separating Upper and Over Pastures from Sulber Pasture (see Figure 6) is thought to be of monastic origin (Lord 2003, 9), as is the straight-sided, crudely built and only three-quarter-height wall that separates Upper Pasture from Fell Close to the west. It should be noted, however, that a contrary view on the methodology of dating walls has been posited by Moorhouse (2003, 348). Nevertheless, the landscape between Sulber and Colt Park has elements of the medieval about it, superimposed on late prehistoric and early medieval layers.

A note of caution must be sounded when attempting to interpret the modern land surface within both Upper and Over Pastures. Exploitation of limestone pavement for sale as rockery stone is well documented in the general area and one memorandum, dated 24 November 1934, noted that extraction had been ongoing since the 1870s on what can only be deemed an industrial scale (NYCRO. ZTW III. 11/149). Exploitation here had begun in Over Pasture and had spread to Upper Pasture and adjacent land above Borrins farm to the north. Stone was advertised nationally, by a 'rockery merchant' based in Ingleton, and shipped 'all over the country'. A further memorandum, dated 5 December 1934, recorded 'many hundreds of tons of capital rockery stone ready to be picked up' and sold, and the landowner's land agent went as far as writing that 'there must literally be thousands of tons of excellent rockery stone'. As far as he was concerned, the greater the quantity extracted the greater the royalty payments accruing to the estate. A Memorandum of Agreement between the landowners, the Ingleborough Estate, and the operator, Jack Preston, dated 26 January 1935, included granting the latter the right to stone extraction within Upper Pasture and Borrans (*sic*) on condition that he inserted a 'nine foot' gateway between Over and Upper Pastures to gain access that way. From 1 January 1935 to 30 September 1936 Preston removed (or paid royalty on) 725.5 tons of stone from Over and Upper Pastures, and extraction went on long after that.

Thus, it is impossible now to estimate how much surface archaeology was destroyed during extraction, and the spatial extent of the area worked is also an unknown quantity. The network of tracks that criss-cross Upper (and Over) Pasture may well originate from this industry, and a number of 'stone arrangements' within the enclosure could be stone piles stacked up ready for removal but not sold.

Firm evidence of one particular archaeological loss does exist for Over Pasture, namely MYD3699 recorded on the HER as an 'inhumation burial with a Neolithic polished stone axe,

petrological group VI'. Correspondence from 1937 in the archive of the Ingleborough Estate, of Clapham, outlines the history of the discovery (NYCRO. ZTW III. 11/149). It was reported that the skeleton of a female had been found in a coffin-like recess (a gryke in fact) within limestone pavement in Over Pasture and given to Sir Arthur Keith, a prominent Scottish anthropologist and anatomist, for examination. The human remains and the hand axe had been found by R Richardson, an employee of Jack Preston, during extraction of limestone pavement stone in September 1936.

At the time, and long afterwards, it was assumed that the axe and the burial were found in the same spot (Gilks and Lord, 1985). However, the human bones have yet to be dated scientifically so it cannot be claimed with any conviction that it was an interment coeval with the deposit (or loss?) of the hand axe.

4. GPS Survey of Upper Pasture

Jeff Price

The survey was carried out using a Magellan Professional handheld computer with GPS and PocketGIS software.

The data are accurate to within 300mm after correction, using RINEX data.

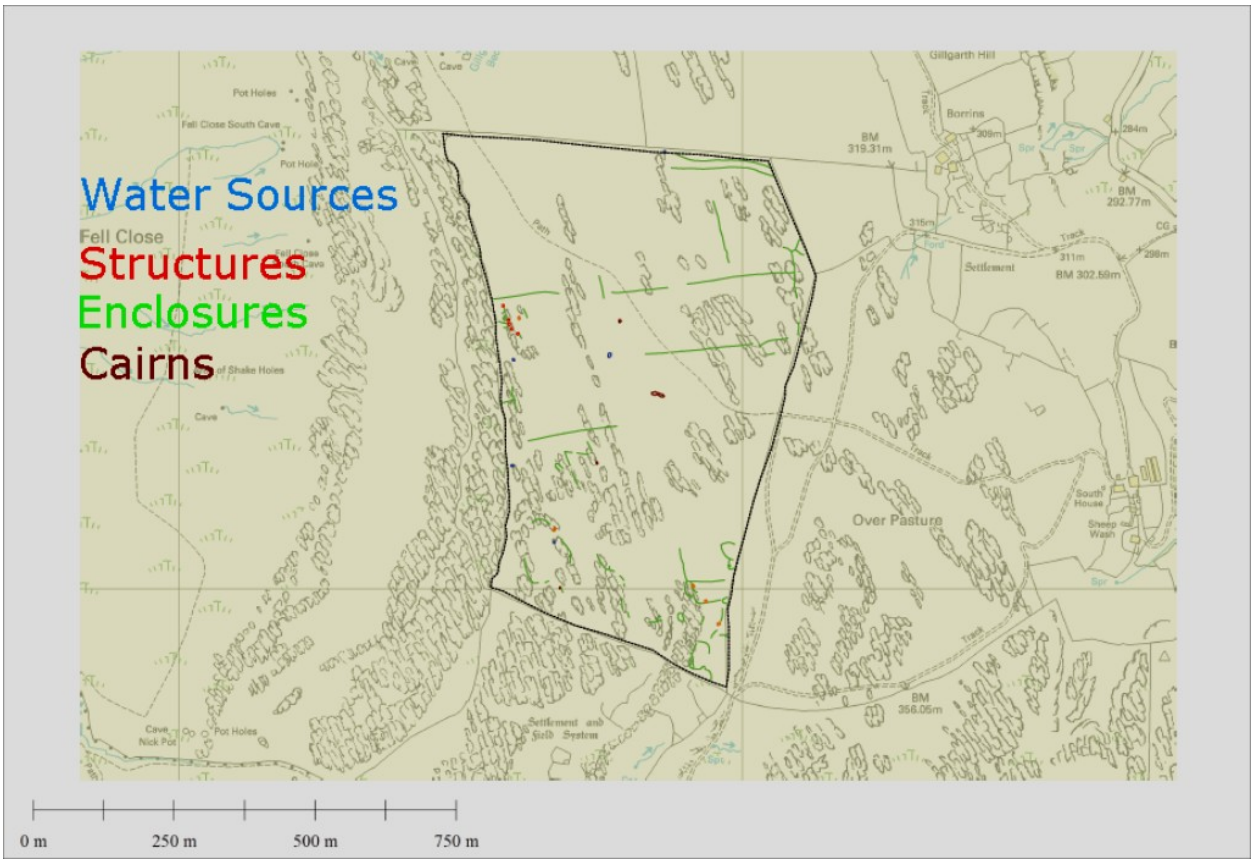

Fig. 7 Features plotted during the GPS survey.
North is to the top
(Computer graphics Jeff Price)

The features in Upper Pasture are not as noticeable as the surviving banks in Over Pasture but are still detectable. The survey was undertaken when the vegetation was at its maximum height but it is unlikely that, given the combined efforts of three surveyors, there are features which have not been mapped that would meet the criterion that a visitor to the site would need in order to find the recorded features. The purposes of the features are not addressed in this section but an explanation of some of the terms used on Figure 7 is necessary:

Water sources: ponds, springs and 'wet areas.
Enclosures: walls, banks and closed structures unlikely to have been roofed.
Structures: buildings which were likely to have been roofed originally.
Cairns: piles of stones which evidently do not serve as markers for paths or boundaries.

There is no dating evidence for the features with the exception of the excavated site.

It is worth noting that there are three distinguishable areas in Upper Pasture:

1. In the south-east corner there is an area of enclosures and structures which on the ground can be seen to link directly to the settlement and field system noted on the Ordnance Survey map in the field adjoining the south of Upper Pasture.

2. The enclosure remains possibly associated with the excavated site are curvilinear in contrast to the enclosures to the north of the site but similar to those in the south-east corner. There is an obvious association with a water source.

3. The enclosures in the northern half are clearly rectilinear and associated with water sources. A cluster of round structures close to the west wall of Upper Pasture sits within the enclosures but that does not necessarily imply an association between the two.

The cairns do not seem to connect in any obvious way with the enclosures but may be associated with the round structures near the west wall.

5. Archaeological Context: Comparative sites

The most well known rectangular structures to have been investigated in the western part of the Yorkshire Dales belong to the Gauber farmstead that has been described as being of the Viking period (King 1978), though a number of other broadly similar sites have been recorded from field walking. These include two early medieval farmsteads in Clapham Bottoms, a number of sites in Kingsdale including the medieval site excavated by the Group at Kingsdale Head, and three discrete farmsteads in upper Crummack Dale. There is also a documented deserted medieval settlement at Southerscales which contains the remains of six tenements. Elsewhere in the Dales an isolated structure above Gunnerside, several on Malham Lings and two on the eastern flanks of Highfolds at Malham Tarn all have broadly similar rectangular ground plans, though with considerable variation in dimensions. The site in question within Upper Pasture is the smallest of all these structures. Definitive dating evidence is not available for all of the sites mentioned here, apart from Clapham Bottoms (8^{th}-9^{th} century) and Crummack Dale (AD 760-940), both dated from material recorded in a

non-excavation context; Kingsdale Head (13th-14th century); and one site on Highfolds (11th-12th century).

Attention has been drawn above to the series of farmsteads between Ribblehead and Selside, ascribed by King to the Romano-British period, all of which consist of groups of enclosures of varying size which may have developed organically from an original core. These are, without exception, very different in plan and complexity from the Upper Pasture site.

Arguably, there is a lack of agreement amongst archaeologists concerning the differentiation of early medieval and medieval farmsteads and shielings, or indeed between shielings and stock shelters, given the dearth of detailed archaeological investigations of such features. However, work within Cumbria and Northumberland has attempted to distinguish farmsteads from shieling huts by the presence of associated enclosures: these are generally felt to represent farmsteads whereas shieling huts are thought to occur more in isolation. In reality the position is probably more complex than this. The definition of a shieling given by English Heritage is 'pasture to which animals were driven for grazing, with associated temporary huts for domestic or agricultural use' (NMR 1999) which tends to confirm the validity of those two surveys.

An inventory of shielings in the northern Pennines has logged c. 100 examples on the ground (Ramm *et al.* 1970) and archaeological watching briefs along the easement of a major gas pipeline in Lunesdale identified eighteen shieling sites between Orton and Dillicar alone (Lambert *et al.* 1996, 58). One of these, at a site known as Powsons, was fully excavated (below, Section 12 for further relevant detail).

Nevertheless, as Dickinson (1985, 83) has pointed out for Cumbria, the 'testimony of the spade is lacking': in other words there is a dearth of proven archaeological evidence for early medieval settlement. This is equally true for the Yorkshire Dales. One Cumbrian site, at Bryant's Gill in Kentmere, Cumbria, has the appearance of having been a Viking-period farmstead – just as the Gauber site at Ribblehead – but radiocarbon assay returned calibrated dates from charcoal from the seventh to tenth centuries, mostly too early to have been Scandinavian (Dickinson 1985, 86-88; Newman, 2006, 98). As Dickinson concluded, Bryant's Gill, Gauber and indeed Simy Folds in Upper Teesdale seem to 'fall into the same class', but what that class is has yet to be determined.

Excavation of the Upper Pasture site provided the opportunity to investigate in detail one relatively isolated rectangular structure, hypothesised prior to excavation to have been constructed of timber or turf set on or adjacent to stone-footing walls, smaller in ground plan than the dated sites, and largely devoid of associated paddocks and garths, apart from the possible walled shallow basin. The project was conceived as adding to the scant corpus of detailed surveys on early medieval structures within the Dales, and possibly offering opportunities for dating the structure and setting it within the chronology of post-Roman settlement and activity within the area.

6. Research aims and objectives

The project was designed to enable investigation of the following:

1. The structure's ground plan and detailed internal morphology, including walls, with the aim of determining constructional methods and materials. For example, was the internal floor paved or formed of bedrock; were the walls built in one building phase; were the surviving walls the base for supporting a timber or turf superstructure; were there any central roofing postholes, assuming it had been roofed?

2. The original function of the structure. Was it, for example, a summer shieling hut or a stock shelter/sheep cote, or indeed something pre-dating the early medieval period?

3. The relationship between the structure and the relict wall lines in the general area. Was it possible to identify if these secondary features were broadly contemporary with the main structure, suggesting perhaps that the structure was connected with the shallow basin?

4. Other as yet unidentified ground features. Are there other superficial features within the southern section of Upper Pasture that may have been related to the main structure or may be totally unconnected, such as a spring and water management, faint tracks, and a small feature made up of very broad free-standing drystone wall to the north-east of the site (Fig. 8).

5. Dating evidence. If it were a shieling hut – and this was only one possibility to be borne in mind – did it have a surviving hearth with charcoal suitable for AMS radiocarbon dating thereby enabling the site to be tentatively fitted into the assumed chronology of ladder settlements in Ribblesdale, as well as previously investigated sites at Ribblehead and in Clapham Bottoms?

6. If it were to prove logistically possible, environmental samples were to be obtained from within the shallow basin in particular to enable examination of pollen. This could help in the reconstruction of past environments in Upper Pasture.

7. Beyond these practical and research issues, the project also aimed to further the skill set of participants, to extend their knowledge of sites such as this one, and to make available to the wider general public and to researchers the results of this investigation by adding to the existing scant corpus of published material on archaeological sites in Upper Ribblesdale.

Fig. 8 Possible cairn feature north-east of the excavation site

7. Methodology

1. *Desk-based assessment*

Apart from what has been noted above, very little published or grey material has been located that is of relevance to the site but an archival and grey-material trawl was undertaken as part of the overall project.

2. *Geophysical surveying*

A magnetometer/gradiometer survey of the immediate site was undertaken by Arthur Batty prior to excavation, over an area 20m by 20m incorporating the feature excavated. The results were unhelpful in terms of interpreting any structural form as they highlighted superficial low-level burnt material across the entire grid with no organised form.

3. *Topographical surveying*

Detailed mapping using a Zeiss Elta total station and a mapping-grade GPS was carried out to encompass the main rectangular structure, secondary features and relict wall lines, as well as key topographic elements of the landscape such as the shallow depression, the potentially medieval field boundary wall, a nearby spring and other significant features.

4. *Excavation*

The excavation phase of the project was designed to take account of the demands of conservation of the archaeological resource being investigated, and of possible future research on the site, and of the needs of training and community participation. The archaeological integrity of the structures was to be maintained. The following excavation programme was undertaken:

Trench 1 was laid across the south-eastern corner of the structure, measuring 4m north-south by 2.5m east-west. This was designed to enable examination of part of the interior of the structure as well as the walls running on the eastern long axis and southern end gable. Ground topography indicates that any doorway must have been on the eastern side of the structure so it was hoped that this trench might locate it.

Trench 2 was laid out along the north gable wall, taking in both long axis walls and a small part of the interior of the structure. This trench measured 3.9m north-south by 3m east-west.

Depending on the findings within Trenches 1 and 2, and on the results of the magnetometer survey, it was envisaged that further excavation might take place within the centre of the structure, between the two existing trenches, and along the eastern side to pick up an entrance should one have survived.

Trench 3 was positioned over the isolated stone-built feature c. 200m south-east of the main structure (Trenches 1 and 2). It measured 2.5m by 1.5m and was designed to determine if it were merely two intersecting wall lines with no other structural form, or a structure in its own right.

Turf and top soil were removed by hand, using only hand buckets, and stored on Visqueen sheeting.

Each trench was photo-cleaned and photographed, and planned using 1m x 1m planning frames. A detailed photographic record was compiled and archived.

Excavation was carried out using hand-trowels.

Proforma Context recording sheets were compiled as per standard industry practice.

All artefacts were allocated a small finds number, logged and bagged, according to best practice, for post-excavation analysis.

All trenches were backfilled and the turf relaid on completion of the excavation phase.

5. Health and safety

Full and due regard was given to the safety of participants and permitted visitors and the health and safety policy was set in accordance with standard archaeological procedures. Briefings were given as necessary to all participants, with training available as and when required. A site incident book was on hand and a first aid kit kept on site by the appointed First Aider. A full risk assessment was completed prior to work on site. No trench reached depths where shoring is required so the '1.2m-rule' under the Health and Safety Executive's Construction Design and Management 2007 Building Regulations did not apply.

6. *Post-excavation*

The following procedures were followed:

1. A full project archive was compiled and a site diary kept. The archive has been deposited in the Group's own collection.

2. Full post-processing and analysis were undertaken as necessary by those with the necessary skills, including environmental sampling and radiocarbon dating of suitable materials recovered.

3. Artefacts logged have been deposited with the project archive.

8. Excavation Results

Trench 1

Drawing nos. 1501, 1502, 1504, 1505, 1506

Trench 1 was laid out 4m on a north-south axis by 2.5m on an east-west axis across the south-east corner of the structure being investigated. It was designed to take in part of the eastern elevation, the south gable and part of the interior, as well as to see if signs of a threshold had survived. As the feature's details were masked by the turf layer it was not possible to say, prior to excavation, if actual walls had survived (or existed at all) or whether only wall tumble would be revealed.

Fifteen contexts were recognised within Trench 1. Context 101 was a layer of very dark grey, friable clayey-silt topsoil. Its thickness varied across the trench between 30mm and 140mm. It was uniform in every characteristic and contained small fractured pieces of limestone as

well as two fragments of chert. It occurred across the entire trench except for a small lens in the south-east corner (Context 102) which was also made up of clayey silt but with a distinctive very dark grey-brown colouration lighter than 101. This context was found outside the structure's wall lines and it extended beyond the south-eastern edges of the trench. It had clearly developed under different edaphic conditions from 101 within the structure. Context 102 contained chert fragments and charcoal though the latter was interpreted as the result of modern burning of vegetation.

When Context 102 was trowelled off a layer of pliable greyish brown silty clay was exposed (Context 103). This was stone-free and was interpreted as natural material that extends beyond the trench edges. It also revealed fragments of chert and charcoal.

Within the structure removal of Context 101 exposed a disorganised tumble of angular limestone pieces (Context 104), of variable size (Fig. 9).

Fig. 9 Trench 1 showing Context 104

This was interpreted as a mixture of stone that had slumped from the walls of the structure and soil that had developed by natural processes since its abandonment, in a ratio of 60 per cent to 40 per cent. Large quantities of chert (21 pieces) and one piece of flint were logged from within Context 104.

The internal area (Context 104) was surrounded on all but the north-eastern quadrant by tumble (Context 105) and *in situ* stone from the structure's walls. It had a clearly defined inner face, composed of coursed limestone slabs ripped from limestone pavement, but no external face. The outer side of the walls was made up of banked limestone slabs. Many of the slabs were found lying at various angles to the horizontal representing the directions in which they had slipped off the wall since abandonment. Context 105 extended 4m by 1.6m. This context also revealed 21 pieces of chert and one of flint.

As the soil and stone material in Context 105 were removed a new subsoil layer was exposed (Context 106), much more compacted than Context 104 and with a hue more brown than grey. This covered the entire area within the structure and extended 1.62m by 860mm. No finds were logged from this layer.

It was clear from initial removal of the turf layer that the external 6m-long wall (Context 107) along the north-east side of the trench was markedly different from the rest (Context 105) (Fig. 10). In order to fully examine this, an extension (1a) was made to the trench extending 2m east-west by 1.9m north-south. Context 107 (in Trench 1 and 1a) comprised six large flat

slabs of limestone pavement laid edge to edge as if they had been set as a firm foundation layer for construction of the rest of that section of wall, which had been robbed at some point after abandonment. Each slab extended the full width of the original wall line as seen in Context 105, though individual widths varied from 650mm to 810mm, with thicknesses ranging from 80mm to 100mm. Together the six slabs extended 2.14m. The southernmost slab was bounded by a slight linear depression, running through the wall, beyond which were two more flat slabs suggesting that the entire east wall was constructed on similar slabs.

Fig. 10 Trench 1 showing Contexts 105 (west and south wall lines),106 (subsoil layer within the building), and 107 (east wall footings)

The original trench layout did not encompass the south-west corner of the structure, so extension 1b was laid out to examine this. It extended 2.5m north-south by 2m east-west. This was later extended northwards for 1.8m (extension 1c) to permit detailed examination of the entire west elevation wall.

Continued trowelling of Context 106 within the structure revealed a well-defined layer of very compacted brown clayey sand (Context 108), which formed the original floor surface of the building. Targeted examination of 108 showed that the structure had been built directly on a natural but now buried palaeokarst surface, complete with smoothed and rounded clints and grykes. To make an even floor surface these natural undulations had been infilled and levelled off with this clayey sand. Impressed into floor surface 108 were seven fragments of chert and seventeen pieces of charcoal.

At the north-eastern corner of the structure's interior a discrete 'arrangement' of five small limestone slabs was found looking like fallen dominoes (Context 109). Though initially they posed a problem of interpretation, it was finally assumed they were merely tumble from the external wall. One piece of chert was logged from within 109. A piece of burnt sandstone (Fig. 11) was recovered from below this arrangement which may have been part of a hearth, though there was absolutely no archaeological evidence to confirm this.

Running along the northern edge of the trench, and extending beyond it, were the foundation slabs (Context 110) of what appeared to be an interior dividing wall separating the main section of the building from the northern part (in Trench 2). To examine this fully, and to determine if the slabs were the foundations of a dividing wall, the trench was extended northwards by 800mm (extension 1d). Context 110 was 2.2m long by 650mm wide.

Fig. 11 Context 107 (east wall footings) and the location of the burnt sandstone, shown by the blue disc

The tumble from the greater part of the structure's wall lines (Context 105) was removed to confirm that the south gable and west elevation walls (Context 111) had survived more or less intact, to a maximum height of 700mm above the internal floor. No finds were recovered from Context 111. To determine the internal build of the wall, an extension (1e) was cut through the west wall 1.5m long by 1m wide (Fig. 12).

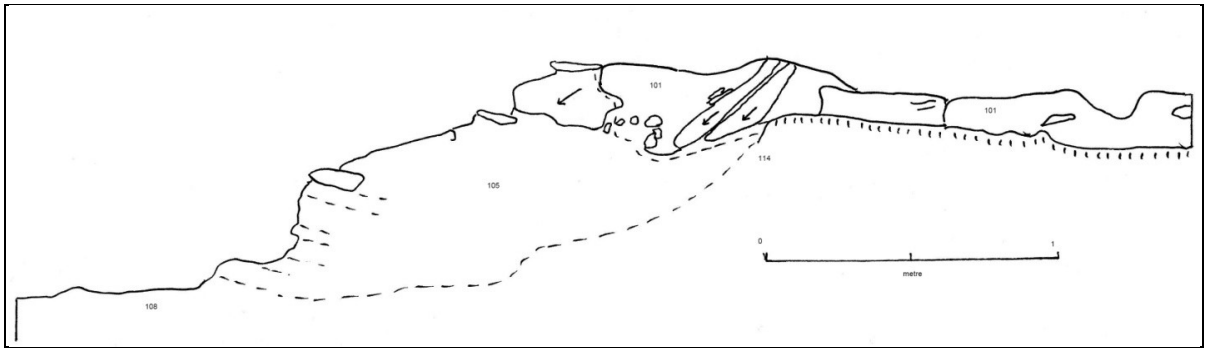

Fig. 12 Cross-section through Extension 1e, running SE (left) to NW (right) (Sectioned in the field by Peter Gallagher, Frank Laver and Martyn Winrow)

Removal of fallen slabs to expose the wall itself showed that the inner face (Context 112) was composed of large slabs of limestone pavement laid in a dry coursed manner backed by rubble-infill banking. It had been laid directly onto palaeokarst limestone pavement bedrock (Context 115). Three slabs in the wall had been deliberately set at an angle of 50-55 degrees, sloping down into the interior of the wall within extension 1e. It is postulated that they had been set in this way to prevent the inner facing stones from sliding down an angled slab of bedrock into the structure. A similar arrangement had been recorded within the south-eastern wall. Chert and charcoal were recovered from Context 112. Four fragments of chert and one of charcoal were logged from within 112. In addition, an assemblage of snail shells (ES 4) was revealed at a depth of 380mm beneath the top of the wall within this context.

A final extension to the trench (1f) extended 2m eastwards from the original edge, by 650mm in width. This was designed to test the hypothesis that the original threshold lay at this point

on the east wall by seeing if there were any cobbling or flat slabs laid outside the putative doorway. When trowelled off, a layer of smooth olive brown silty clay was exposed (Context 113), totally stone-free except where it bounded the original edge of the trench. It clearly extended beyond the edge of the trench and was interpreted as natural material. Two pieces of unworked chert were logged impressed into Context 113.

Within the south-east corner of extension 1f was a small discrete lens of brown medium sand, or wind-blown loess (Context 114). This was identical to material exposed in two 1m by 1m test pits cut to the east of the structure, and was interpreted as natural post-glacial deposits. No finds were logged in this context.

Trench 2

Drawing nos. 1500, 1507

Trench 2 was laid out 3.9m on a north-south axis by 3m on an east-west axis, and it was designed to take in the north-west corner of the structure, part of the internal floor at the northern end and the outer parts of the north-east gable and the northern end of the west wall. Much of the gable wall had survived – or had been rebuilt – to a height of 700mm from the internal floor level.

Six contexts were recognised within Trench 2. Context 201 was a layer of topsoil up to 90mm thick, identical in form and characteristics to Context 101, covering the entire trench apart from on the upstanding gable wall. As with 101, it contained small fragments of fractured limestone. No finds were recovered from 201.

The gable wall (Context 202) was composed of large slabs of limestone pavement that had been laid as drystone walling (Fig. 13). It was 2.3m in length, between 400mm and 630mm in width and reached a maximum height of 700mm. Its state of survival was remarkably good suggesting, perhaps, that at some point in the modern period it may have been rebuilt or at least stabilised (possibly as a shooting butt). Alternatively, disposal of lamb carcasses (see p. 26) could have led to top soil having been scooped out to create a hole against the gable wall. However, at its north-western corner the gable wall was clearly tied in to the surviving lower courses of the west elevation wall with an element of corbelling visible (Fig. 14).

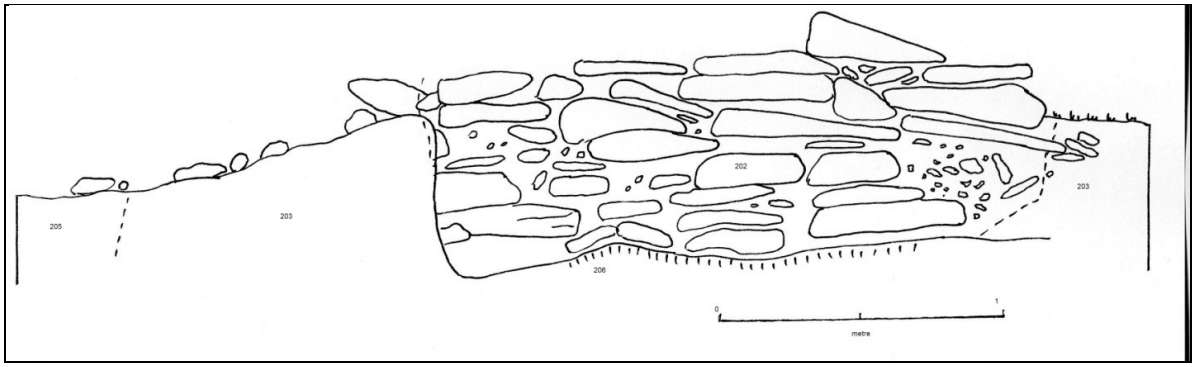

Fig. 13 Section along the face of Context 202, running NW (left) to SE (right) (Sectioned in the field by Chris Bonsall, Lynda Hutchins and Pat Ormerod)

This suggests that the bulk of the gable wall is original. It is considered significant that the constructional details of this wall corner were very similar to those at the south-western corner in Trench 1.

Outside the gable wall (202) and the building's interior was an area of wall tumble (Context 203) equating to Context 105, though 203 had far more small limestone pieces than 105. This context also included the banked stone behind the north gable wall (Fig. 15). Context 203 represents both degraded material from the upper part of the west elevation and stone slabs that had slipped off the wall since abandonment. One piece of chert was logged from 203.

Fig. 14 Trench 2 showing Contexts 202 (north gable wall), 203 (west wall) and 204 (interior layer)

Fig. 15 Context 203 (wall tumble and external stone banking)

Within the building trowelling revealed a subsoil layer of grey-brown and rather sticky clayey silt up to 140mm thick (Context 204). This contained some limestone pieces that had slumped from the walls. Three fragments of chert were logged here.

Beneath this layer was the actual floor surface of the northern part of the building (Context 206). This consisted of brown clayey sand that had been laid directly on top of natural palaeokarst limestone pavement. As in Trench 1, this material had been packed into the undulations to create a level floor surface. One fragment of chert was logged from within Context 206, and an environmental sample (ES2) was examined off-site by Arthur Batty and found to contain charcoal and a small spherule of volcanic glass.

Outside and to the west of the west wall of the building within Trench 2 was a narrow gully-like feature (Context 205) extending 2.4m in length and between 400mm and 1m in width. This was examined to determine whether or not it had been cut as an eaves- drip channel or to prevent surface runoff from entering the building. However, it proved not to have been a cut channel. No finds were retrieved from this context.

Trench 3

Drawing no. 1503

Trench 3 was laid out to investigate an isolated stone structure c. 200m south-east of the main excavation site. This was seen on the ground, prior to excavation, as a broadly T-shaped arrangement of relict wall lines with a short length running north-west to south-east abutting a longer curvilinear wall running from south-west to north-east. The aim in this

trench was to determine if the wall arrangement contained any internal structure that might have made it a building of some kind. Trench 3 extended 2.5m along the curvilinear wall line by 1.5m along the short wall line.

Four contexts were recorded in Trench 3 (Fig. 16). Context 301 was distinctly black and very crumbly clayey silt topsoil with a high fibrous content. It extended across the entire trench except where the wall was upstanding. Depth was very variable but shallow throughout, from 20mm to 80mm.

Fig. 16 Trench 3, on completion of excavation

Beneath 301 was a soil layer (Context 302) averaging 150mm in thickness and containing a high proportion of highly weathered limestone fragments from the original wall lines. In essence, soil characteristics were as in 301. In turn, 302 overlay palaeokarst limestone pavement bedrock (Context 303) which formed the base to the structure in Trench 3 (Fig. 17).

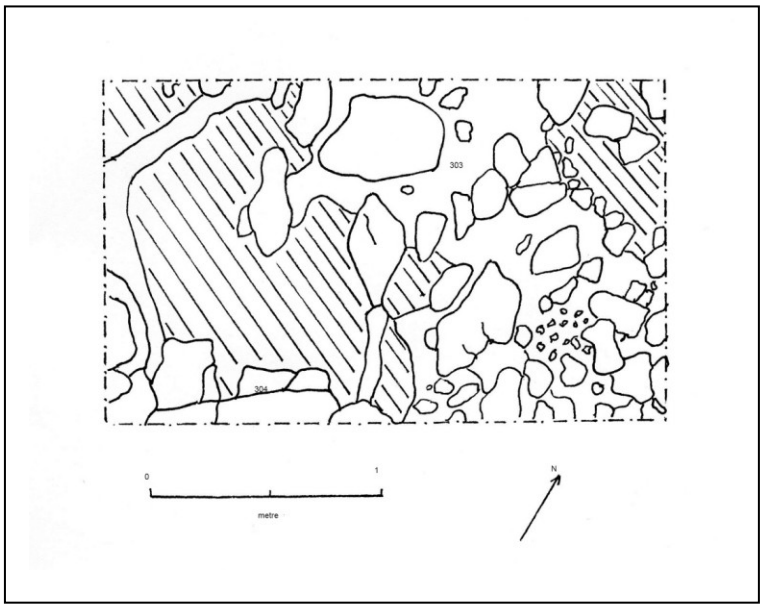

Fig. 17 Plan of Trench 3 showing Contexts 303 and 304. Shaded areas are palaeokarst bedrock (Planned in the field by Pat Ormerod and Philip Sugden)

The western and southern sections of the trench were taken up by the lower courses of the two surviving wall lines (Context 304), which were composed of slabs of limestone pavement laid as coursed drystone walling. Maximum width of the western wall was 750mm, though only one-third of this lay within the trench itself. The curving wall – at least within the trench – had been constructed in the same manner as in the main building excavated in Trenches 1 and 2, with an inner coursed face and an outer line composed of angular and small pieces of limestone banked up behind the inner wall face.

No finds were recovered from Trench 3.

The wider area

1. *The shallow depression*

Some 50m to the south-west of the building is a shallow depression with a diameter of c. 50m. Vegetation growth is noticeably different from the surrounding areas (see Appendix 6) as are hydrological characteristics. On one morning during the May excavation, after prolonged rainfall the night before, the depression contained five areas of standing water with a depth exceeding wellington-height. Two of these were especially large in surface area. By lunchtime, however, all the water had disappeared as if a plug had been pulled.

A line transect was set out across the depression, on an east-west alignment, and depth readings of the regolith were taken at twelve 4m-intervals (except for one point where the water was too deep) to gauge the profile of the depression (Fig. 18). Readings varied from 140mm to 590mm. At each survey point a soil sample was taken for laboratory analysis, which was undertaken at Malham Tarn Field Centre by the project supervisor. No significant variation in soil characteristics was noted: all twelve samples proved to be dark grey-brown clayey silt, very soft in texture. Each sample point was also logged by the total station.

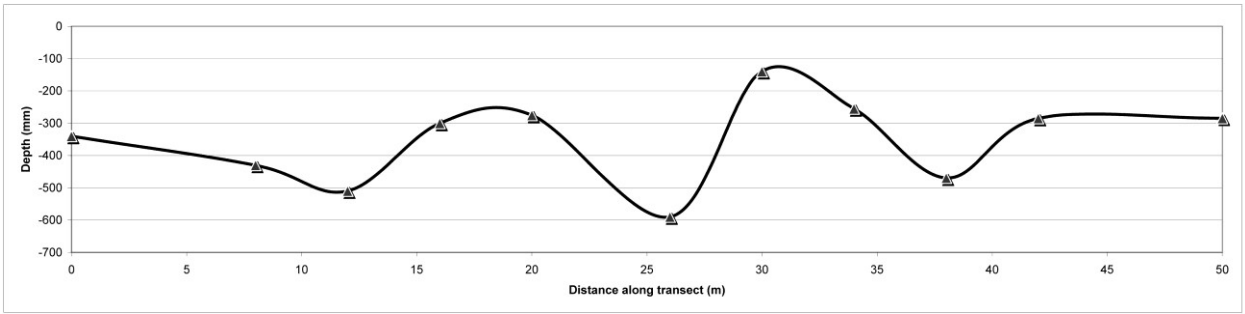

Fig. 18 Transect through the shallow wetland, showing the depth profile (Computer graphics John Asher)

Prior to the excavation phase (on 28 January 2011), this writer joined Dr Helen Shaw and Professor Ian Whyte, of Lancaster University's Lancaster Environment Centre, for a day's soil coring in Upper Pasture and Sulber Pasture for follow-up laboratory analysis of pollen content. Attempts to obtain a successful core from the depression proved fruitless, though a successful core was gained from Sulber Pasture some distance to the south-east (Appendix 7). However, it was possible to tentatively conclude that the depression had not been a wetland in the true sense of that term, nor was it an infilled doline (solution hollow).

The pollen record for Sulber Pasture indicates that, using the (as yet unconfirmed) radiocarbon curve for the nearest point on the diagram to the date of the excavated site (for dating see Section 12), at 210mm depth, the dominant vegetation type was heathland (almost 60 per cent of total species) while grasses and sedges accounted for c. 10 per cent each. The balance was made up of woody species – and this has relevance for interpreting the type of roof and walling materials used in the excavated building (below, Section 11, 'The roof') – with shrubs having c. 7 per cent and broadleaved trees c. 10 per cent. There is no reason to believe that the situation would have been any different in Upper Pasture – both are largely covered in limestone pavement and soil characteristics are broadly parallel. There is also no reason to believe that the situation would have significantly changed between the early medieval period when this building was in use and the presumed start point on the pollen diagram except that the climate would have become warmer as the Medieval Warm Period approached its climax, which may have led to more luxuriant growth compared with the earlier and cooler period. If this view is valid, tree cover and the quality of broadleaved timber would have been less than shown in the pollen diagram.

2. *The relict wall lines*

Around the perimeter of the depression, on the limestone pavement level 2m or so above its floor, are the discontinuous remains of a curvilinear stone wall – or, perhaps more accurately, a relict stone line (Fig. 19). If the various sections are added together, its total length is c. 160m. The wall line appears to be connected with the excavated building as one end starts on the knoll above the building and the other terminates c. 15m from its south-eastern corner. If they are coeval, the wall line may have been erected to enclose the depression either to corral stock within or to keep them out.

Fig. 19 Relict wall line

3. *The stone-built feature*

The stone-built structure (see Figure 8) that sits on a limestone edge, at SD77841 74151 c. 200m north-east of the excavation site, was surveyed by two team members. It appears from a distance to be a short length of very wide drystone wall but close examination shows it to

be what can only be called a carefully-built stack or pile of limestone, all derived from surface pavement, with no apparent function. In length it is 4.4m; width varies from 1.3m at the southern end to 3.4m at the north; and height averages 740mm (Fig. 20). In plan it appears as a broadly T-shaped structure, though the amount of fallen stone makes it difficult to be conclusive. Again, without invasive examination, it cannot be determined with any conviction but the stack may have been reworked from an existing prehistoric burial cairn: there is possible evidence underneath of an earlier circular feature.

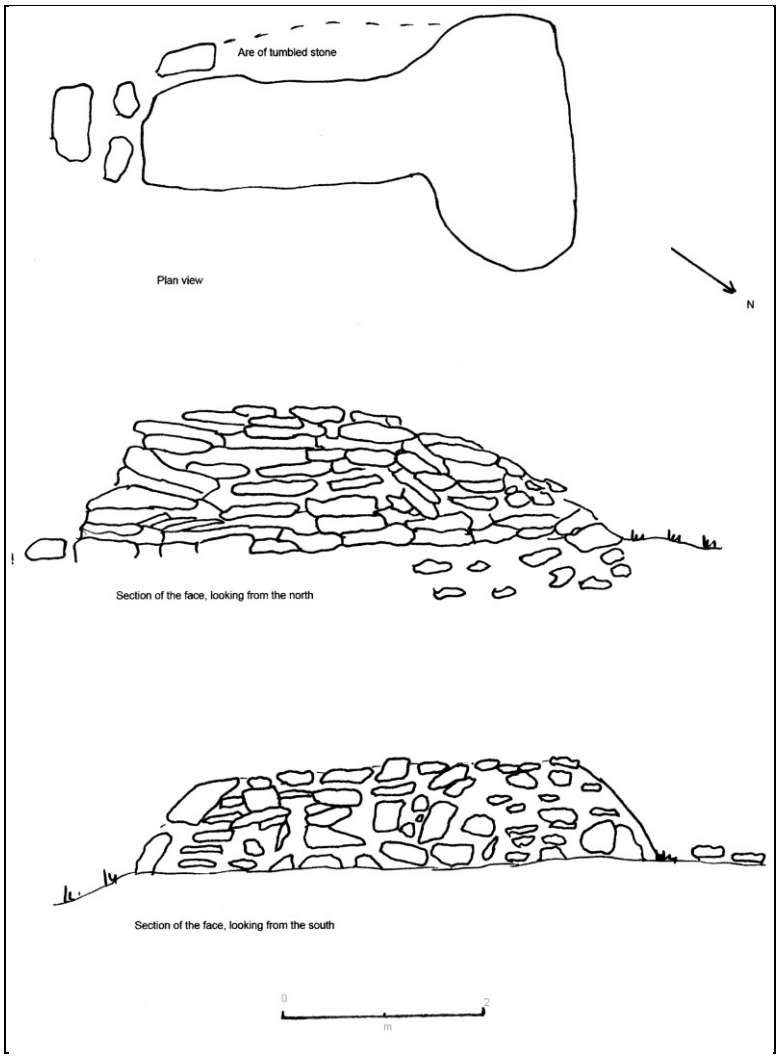

Fig. 20 Sketch plan-view and long-sections of the stone-built feature.
(Drawn in the field by Muriel and Frank Laver)

4. *Test pits*

Test pit 1 was cut to investigate a magnetic anomaly (82nT) in the results of the geophysical survey. The pit was dug to a depth of 300mm and, though nothing was recovered that could account for the anomaly, the opportunity was taken to note soil characteristics. A black, organic-rich sandy silt topsoil, 45mm thick, overlay subsoil composed of brown, friable and fine-grained sand which was interpreted as wind-blown loess deposits.

Further close examination of the magnetometer plot suggested that the first pit had been placed in the wrong position so Test pit 2 was cut nearby, also 1m by 1m. Soil

characteristics were as in Test pit 1. One piece of chert (sfn 205) was logged from the subsoil in addition to a sample of unidentified charcoal (sfn 206) found at a depth of 275mm below the turf line. This had clearly been responsible for the anomalous reading.

A third test pit was cut c.15m to the south-west of the building to investigate if the same soil type extended to the south side of the knoll. In fact it was noticeably different. The topsoil was the same black material as in Test pit 1 but it was much deeper, 245mm compared to 45mm in Test pit 1; that overlay subsoil 55mm thick which was grey, smooth and sticky clayey sand which in turn overlay a distinctly red-brown layer of equally sticky and smooth silty sand. These marked contrasts in soil characteristics reflect detailed nuances in hydrology and topography.

5. *Other ground features*

A walkover survey was undertaken within Upper Pasture during the excavation phase with the aim of making a preliminary note of potential archaeological features such as stone banks, cairns and enclosures (above, Section 4). Each was logged using a mapping-grade Magellan CX GPS with Pocket GIS software and mapped using Mobile Mapper Office, AutoCAD14 and Global Mapper software. The resultant plot is shown in Figure 7, which shows features provisionally logged during the project. However, the note of caution sounded in Section 3, regarding the disruption caused by large-scale extraction of rockery stone over many years, should be borne in mind.

9. Finds Report – non-lithics

A total of 109 small finds were logged from the site, as summarised in Table 1.

Table 1 Small finds

Category	Number logged
chert, natural	29
chert, worked	52
flint	2
charcoal	22
metal	1
burnt stone	1
volcanic glass	1
unidentified stone object	1
Total	**109**

Two samples (ES 1) of compacted soil were taken from Context 204 (a layer of subsoil and wall tumble above the floor level in the building) for laboratory examination by Group member Arthur Batty. The purpose of this was to seek environmental indicators. Wavy-edged elongate phytoliths (c. 15 microns long) of Cocksfoot (*Dactylis glomerata*), one of the most common grass species found growing today, proved to be the only indicator, though a chert flake, a fragment of unidentified charcoal and a small spherule of volcanic glass were also recovered.

A second environmental sample (ES 2), taken from Context 108 (the internal floor surface), was similarly examined and produced grass phytoliths, silica, unidentified seeds and plant matter, and unidentified charcoal.

A piece of burnt stone (sfn 174), with a 120mm long axis, was recovered from above the surface of Context 108. As this was the interior floor surface of the south cell of the building, it was initially thought that the burnt stone may have formed part of a hearth though further investigation showed that it was lying on loose material separating it from the actual floor surface. Whether it had once been part of a hearth, and had been displaced, could not be determined.

A bent piece of iron plating (sfn 103) was found within Context 105 (tumble from the wall). It is 100mm in total length with a maximum width of 520mm and a thickness of 30mm-40mm though it was encrusted with corroded material. It was deemed to have no historical significance, given its thinness and position close to the modern ground surface.

Further finds showed that the building had been used in the 1980s as a dumping ground for lamb carcasses though, fortunately, this had not compromised the archaeology unduly. It is probable that a tractor was backed up to the east elevation and the carcasses tipped into what was then a convenient hole. Large quantities of bone were removed as well as plastic ear tags from seventeen different animals.[1] Neither the bones nor the tags were formally logged.

The dominant non-lithic finds were samples of charcoal, of which 22 discrete samples were logged within the trenches with a further sample from Test pit 2. The species of six samples were not identified and a further three samples failed during laboratory examination, leaving thirteen that were capable of identification. Examination and preparation of samples for radiocarbon dating were undertaken by Dr Denise Druce, Environmental Project Officer for Oxford Archaeology North. Table 2 shows species composition.

Table 2 Species composition of identified charcoal samples

Sfn	Species	Context
141	ash	108
142	hazel	108
144	hawthorn-type	108
147	alder/hazel	108
148	hawthorn-type	108
149	ash	108
159	blackthorn/hawthorn-type	108
161	hazel	108
162	blackthorn-type	108
163	hazel	108
176	blackthorn/hawthorn-type	108
177	hazel	108
178	ash	108

[1] As a parallel, excavation of a shieling hut in Cumbria, in 1996, found a recent sheep burial within that structure (Hair and Newman 1999, 149).

All but three of the identified samples were smallwood and short-lived species making them suitable for radiocarbon dating, and sfn 144 and 161 were sent to the Scottish Universities Environmental Research Centre (SUERC) at East Kilbride – see below, Section 12, for dating results. The remaining samples were of ash (*Fraxinus*) which may have been small in diameter but its long-lived nature renders ash unsuitable for AMS dating.

The smallwood species – blackthorn-type (*Prunus* sp), hawthorn-type (*Crataegus* sp), alder (*Alnus* sp) and hazel (*Corylus avellana*) – are all types of wood that would have been suitable for making the framework of a thatched or turf roof, while the ash could have been utilised as supporting timbers, depending on how thick the wood was.

The distribution and significance of charcoal samples are discussed in Section 11.

Unidentified or failed samples were recovered from Contexts102 (sfn 185), 103 (sfn 197), 108 (sfn 150, 164 and 167), 112 (sfn 200), 115 (sfn 202, 204), and Test pit 2 (sfn 206).

10. Finds Report – lithics

Hannah Russ

1. *Introduction*

In total 54 pieces of worked flint and chert were recovered during the excavation of the remains of a stone structure at Upper Pasture undertaken by Ingleborough Archaeology Group (IAG) during the summer of 2011 (Table 3).

Table 3 Flint and chert recovered during excavations at Upper Pasture in 2011

Context	Chert			Flint			Total
	Core	Tool	Debitage/	Core	Tool	Debitage/	
South Cell							
101	0	0	1	0	0	0	1
104	0	2	15	0	0	1	18
105	2	4	12	0	0	1	19
108	0	2	5	0	0	0	7
109	0	0	1	0	0	0	1
110	0	0	2	0	0	0	2
North Cell							
203	0	0	1	0	0	0	1
204	0	0	4	0	0	0	4
206	0	0	1	0	0	0	1
TOTAL	2	8	42	0	0	2	**54**

The assemblage includes worked pieces, blanks and debitage resulting from knapping; from both core preparation and tool production. It should also be noted that several pieces of

chert that had not resulted from human activity were present in the assemblage. The natural pieces are not included in the analysis presented in this report, which only includes flint and chert that have been subjected to human modification. Natural pieces did not have any evidence for working such as bulb of percussion, re-touch or removal of flakes or blades. The term 'tool' includes any piece with morphological characteristics of any recognised tool type (for example, scraper, burin or microlith) and also any piece with re-touch (classified as miscellaneous re-touched flakes (MRF)). Unworked flint and chert include any piece (flake or blade) that has been removed from a core, flake or blade but not subjected to any further working. These can be split into two categories: those struck from cores (sometimes referred to as 'blanks'), which are usually larger in size; and those removed from flakes and blades in the process of tool production, which are smaller in size. A piece is identified as a core if one or more striking platforms, where removals have occurred, can be observed.

2. *Results*

The lithics assemblage is dominated by black chert of the type known to naturally occur in the Ingleborough area. In total 52 pieces of chert and two pieces of flint were recovered. The majority of the material was recovered from Contexts 104 and 105 which represent periods of wall tumble within the south cell of the structure. Only four chert pieces could be identified as specific tool forms: these consisted of three burins and one end scraper. In addition to these there were four pieces of chert with retouch that did not characterise any particular tool form (MRF) and two chert cores, one of which had two striking platforms. Only two pieces of flint were recovered, both light grey in colour and without cortex. Neither flint piece was worked or had been subjected to thermal alternation. One piece of flint was recovered from each of the Contexts 104 and 105, as mentioned previously; both of these are associated with wall tumble within the structure.

Overall the material comprises substantially sized pieces (Fig. 21, noting that the piece indicated by a circle is a medial fragment of what once was a bigger piece). Tool forms associated with Palaeolithic and Mesolithic tool kits are absent from the assemblage (for example microliths and points).

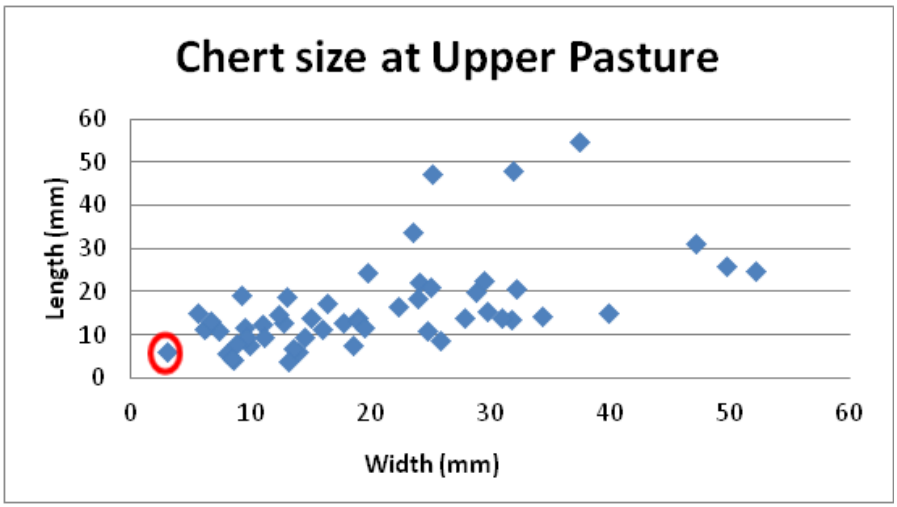

Fig. 21 Size of chert pieces at Upper Pasture. Circle indicates a medial fragment of a once larger piece (Hannah Russ)

3. *Discussion*

The overall characteristics of the assemblage suggest a Late Neolithic/Early Bronze Age date, much earlier than the structure from which they were recovered. One might ask how prehistoric tools came to be deposited within a much later structure in contexts stratigraphically above those associated with occupation of the structure. The most likely explanation for this depositional sequence is that the stone structure was once turf-roofed, and that the structure's builders used turves from the surrounding area which unknowingly contained the remains of human activity that had occurred in the area at a much earlier time. After abandonment, the roof turves and walls tumbled into the structure falling on top of the structure's occupation surface. This process produced the assemblage that was recovered mainly from Contexts 104 and 105. Material recovered from other contexts is likely to have resulted from the same process, but has been subjected to further post-depositional spatial modification leading to pieces being recovered in small numbers from additional contexts (Table 3). The assemblage size difference between the south and north cell suggests that the turves used to roof the south cell contained more lithics than those used to roof the north cell; this potentially indicates that the two cells were roofed using turves from different locations, possibly at different times.

4. *Summary*

The lithics recovered from the two-cell structure at Upper Pasture indicate that the use of this area dates from much earlier than the stone-built remains that were the focus of this excavation. It is likely that the flint and chert were moved from their original place of deposition as an unintentional constituent of building materials when the structure was constructed. However, it is unlikely that the building materials were sourced far from the structure location and, as such, the assemblage is an important source of evidence for later prehistoric occupation and landscape use and re-use in the area.

11. Discussion and Interpretation

1. *The Building*

The excavated structure proved to be a two-celled building aligned on a more or less north-north-east to south-south-west axis (Fig. 22).

The two cells were of unequal size: the north cell was 1.6m in length internally while the south was 3.45m internally. Internal width of both cells was 2.3m. Rounded off, this gives an internal usable surface area of 3.7m^2 for the smaller cell and 5m^2 for the larger. This is considerably smaller than the excavated sites discussed in Section 5. Bryant's Gill had an internal floor area of 50m^2, the larger building at Simy Folds was 47m^2 and the smaller 20m^2 (Coggins *et al.* 1983, 6), while the domestic building at Gauber had an internal floor area of 76m^2 (King 2004, 340). Clearly, the Upper Pasture building was tiny compared to the other examples, being eight times smaller than Gauber, five times smaller than the larger building at Simy Folds, and 5½ times smaller than the Bryant's Gill house, but only half the size of an excavated shieling in Crosedale Beck in the Howgill Fells near Sedbergh, at SD 6475 9395 (Hair and Newman 1999, 143). Small size in itself does not preclude use as an intermittently occupied dwelling: a Viking-period farmstead at Doarlish Cashen on the Isle of Man was only

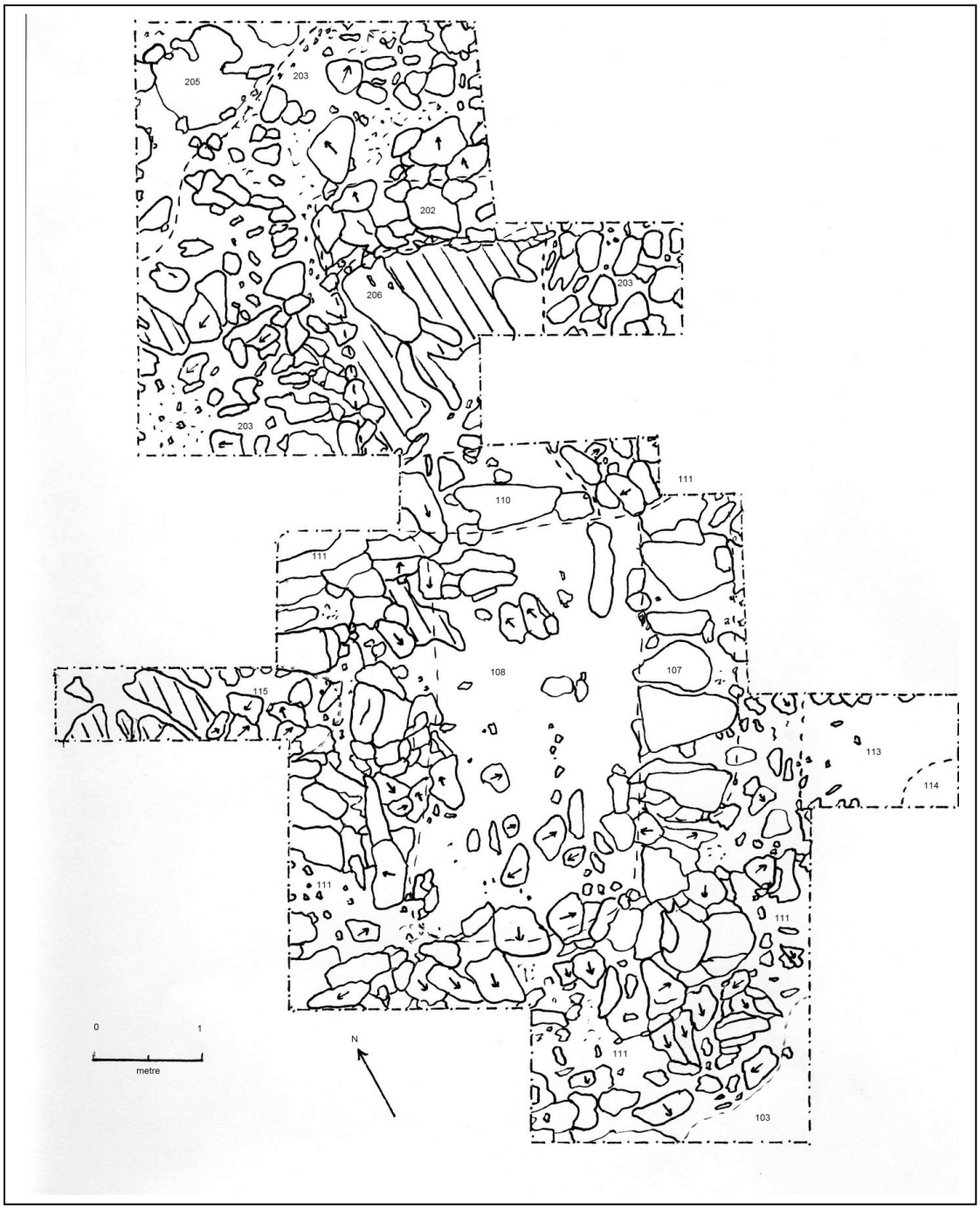

Fig. 22 Plan showing Trench 1 and Trench 2 combined.
Shaded areas are palaeokarst bedrock.

(Planned in the field by David Johnson)

21m^2 internally and excavation evidence suggested it had been in permanent occupancy (Gelling 1970). A small structure had the advantage of requiring fewer resources to build it, and it would have been easier to keep it warm.

The cells were separated by a dividing wall 650mm in width and 2.2m in length. The ground evidence showed that the divide had a stone-built foundation, but there was no evidence to suggest that it was stone-built for its full height. Indeed, the narrowness of the foundation will have precluded the latter. Evidence from a proven medieval building at Kingsdale Head, excavated by the Group in 2005 and 2007, confirmed that its dividing wall could not possibly have supported a full-height stone wall and hints of post settings within the foundations indicated that it was probably a timber divide set on a stone base (Johnson 2007, 90-95). Upper Pasture had no such post settings but that does not rule out there having been a timber – or wattle – divide. Excavation of a shieling hut in Crosedale concluded that its dividing wall had been constructed of turf on stone footings (Hair and Newman 1999, 145).

Individual wall lengths varied in detail. It was not possible to determine the original width of any of the walls as the inner coursed faces were backed by sloping stone banks, and post-abandonment slippage masked the original outer edges. What was definite was that each of the walls had been tied in to the others: they had been built as one constructional event. The south-west and north-west corners showed that an element of corbelling had been employed to tie the gable walls in to the west elevation. The east wall was too degraded to draw any conclusion in this respect.

A sample of tumble stones was measured to give an idea of what size of stone had been favoured by those who built the structure. Half had a long axis greater than 500mm and the rest were between 300mm and 500mm; average thickness was 25mm to 30mm. All had clearly been picked, or hacked, from extant limestone pavement.

Trench extension 1e was cut to enable examination of the relationship between the base of the west elevation and underlying bedrock, and to identify how the wall had been put together. The inner face consisted of coursed slabs of limestone pavement stone but there was no outer face. The slabs forming the upper part of the wall were, as one would expect, smaller in every dimension than those at the base. The rear part of the wall was banked up with stone as observed on the two gable ends. Stone of varying size was packed behind the facing stones though three slabs seem to have been deliberately laid parallel to each other at an angle of 50 degrees within the wall fill, facing inwards. They had not merely slumped from an upright or horizontal position as they were really earthfast; they had been set at the upper end of a gently sloping spur of limestone pavement bedrock. This angling of the slabs was interpreted as a deliberate chock to prevent the bulk of the wall slowly slipping down the bedrock into the building. A similar sloping arrangement was also seen within the wall at the south-eastern end of the east elevation.

As described earlier, much of the east elevation walling had been stripped out at some unknown point in the past, leaving eight substantial limestone slabs as a foundation course. Extension 1e did not pick up a similar situation in the west elevation but a desire to respect the building's structural integrity, by not dismantling any other sections of upstanding wall, meant that no conclusion could be drawn about the remaining sections of gable and west elevation walling.

Surviving wall heights varied considerably. The east elevation was only 220mm in height but this had survived only as the foundation course. The west elevation survives to a maximum height of 680mm, the south gable to 560mm but the north gable stands to a maximum height of 810mm above the internal floor surface. However, the possibility that the uppermost part of this gable wall had been rebuilt, or at least stabilised, in the modern era cannot be ruled out.

The way in which the walls in Trench 3 had been put together was identical to that seen in Trench 1 and 2 which leads to the tentative conclusion that the two structures were broadly contemporary.

2. *The original walls*

All that has survived of the walls are the foundation slabs on the east elevation and drystone coursed walling backed with stone banks on the other three sides, surviving to a maximum height of less than 1m. Whether or not the coursing extended to a greater height cannot be determined with absolute certainty but the probability is that they did not. A wall built without mortar (as this was) on a single skin cannot exceed more than 1m in height; it would simply be too unstable and unable to support the weight of a roof. It has to be assumed, therefore, that the extant stone walling was constructed as a lower course on which to bed a wall made of timber or turf, though the possibility that clay was used as a binding agent cannot be discounted as this would not have survived in the archaeological record. As stated above, no evidence of post settings was found which may rule out the former.

The form of the walls here contrasts with those at the Gauber site which were 1.85m thick with an inner face of limestone slabs and an outer of limestone boulders, the space between having been packed with limestone rubble (King 1978, 39). Such walls could easily have supported a much higher wall than their extrapolated height of c. 1.5m, and a substantial timber roof.

It has been asserted that ‘every peasant-house in England from the end of the Roman period ... until the twelfth or thirteenth century was built of either wood, turf or unbaked earth’ (Hurst 1971, 89). Archaeological evidence from elsewhere has noted the use of turf-built walls lined on the inner side with wattle hurdling but post settings were not apparent at this site; evidence of turf walls from across England is not common (Hurst 1971, 91). It is common, however, in Iceland where preserved medieval farm buildings have walls and roofs entirely made of turf. This point will be returned to in Section 13.

3. *The roof*

A building as small as this could easily have been roofed with materials derived from the local area, assuming that shrubs and broadleaved woodland in Upper Pasture followed the same pattern as in neighbouring Sulber Pasture in the medieval era where they accounted for c. 17 per cent of all species in the pollen record (above, Section 8, ‘The shallow depression’). Thirteen samples of charcoal retrieved from within the building were identified by species. All would have been suitable for making the framework of a roof with the ash and alder also ideal for making walling timbers. However, the pollen record demonstrates that woodland cover was very limited, from which one could extrapolate that large timbers were not exactly in plentiful supply. Wilkinson (2009, 21) has shown that in areas where timber was in short supply ‘insubstantial timbers’ were effectively used to support steeply-pitched

roofs, though it goes without saying that the roof design for the excavated site is a totally unknown quantity.

Excavation evidence strongly supports the hypothesis that the building was roofed on a timber framework. Sixteen of the charcoal samples were logged from the internal floor surface (Context 108) and a further sample was found within the wall tumble (Context 105); two were found just outside the wall in the south-east corner of the trench (in Contexts 102 and 103); and two were logged from Trench extension 1e (Contexts 112 and 115). All those recovered from Context 108 were impressed into the floor surface and all were sealed by subsoil deposits and by stone slabs that had slumped from the walls. They were also spread widely across the floor area. It is a given that none of these samples derived from superficial post-abandonment 'bush' fires. The charcoal can only have derived from burning of the roofing timbers at or at some point after the building's abandonment – this point will be returned to in Section 12.

It has been suggested elsewhere that early rectangular buildings with external rounded corners and squared internal corners would have had a hipped timber-frame roof (Hair and Newman 1999, 154), in other words all four faces of the roof sloped down to the wall tops with the end sections being triangular and the side faces trapezoidal. The building excavated had rounded external corners at the south-east and north-west; the south-west corner was not excavated and the north-east was too degraded. It also had squared internal corners to the north-west, south-west and south-east; again, the north-east configuration could not be ascertained. Consequently, it is conjectured that this building could well have had a hipped roof.

There is a growing corpus of evidence of the use of turf in medieval buildings, not least in Iceland where surviving houses have both roofs and walls of turf (Ólafsson and Ágústsson 2006; Hines 2009 passim), but also in the British Isles (Alexander and Atkinson 2011, 38-39). Wilkinson (2009, 16-17) has drawn attention to the use of turf as a building material from historic accounts though there is a paucity of actual ground evidence for this; while various writers have described the use of turf in roofs (see, for example, Mercer 1975, 38; Wilkinson 2009, 21; Griffiths 2010, 125; Hinton 2010, 97). Turf is known to provide excellent insulating properties which would have been a necessity in Ribblesdale's cool climatic conditions and, of course, peat and turves would have been at hand on the eastern slopes of Ingleborough and its outlying spurs.

4. *The floor*

The internal floor surface, in Trench 1 (Context 108) and Trench 2 (Context 206), was composed of compacted clayey sand, brown in colour, soft and pliable in texture owing to the element of clay within it. In both cells the floor material was stone-free, apart from wall tumble lying on its surface. In both cells the clayey sand had been used to pack and fill natural runnels within the palaeokarst pavement bedrock, and to create a level floor surface. No convincing evidence of a hearth was found and the fire-reddened sandstone, referred to earlier, was not found in a secure context and was not associated with any other similar stone despite high magnetic readings having been noted around the stone after its removal.

5. *Threshold*

The above average size of one of the foundation slabs (Context 107) on the east elevation was initially interpreted as a threshold slab forming a possible entry point to the building and this led to the cutting of Trench extension 1f (1.5m long by 1m wide), out from the putative doorway, to see if there was a cobbled or flagged surface providing a dry approach to the doorway. However, the extension proved sterile in this respect.

This does not rule out the possibility that it was the threshold and, indeed, there was definitely no other point where access could have been gained without climbing over a relatively high wall. Furthermore, the material within the extension beneath the subsoil layer, was distinctly different from the subsoil found within the building (Context 104): the latter was dark grey clayey silt while in the former this was underlain by olive brown silty clay (Context 113), apart from a small lens at an outer corner (Context 114) which was a much lighter sand. This difference in hue within Trench extension 1f could conceivably suggest that this discrete area had been treated differently to provide a dry approach.

6. *Eaves-drip channel*

The building nestled beneath a small knoll, the top of which is 2.2m above the internal floor surface. The slope is steep and it might be expected that a channel would have been cut between the foot of the slope and the west elevation of the building to divert surface runoff away from the walls. Otherwise, water ingress through the walls could have been a constant irritant. Prior to excavation there seemed to be a linear gully running between the foot of the knoll and the wall and early excavation led to this being designated Context 105, a possible eaves-drip or water-catching channel. However, as excavation progressed it became clear that the gully had formed over a natural runnel within the bedrock and the hypothesis that it had been deliberately cut was discarded.

7. *Function*

The small size and relative isolation of the building have clear implications for interpreting the function of the Upper Pasture site. The three other sites discussed earlier (Gauber, Simy Folds and Bryant's Gill) were farmsteads with attendant out-buildings and/or enclosures. They can probably all be described as permanently-occupied farmsteads. Upper Pasture, on the other hand, cannot have been permanently occupied and the strong probability is that it was a shieling hut which played a part in a seasonal pattern of transhumant stock farming. It is suggested here that this building would have been used as a shepherd's hut during the summer months when stock were grazed on the open fell pastures. The same conclusion was drawn for the Crosedale Beck site in the Howgill Fells which, though dated by pottery to the twelfth to fourteenth centuries, probably played a part in transhumant sheep management on estates belonging to Cockersand Abbey (Hair and Newman 1999, 156).

However, this is not to say that shielings, or 'scales', were only occupied in the summer months. The etymology of Winterscales farm, near Ribblehead, a name known from at least 1379, suggests it began its life as a shieling used in the winter months (Smith1961, 244).

The function of the structure in Trench 3 was not determined. One possibility is that it was either a bield wall, to provide shelter for stock against wet and windy weather, or that it was

used as an open stock fold with the long curving wall acting as a ‘driving wall’ for corralling stock. It was certainly not a building or an enclosed fold.

The relict wall surrounding the shallow basin – if it were coeval with the building – could have been a pound for housing stock overnight or for undertaking procedures such as shearing or milking.

12. Dating

1. *The charcoal*

Two samples of charcoal (sfn 144 and 161) recovered from the internal floor surface (Context 108) were sent for AMS radiocarbon dating to SUERC. Each of the samples was found impressed into the compacted soil floor surface and sealed in a secure stratigraphical context by wall tumble and subsoil deposits. Before detailing the dating results it would be useful to summarise the distribution of all the charcoal samples.

Over 20 samples were logged (Fig. 23; see Table 2) of which all but six came from this secure situation or from the interface of Context 108 and the subsoil above it (Context 104). The point has already been made that the charcoal most probably derived from (the accidental or deliberate) burning of roofing timbers after abandonment. Over time the structure slowly degraded and filled up with sediments burying and sealing the floor and charcoal. Three of the remaining samples can be plausibly explained: sfn 185 was found within a thin layer of subsoil (Context 102) in the west elevation wall, in Trench extension 1e; sfn 197 was logged within the small lens (Context 103) in extension 1f, again at no depth at all; and sfn 200 came from Context 112 in extension 1e which in reality was equivalent to Context 102, not at any significant depth. In all three cases the charcoal could easily have been moved vertically through the subsoil, or merely been covered with topsoil, by a combination of infiltration and worm activity.

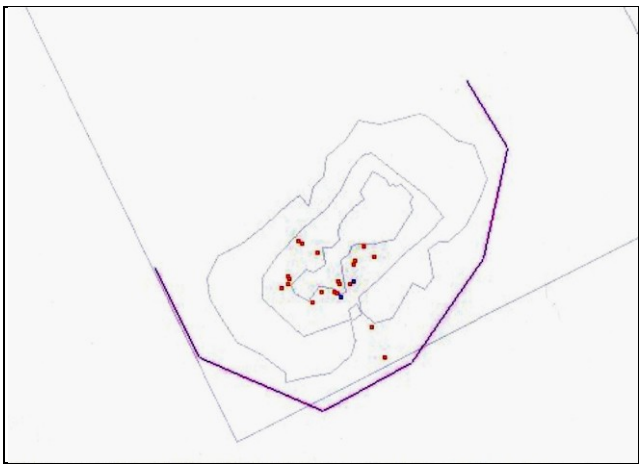

Fig. 23 Distribution of charcoal samples (red symbols) and flint (blue) superimposed on the outline of the building’s walls. North is to the top. (Computer graphics Jeff Price)

The remaining three are not so easily explained. One sample (sfn 206) was recovered at a depth of 275mm within Test pit 1, some distance from the building. Context 115 contained two samples (sfn 202 and 204). This was the base layer within Trench extension 1e, below the rear wall: the former was found at a depth of 460mm and the latter 510mm, well sealed by an amalgam of soil and stone. Unfortunately only one of these samples was identified (sfn 204, hawthorn-type) and therefore submitted for radiocarbon dating.

Sample sfn 204 returned a date of 4765±30BP. When calibrated, there is a 95.4 per cent probability that the sample falls within the period 3640-3384 calBC (SUERC-38457, GU26334), and a 91 per cent probability within the period 3640-3516cal BC, firmly within the early to middle Neolithic.

At first sight this dating result could be perceived as conflicting with the two early medieval dates, and it has been suggested that the third date could reflect a Neolithic origin for the site, if not the actual structure. Certainly, the presence of worked chert and flint lithics confirms that there was activity in the vicinity of the excavation site during the Neolithic/Bronze Age transition but this cannot be assumed to suggest a prehistoric origin for the building. Sfn 204 was recovered from below the rear wall and a date from beneath an extant feature does not necessarily have any direct relationship with that feature. Hypotheses have to be tested but it would not be valid to draw the conclusion that the Neolithic/Bronze Age date has any bearing on dating the building's life. True, the sample was directly under the wall but it is impossible to determine whether the surface under the wall was the same surface when the building was erected. It is more likely that its early medieval builders pared off the surface turf and soil that they had found to set their wall on. In addition, there were clear signs of mole activity within extension 1e which could have caused the charcoal to be relocated.

To return to the first two dates obtained, their uncalibrated ages fell within a span of only five years: sfn 144 returned a date of 1300±30 BP; sfn 161 a date of 1295±30 BP. When calibrated the following results were obtained:

Sfn 144 660CalAD – 780CalAD at 95.4 per cent probability. SUERC-35385 (GU-24504).

Sfn 161 660CalAD – 780CalAD at 95.4 per cent. SUERC-35384 (GU-24503).

Given that the two samples were removed from different parts of the floor within Trench 1, the coincidence of calibrated dates is encouraging. As two distinguished archaeologists have reminded us, there is an old adage in the profession that 'one date is no date' (Renfrew and Bahn 2008, 147; see also archserve). In the ideal world it is unacceptable to ascribe a particular period to a site with only one radiocarbon date. It could be a rogue date or the sample could have been a 'residual', not stratigraphically connected to the excavated site, or possibly contaminated during the recovery process. It is almost the worst-case scenario to have two widely conflicting dates – which is the correct one? Depending on funding, and availability of suitable samples, multiple dates should be sought. If – as here – both samples return identical calibrated dates, the conclusion must be beyond doubt. Felling, and burning, of the timbers happened somewhere between AD 660 and 780.

This begs a further question. A range of 120 years at that period in our history is inevitable but less than desired. If the felling occurred within the early decades (say AD 660-700), it would make this a remarkably early Anglo-Saxon-period (Anglian) site for the upland

western Dales. Irrefutable archaeological visibility from this period is lacking in the area, compared to lowland eastern Yorkshire (Loveluck 2003, 151), and the rate at which pre-Scandinavian population and settlement advanced into the heart of the uplands is currently in need of further research. The native British entity of Elmet, north-east of Leeds, fell under Northumbrian (Anglian) control in AD617 which would have opened up the valley of the Aire to generational migration up-valley (Wheldrake 2011), and it is doubtful that the native polity of Craven (*Cravescire*) could have been subject to Anglian advance prior to that. In fact, one view puts the annexation of Craven by the Anglian kingdom of Northumbria much later than that for Elmet, 'in the years before c. 660' (Wood, 1996, 20).

Examination of place-names along the Aire and Wharfe, outside the Yorkshire Dales National Park, points up a scarcity of *ham* or *worth* names – both regarded as early Anglo-Saxon forms – but a wealth of later *tun* and *leah* names. Indeed, *leah* names are generally assumed to post-date c. 730 (Gelling 1993, 198).

If, on the other hand, the Anglo-Saxon advance had been up the Ribble from the west, the same corollary applies. It is generally accepted that widespread 'English' settlement only occurred in the area known in early Norman times as *Inter ripam et mersam* – what is now Lancashire south of the Ribble – after defeat of the native Britons here by Northumbria in the Chester region c. 616 (Griffiths, 2010, 20). Penetration by settled groups into Upper Ribblesdale must have taken many decades. Along the Ribble valley, up to Settle, *tun* and *leah* place-names are common with only three early forms evident, paralleling the situation seen along the Aire and Wharfe.

Higham has stated that the pre-Anglo-Saxon entity of *Dunutinga*, centred on Dentdale, and which encompassed the Ingleborough massif, was granted to the Northumbrian Bishop Wilfrid (AD 634-709) in c. 677 (Higham 2007, 59-60). However, this does not prove – or even suggest – that there was a settled Anglian farming presence in the area in the immediate aftermath of that gift. It is important to distinguish between political control (effective or nominal) and actual settlement on the land.

Place-name and carved stone evidence of an early Anglian presence in Lower Wensleydale in the mid to late eighth century do add weight to Wheldrake's hypothesis discussed above, while early seventh-century (probable) grave goods are known from further up Wensleydale (White 2002, 47-48). If there was a definite settled Anglian presence in Wensleydale at that early date, it is quite feasible that there had been a pioneering move across the watershed into Upper Ribblesdale, either over Newby Head from Widdale or through Langstrothdale. However, an alternative hypothesis is proffered in the Conclusion (below, Section 13).

A two-celled structure to the north-east of Malham Tarn (SD897 674) was excavated by Arthur Raistrick in the 1950s (Raistrick and Holmes 1961, 18). He defined it as a building 4.6m by 2.8m internally with substantial double-skin limestone-built walls and 'two slender partition walls' separating the two cells. The floor was composed of limestone pavement levelled off with stones and marl. On the basis of a 'finely cast bronze circular brooch-like head, with pierced Celtic interlacing pattern ...' he ascribed the building as the house or cell of an Anglian priest or hermit 'probably of seventh century date', though some medieval pottery was also found within. A small hearth was revealed but, given how long ago the excavation took place, no dating of charcoal was possible. If this interpretation is valid, evidence of an early Anglo-Saxon presence within the western Dales is not new.

The AMS dating of the Upper Pasture site gave a probability of 46.2 per cent that sample 144 derived from the period AD 665 to 715, and of 44.2 per cent that sample 161 fell within AD 670 to 715. This leads to a 'glass half full/half empty' conundrum: there is more or less a fifty-fifty chance that the dates indicate a late seventh-century provenance.

At the other end of the date spectrum, sfn 144 had a probability of only 22 per cent and sfn 161 of only 24 per cent of falling within the decades AD 740 to 780. Thus, one could conclude that the felling did *not* happen in the mid to late eighth century. If it had, though, it is most likely that the site would indeed have been Anglian.

Wherever the real-time dates fell, it can be said with conviction that they do not give a definitive date when the building was erected or when exactly it was given up never to be used again: there is no possibility of defining the relationship between abandonment and burning. On the one hand the roof could have been deliberately fired as an act of closure on or very soon after abandonment; on the other hand the building could have been left to slowly decay in nature's own time and could have burned down in a natural 'bush' fire long after abandonment, which itself may have resulted from further climatic deterioration making activity here unsustainable.

What the two dates give us is a *terminus ante quem*, a time before which the building was abandoned: in short, it cannot have been in use after AD 780.

2. *The chert*

As explained in the lithics report (above, Section 10), the assemblage was noted as being typical of the Late Neolithic/Early Bronze Age transition, and was presumed to have been unknowingly contained within turves used as roofing and/or walling material for the building. As the building decayed the lithics were released to fall either within the building or along its wall lines (Fig. 24). This hypothesis is supported by the fact that, for example, four chert pieces were logged within soil deposits at a position 100mm or 110mm *above* stone slabs that had clearly tumbled from the inner wall face of the building so their final resting position was clearly achieved long after abandonment. Furthermore, one chert core (sfn 207) was recovered during backfilling from within a turf lining the spoilheap and another (sfn 208) was found adjacent to the turf at the base of the spoilheap: both had been unknowingly dug out during de-turfing and transferred to the spoilheap without the chert falling out of the turf slabs. This could so easily have happened when the building was first erected.

Fig. 24 Distribution of chert superimposed on the outline of the building's walls. North is to the top

(Computer graphics Jeff Price)

The lithics were not in any way coeval with occupation of the structure, but their presence does point up the likelihood of activity in the general vicinity of the building during the Neolithic/Bronze Age transition.

13. Conclusion

As described earlier (above, Section 3), earthwork settlements in Upper Ribblesdale have been characterised as Romano-British sites though on no definitive archaeological basis. They may well be of this period but the early medieval dates obtained for the Upper Pasture site point up the need for a reassessment of sites within the Ingleborough area. The morphology of the excavated site is very different from many of them: this is rectangular and not associated with the small enclosures and pounds that suggest developing organic growth seen in many of the others, but the possibility that some other sites are also post-Roman cannot – and must not – be discounted. Peter Topping, of English Heritage, has recently gone on record saying that many upland archaeological sites are 'written off as Romano-British' when they are in reality early or high medieval (Topping 2011); and Newman (2006, 97) has highlighted the reality that few early medieval sites, at least in the North West, have been radiocarbon dated, with many HERs defining potential sites as Romano-British or 'unknown'. Furthermore, two decades ago Roberts powerfully made the point that many of the sites on the limestone uplands of Westmorland that were 'formerly interpreted as Romano-British' through 'unsubstantiated attributions' must now be 'carefully re-evaluated in the context of the medieval and post-medieval landscapes', particularly so in the Smardale and Waitby areas which were the focus of his research (Roberts 1993, 433-34).

A similar point has been made more recently by Newman (2006, 93) who has drawn attention to the contribution of palaeoecological analysis to archaeological investigations of sites across the North West of England which are demonstrating a much more extensive picture of an early medieval presence than had hitherto been understood.

O'Sullivan (1985, 21) was of a similar mind in quoting Simy Folds and Fortress Dike (west of Ripon), both of which produced early medieval, pre-Scandinavian, radiocarbon dates for what had previously been assumed to be exclusively Iron Age or Romano-British. In actuality early Anglo-Saxon-period agricultural activity, dated to AD 630±90, had more or less wiped out some evidence of earlier occupance of the Fortress Dike enclosure (Tinsley and Smith 1974, 32).

Perhaps Upper Ribblesdale contains more ground evidence of activity during the period between the departure of one set of overlords of this country (the Romans) and the arrival of another (the Normans) than has been hitherto imagined.

Prima facie evidence allows the excavated building to be convincingly ascribed to the early medieval period by means of the two identical radiocarbon dates from a sealed horizon, and a number of elements of the building strongly point to its having been a shieling hut. The isolated situation, the altitude at which it lies, the lack of associated enclosures, and the small size and crudity of the actual structure, are all typical of shielings from that era. In his seminal book, Angus Winchester (2000, 84) wrote that such features 'are attested in almost every part of upland Britain from the early medieval period', as transhumant stock

management was an integral and essential component of the colonisation of upland regions at that time (Silvester 2010, 152). In brief, upland areas were characterised by seasonal variations in grazing regimes: stock were housed or corralled close to the farmsteads during the winter months when upland pastures could not provide the requisite quantity or quality of feed. However, livestock were driven up to higher pastures for the summer months accompanied by some family members who slept in basic huts. This seasonal movement was a form of transhumance, and the summer 'settlement' was the shieling, consisting of a hut (or occasionally huts) and basic overnight stock pounds.

According to Winchester (2000, 90-91), shielings tend to be characterised by single-cell buildings, often no more than 'a mile or two' from the permanent farmstead they were associated with; while Lambert *et al.* (1996, 59) estimated the distance as being typically 2-3km 'at the most'. The immediate question raised for Upper Pasture is where the parent farmstead was sited: this remains an unknown quantity. It is possible that some of the monuments recorded on the HER (see Figure 6), at the eastern side of the area shown on the map, *could* have been connected with the parent farmstead, though it is equally possible that it was in the Ribble valley below, around Selside or South House.

A shieling site at Powsons in the Lune valley north of Low Borrowbridge (NY6132 0234) was excavated in 1991 (Lambert *et al*. 1996, passim). There are several parallels with the Upper Pasture site as well as direct contrasts. The Powsons hut measured 8.5m in length by 4m to 4.8m in width, which fits within Ramm's (1970) average size of 6m to 9.75m by 3m to 4.8m. Compared to these, Upper Pasture's 5.7m and 2.3m respectively put it just – but not significantly – below Ramm's lower limits. Powsons had drystone walls surviving to three courses high and a large flat stone threshold slab at the east end of one wall (very unusual in Ramm's total sample of c. 100 sites): the putative threshold at Upper Pasture was of a similar form and in the east elevation wall. Powsons, like Upper Pasture, had a probable internal dividing partition. The former had a possible hearth stone setting though no evidence of burning was found. Neither produced any dateable coeval artefacts. Powsons was floored with an 8mm-thick clay loam occupation layer sealing stone slabs beneath, providing a further parallel with Upper Pasture. It was likewise associated with a relict enclosure wall. As was shown above, there are also parallels with the excavated shieling hut in Crosedale.

Whereas the Upper Pasture hut contained some worked chert (and two pieces of flint), three pieces of worked flint were logged in the Powsons hut: these were interpreted as the result of surface hillwash.

Two further issues are raised by the dating results, especially if the AD 660 end is the true one. As noted above, were this to be a late seventh-century site, this would put it very early indeed in the known (and scant) corpus of Pennine Anglo-Saxon-period sites. Was it, perhaps, not an Anglo-Saxon site at all but a late native British survival? This same question could be asked of the Bryant's Gill farmstead: though it has the superficial appearance of having been a Viking-period site, radiocarbon dates place it at AD 700±80 suggesting loose contemporaneity with Upper Pasture. That such a hypothesis cannot be rejected out of hand is supported by the grant of estates at Cartmel, in south Cumbria, by King Ecgfrith of Northumbria, who ruled from 670-85, to St Cuthbert (Potts 1994, 63). The grant stated '*and all the Britons with it*' (my emphasis) which confirms a surviving native population in that area in the late seventh century.

The second potential conundrum concerns the climatic situation in the early medieval period. It has been suggested that there was a downturn in climate in the very early post-Roman era with re-warming only occurring after c. AD 550 or 850 (sources disagree), that winters were colder than the long-term mean and summers slightly above the mean but more subject to storms after the sixth century (Lamb 1965; Nielsen 2005). This assumed downturn has been used as a proxy for driving population retreat from upland sites at that time, though a contrary view disputes the very notion of retreat and, regardless of what might have happened to climate locally, refutes the hypothesis that transhumant groups would have been adversely affected by deteriorating weather conditions (Tipping, 2002, 19-20). After all, they did *live* in the uplands.

As Christopher Loveluck (2003, 170) so presciently commented, there is a real need for further serious Anglo-Saxon- and Scandinavian-period research utilising analytical and data-based techniques, in his words incorporating the 'work of local archaeological societies'. The late Richard Hall (2003, 177) wrote of the dearth of excavated sites in Yorkshire from the pre-Norman era. Very recent excavation work on a presumed burial mound in Upper Wharfedale has produced human bone dated to the late seventh century, and in 2011 an Anglo-Saxon-period spearhead was found by a metal detectorist near Scargill House south of Kettlewell, though clearly not from a secure archaeological context. An Anglo- Saxon axe head was also found in recent years near Ribblehead, again not in a secure archaeological context.

This project, firmly grounded on specific research questions and targeted excavation, has made a small contribution to understanding what was happening in the Dales in the early medieval period.

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Appendix 1 Personnel

Site supervisor	Dr David Johnson
Site surveyor	Jeff Price
Site photographer	Chris Bonsall
Excavation team	John Asher Sandra Bonsall Peter Gallagher David Gibson Sheila Gordon Lynda Hutchins Chris Judge Mike Kingsbury Frank Laver Muriel Laver Pat Ormerod Phil Robinson Helen Sergeant Philip Sugden Martin Wynrow
Report proof reader	Jill Sykes

Appendix 2 Harris Matrix

Trench 1

101	102	114	topsoil
	↓		
	103		subsoil lens
	↓		
	104		upper layer above floor
	↓		
	106		lower layer above floor
	↓		
	105	109	wall tumble
	↓		
	108		floor surface
	↓		
	110		base of internal dividing wall
	↓		
	111		external walls
	↓		
	107		foundation of east wall
	↓		
	112		interior face of west wall
	↓		
	115		base of west wall
	↓		
	113		surface layer outside building

Trench 2

201	topsoil
↓	
204	wall tumble within building
↓	
203	external banking to east wall
↓	
202	inner face of upstanding north gable wall
↓	
206	floor surface
↓	
207	bedrock

Trench 3

301	topsoil
↓	
302	weathered stone layer
↓	
304	relict wall
↓	
303	bedrock

Appendix 3 Finds Database

a. General

Sfn	Context	Quantity	Material	Description
100	101	1	chert	
101	101	1	?	white substance
102	105	1	chert	
103	105	1	metal	corroded, bent iron plate
104	105	1	chert	
105	204	1	chert	
106	104	1	chert	
107	105	1	chert	
108	105	1	chert	
109	105	1	chert	
110	105	1	chert	
111	105	1	flint	
112	105	1	chert	
113	104	1	chert	
114	105	1	chert	
115	105	1	chert	
116	104	1	chert	
117	204	1	chert	
118	204	1	chert	
119	204	1	chert	
120	104	1	chert	
121	105	1	chert	
122	104	1	chert	
123	104	1	chert	
124	203	1	chert	
125	206	1	chert	
126	104	1	chert	
127	104	1	chert	
128	104	1	chert	
129	104	1	chert	
130	104	1	chert	
131	104	1	chert	natural
132	108	1	chert	
133	108	1	chert	
134	105	1	chert	
135	104	1	chert	
136	104	1	flint	
137	105	1	chert	
138	105	1	chert	

Sfn	Context	Quantity	Material	Description
139	105	1	chert	natural
140	105	1	chert	
141	108	1	charcoal	ash
142	108	1	charcoal	hazel
143	108	1	chert	
144	108	1	charcoal	hawthorn-type. AMS dated
145	105	1	chert	
146	105	1	chert	natural
147	108	1	charcoal	alder/hazel
148	108	1	charcoal	hawthorn-type
149	108	1	charcoal	ash
150	108	1	charcoal	failed sample
151	105	1	chert	
152	104	1	chert	
153	104	1	chert	
154	104	1	chert	natural
155	105	1	chert	
156	104	1	chert	natural
157	104	1	chert	
158	104	1	chert	
159	108	1	charcoal	blackthorn/hawthorn-type
160	108	1	chert	
161	108	1	charcoal	hazel. AMS dated
162	108	1	charcoal	blackthorn-type
163	108	1	charcoal	hazel
164	108	1	charcoal	failed sample
165	108	1	chert	
166	108	1	chert	
167	108	1	charcoal	failed sample
168	105	1	other	possible limestone piece
169	109	1	chert	
170	110	1	chert	
171	110	1	chert	
172	104	1	chert	
173	104	1	chert	natural
174	108	1	stone	burnt sandstone piece
175	108	1	chert	
176	108	1	charcoal	blackthorn/ hawthorn-type

Sfn	Context	Quantity	Material	Description
177	108	1	charcoal	hazel
178	108	1	charcoal	ash
179	206	1	glass	spherule of volcanic glass
180	102, ext.f	1	chert	natural
181	102, ext.f	1	chert	natural
182	102, ext.f	1	chert	natural
183	105, ext.e	1	chert	natural
184	112, ext.e	1	chert	natural
185	102, ext.f	1	charcoal	not identified
186	105, ext.e	1	chert	natural
187	105, ext.e	1	chert	natural
188	102, ext.f	2	chert	natural
189	102, ext.f	1	chert	natural
190	102, ext.f	1	chert	natural
191	103, ext.f	1	chert	natural
192	102, ext.f	1	chert	natural
193	112,ext.e	1	chert	natural
194	103, ext.f	1	chert	natural
195	112, ext.e	1	chert	natural
196	103, ext.f	1	chert	natural
197	103, ext.f	1	charcoal	not identified
198	112, ext.e	1	chert	natural
199	113, ext.e	1	chert	natural
200	112	1	charcoal	not identified
201	off site	1	chert	natural
202	115	1	charcoal	not identified
203	105	1	chert	natural
204	115	1	charcoal	not identified
205	test pit 2	1	chert	natural
206	test pit 2	1	charcoal	not identified
207	spoil heap	1	chert	natural
208	spoil heap	1	chert	natural

b. Lithics

Sfn	Context	Date	Material	Techno-logy	Portion	Tool	Length	Width	Depth	TA	Cortex	Colour	Comments
100	101	14/5/11	Chert	Flake	Whole		49.7	25.8	11.8	0	0	Black	
102	105	15/5/11	Chert	Flake	Whole		16	11.3	2.9	0	0	Black	
104	105	15/5/11	Chert	Core			37.4	54.7	38.1	0	2	Black	
105	204	15/5/11	Chert	Blade	Medial		25.9	8.9	2.5	0	0	Black	
106	104	17/5/11	Chert	Flake	Whole		19.8	24.6	7	0	0	Black	
107	105	17/5/11	Chert	Flake	Whole		9.9	7.8	5.7	0	0	Black	
108	105	17/5/11	Chert	Flake	Distal		16.4	17.5	6.9	0	0	Black	
109	105	17/5/11	Chert	Flake	Whole		47.1	31.4	9.8	0	0	Black	
110	105	17/5/11	Chert	Blade	Whole	MRF	34.4	14.3	5.7	0	0	Black	Partial retouch on one lateral edge
111	105	17/5/11	Flint	Flake	Whole		9.5	11.7	2.4	0	0	light grey	
112	105	17/5/11	Chert	Flake	Whole	MRF	19	14.1	7.2	0	0	Black	
113	104	18/5/11	Chert	Flake	Whole		6.3	11.8	4.1	0	0	Black	
114	105	18/5/11	Chert	Blade	Whole		14	6.3	3.1	0	1	Black	
115	105	18/5/11	Chert	Blade	Whole		31.8	13.7	8.2	0	1	Black	
116	104	18/5/11	Chert	Flake	Whole		29.8	15.5	4.5	0	0	Black	
117	204	18/5/11	Chert	Blade	Whole		24.7	11.1	3.2	0	0	Black	
118	204	18/5/11	Chert	Flake	Whole		13	19	1.9	0	0	Black	
119	204	18/5/11	Chert	Flake	Medial		3	6.2	1.5	0	0	Black	
120	104	19/5/11	Chert	Flake	Medial		11	12.6	3.2	0	0	Black	
121	105	19/5/11	Chert	Flake	Whole		29.5	22.7	9.7	0	0	Black	
122	104	19/5/11	Chert	Flake	Medial		17.7	12.7	1.6	0	0	Black	
123	104	19/5/11	Chert	Flake	Medial		19	13.4	2	0	0	Black	
124	203	19/5/11	Chert	Blade	Whole		52.2	24.7	10.2	0	1	Black	
125	206	19/5/11	Chert	Flake	Whole		13.5	7	1	0	0	Black	
126	104	19/5/11	Chert	Blade	Whole		30.9	14	3.3	0	1	Black	
127	104	19/5/11	Chert	Flake	Proximal		19.5	11.6	3.4	0	0	Black	
128	104	19/5/11	Chert	Flake	Whole		8.6	4.2	2.4	0	0	Black	
129	104	19/5/11	Chert	Flake	Distal		11.1	9.6	1.2	0	0	Black	
130	104	19/5/11	Chert	Flake	Whole		7.3	11.1	2	0	0	Black	
132	108	20/5/11	Chert	Flake	Distal		6.1	11.3	1.1	0	0	Black	
133	108	20/5/11	Chert	Flake	Distal		12.7	12.8	2.3	0	0	Black	
134	105	20/5/11	Chert	Flake	Medial		6.7	13.3	1.8	0	0	Black	
135	104	20/5/11	Chert	Flake	Proximal		14.5	9.5	1.9	0	0	Black	
136	104	20/5/11	Flint	Flake	Whole		22.3	16.5	3	0	0	light grey	
137	105	20/5/11	Chert	Flake	Distal		5.6	15.1	1.9	0	0	Black	
138	105	20/5/11	Chert	Flake	Medial	MRF	8	5.6	1.4	0	1	Black	retouch on one edge
140	105	20/5/11	Chert	Blade	Whole		18.6	7.6	3.9	0	1	Black	
143	108	20/5/11	Chert	Flake	Proximal	Burin, and some retouch to lateral edges	23.5	33.7	5.4	0	0	Black	
145	105	20/5/11	Chert	Flake	Whole		32.2	20.6	9.9	0	2	Black	
151	105	22/5/11	Chert	Core		two platforms	25.1	47.3	13.9	0	1	Black	
152	104	24/5/11	Chert	Blade	Whole	Burin	39.8	15.3	8.6	0	1	Black	
153	104	24/5/11	Chert	Flake	Whole		9.7	9.6	2.5	0	0	Black	

Sfn	Context	Date	Material	Techno-logy	Portion	Tool	Length	Width	Depth	TA	Cortex	Colour	Comments
154	104	24/5/11	Chert	Blade	Whole	Very fine retouch/edge wear on right lateral edge of the ventral surface	13.1	4	1.8	0	0	Black	
155	105	24/5/11	Chert	Flake	Proximal	End scraper	15	14	3.3	0	0	Black	
157	104	24/5/11	Chert	Flake	Distal		24.1	22.4	6.6	0	0	Black	
158	105	24/5/11	Chert	Flake	Whole		9.2	19.1	3.8	0	0	Black	
160	108	25/5/11	Chert	Flake	Proximal	Burin	25	21.2	7.2	0	0	Black	
165	108	25/5/11	Chert	Flake	Whole		8.9	8	1.2	0	0	Black	
166	108	25/5/11	Chert	Flake	Whole		23.9	18.5	5.1	0	0	Black	
169	109	25/5/11	Chert	Flake	Distal		12.4	14.9	3.4	0	0	Black	
170	110	27/5/11	Chert	Flake	Distal		31.9	48.2	18.4	0	0	Black	
171	110	27/5/11	Chert	Flake	Whole		27.8	14.1	2.9	0	0	Black	
172	104	27/5/11	Chert	Flake	Whole		28.8	20.1	5.9	0	0	Black	
175	108	27/5/11	Chert	Flake	Whole		8.4	4.5	2.1	0	1	Black	

Appendix 4 Photographic Database

Compiled by Chris Bonsall
Note: this database includes all photographs stored in the project archive.

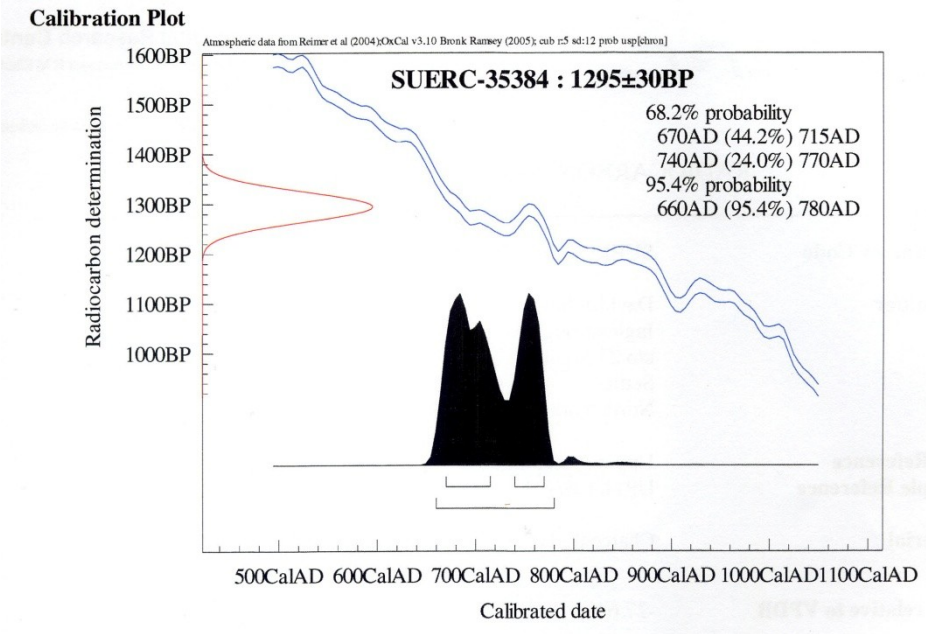
Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
UP (1)	5/5/10	10.45	Interior	Pre-excavation		NE	Cloudy
UP (2)	6/5/10	10.45	Interior	Pre-excavation		N	Cloudy
UP (3)	7/5/10	10.50	Interior	Pre-excavation		S	Cloudy
UP (4)	8/5/10	10.55	Interior	Pre-excavation		SE	Cloudy
UP (5)	9/5/10	10.55	N Gable interior	Pre-excavation		NNE	Cloudy
UP (6)	10/5/10	10.55	S Gable exterior	Pre-excavation		NNE	Cloudy
UP (7)	11/5/10	10.58	S Gable interior	Pre-excavation		SSW	Cloudy
UP (8)	12/5/10	10.58	S Gable interior	Pre-excavation		SSW	Cloudy
UP (9)	13/5/10	11.00	N Gable linear	Pre-excavation		NNW	Cloudy
UP (10)	14/5/11	11.00	N Gable exterior	Pre-excavation		SW	Cloudy
UP (11)	14/5/11	11.32	Trench 1	De-turfed	101	NE	Dry & Bright
UP (12)	14/5/11	11.35	Trench 1	De-turfed	101	SE	Dry & Bright
UP (13)	14/5/11	11.40	Trench 1	De-turfed	101	SW	Dry & Bright
UP (14)	14/5/11	11.42	Trench 1	De-turfed	101	NW	Dry & Bright
UP (15)	14/5/11	11.45	Trench 1 & 2	T1 de-turfed T2 turfed	101	NE	Dry & Bright
UP (16)	14/5/11	11.47	Trench 2	Before de-turfing		NE	Dry & Bright
UP (17)	14/5/11	11.49	Trench 2	Before de-turfing		SE	Dry & Bright
UP (18)	14/5/11	11.50	Trench 2	Before de-turfing		SW	Dry & Bright
UP (19)	14/5/11	11.51	Trench 2	Before de-turfing		NW	Dry & Bright
UP (20)	14/5/11	15.35	Trench 1	1st clean	101 102 105	NE	Dry & Bright
UP (21)	14/5/11	15.36	Trench 1	1st clean	101 102 105	SE	Dry & Bright
UP (22)	14/5/11	15.37	Trench 1	1st clean	101 102 105	SW	Dry & Bright
UP (23)	14/5/11	15.38	Trench 1	1st clean	101 102 105	NW	Dry & Bright
UP (24)	14/5/11	15.39	Trench 2	De-turfed	201 202 203 204 205	NE	Dry & Bright
UP (25)	14/5/11	15.40	Trench 2	De-turfed	201 202 203 204 205	SE	Dry & Bright
UP (26)	14/5/11	15.41	Trench 2	De-turfed	201 202 203 204 205	SW	Dry & Bright
UP (27)	14/5/11	15.42	Trench 2	De-turfed	201 202 203 204 205	NW	Dry & Bright
UP (28)	17/5/11	10.45	Trench 1	2nd Clean	103 104 105	NE	Wet & Cloudy
UP (29)	17/5/11	10.45	Trench 1	2nd Clean	103 104 105	SE	Wet & Cloudy
UP (30)	17/5/11	10.45	Trench 1	2nd Clean	103 104 105	SW	Wet & Cloudy
UP (31)	17/5/11	10.45	Trench 1	2nd Clean	103 104 105	NW	Wet & Cloudy
UP (32)	17/5/11	11.10	Trench 2	1st clean - detail	202 204	NW	Wet & Cloudy
UP (33)	17/5/11	11.10	Trench 2	1st clean - detail	202 204	N	Wet & Cloudy
UP (34)	18/5/11	10.15	Stone Structure 200m to NE			S	Sunny
UP (35)	18/5/11	10.15	Stone Structure 200m to NE			E	Sunny
UP (36)	18/5/11	10.15	Stone Structure 200m to NE			N	Sunny
UP (37)	18/5/11	10.15	Stone Structure 200m to NE			W	Sunny
UP (38)	18/5/11	11.40	Trackway 100m to SW	cut through limestone pavement		W	Sunny
UP (39)	18/5/11	11.40	Trackway 100m to SW	cut through limestone pavement		SW	Sunny
UP (40)	18/5/11	12.30	Trench 1	3rd Clean	103 104 105 106	NE	Sunny
UP (41)	18/5/11	12.30	Trench 1	3rd Clean	103 104 105 106	SE	Sunny
UP (42)	18/5/11	12.30	Trench 1	3rd Clean	103 104 105 106	SW	Sunny
UP (43)	18/5/11	12.30	Trench 1	3rd Clean	103 104 105 106	NW	Sunny
UP (44)	18/5/11	12.40	Trench 2	2nd Clean	202 203 205 206	NE	Sunny
UP (45)	18/5/11	12.40	Trench 2	2nd Clean	202 203 205 206	SE	Sunny
UP (46)	18/5/11	12.40	Trench 2	2nd Clean	202 203 205 206	SW	Sunny
UP (47)	18/5/11	12.40	Trench 2	2nd Clean	202 203 205 206	NW	Sunny
UP (48)	18/5/11	12.45	Trench 2 detail	2nd Clean - NW Corner	202 206	N	Sunny
UP (49)	18/5/11	12.45	Trench 2 detail	2nd Clean - NE Corner	202 206	E	Sunny
UP (50)	18/5/11	13.20	Trench 1a	1st Extension de-turfed	101	NE	Sunny
UP (51)	18/5/11	13.40	Trench 2a	Extension de-turfed	201 202	NE	Sunny
UP (52)	19/5/11	10.00	Trench 2	Extension 1st Clean	202 204 206	NW	Sunny
UP (53)	19/5/11	10.00	Trench 2a	Extension 1st Clean	202 204 206	NE	Sunny
UP (54)	19/5/11	10.00	Trench 2a	Extension 1st Clean	202 204 206	E	Sunny
UP (55)	19/5/11	10.40	Trench 1a	Ist Ext. !st Clean	104 105	NE	Sunny

Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
UP (56)	19/5/11	10.40	Trench 1a	Ist Ext. !st Clean	104 105	SE	Sunny
UP (57)	19/5/11	10.40	Trench 1a	Ist Ext. !st Clean	104 105	SW	Sunny
UP (58)	19/5/11	10.40	Trench 1a	Ist Ext. !st Clean	104 105	NW	Sunny
UP (59)	19/5/11	14.20	Trench 1a	1st Ext. 2nd Clean	105 106 107	NE	Sunny
UP (60)	19/5/11	14.20	Trench 1a	1st Ext. 2nd Clean	105 106 107	SE	Sunny
UP (61)	19/5/11	14.20	Trench 1a	1st Ext. 2nd Clean	105 106 107	SW	Sunny
UP (62)	19/5/11	15.00	Trench 1b	2nd Ext. de-turfed	101 105	NE	Sunny
UP (63)	19/5/11	15.00	Trench 1b	2nd Ext. de-turfed	101 105	SE	Sunny
UP (64)	19/5/11	15.00	Trench 1b	2nd Ext. de-turfed	101 105	SW	Sunny
UP (65)	19/5/11	15.00	Trench 1b	2nd Ext. de-turfed	101 105	NW	Sunny
UP (66)	24/5/11	12.25	Trench 1 b & 1c	3rd Ext. 1st Clean	104 105 106 107 108 109 111	NE	Bright
UP (67)	24/5/11	12.25	Trench 1/1a/1b/1c	3rd Ext. 1st Clean	103 104 105 106 107 108 109 111	SE	Bright
UP (68)	24/5/11	12.30	Trench 1 b & 1c	3rd Ext. 1st Clean	104 105 106 111	SW	Bright
UP (69)	24/5/11	12.30	Trench 1/1a/1b/1c	3rd Ext. 1st Clean	104 105 106 107 108 109 111	SW	Bright
UP (70)	24/5/11	12.35	Trench 1/1a/1b/1c	3rd Ext. 1st Clean	103 104 105 106 107 108 109 111	NW	Bright
UP (71)	24/5/11	12.35	Trench 1c	3rd Ext. 1st Clean	105 106	NW	Bright
UP (72)	25/5/11	11.10	Trench 2/2a	Final Clean	202 203 204 205 206	E	Sunny
UP (73)	25/5/11	11.00	Trench 2/2a	Final Clean	202 203 204 205 206	SE	Sunny
UP (74)	25/5/11	11.05	Trench 2/2a	Final Clean	202 203 204 205 206	SW	Sunny
UP (75)	25/5/11	11.05	Trench 2/2a	Final Clean	202 203 204 205 206	NW	Sunny
UP (76)	25/5/11	11.10	Trench 2/2a	Final Clean	202 203 204 205 206	N	Sunny
UP (77)	25/5/11	12.05	Trench 1 detail	Internal Tumble	105 108	SW	Sunny
UP (78)	25/5/11	12.10	Test Pit 1	Section		NW	Sunny
UP (79)	25/5/11	15.40	Trench 1/1a/1b/1c	Final Clean	103 104 105 106 107 108 109 111	NE	Sunny
UP (80)	25/5/11	15.45	Trench 1/1a/1b/1c	Final Clean	103 104 105 106 107 108 109 111	SE	Sunny
UP (81)	25/5/11	15.45	Trench 1/1a/1b/1c	Final Clean	103 104 105 106 107 108 109 111	SW	Sunny
UP (82)	25/5/11	15.50	Trench 1/1a/1b/1c	Final Clean	103 104 105 106 107 108 109 111	NW	Sunny
UP (83)	25/5/11	16.00	Trench 1/1a/1b/1c/2/2a	Final Clean	103 104 105 106 107 108 109 111 202 203 204 205 206	NE	Sunny
UP (84)	25/5/11	16.00	Trench 1/1a/1b/1c/2/2a	Final Clean	103 104 105 106 107 108 109 111 202 203 204 205 206	SE	Sunny
UP (85)	25/5/11	15.55	Trench 1/1a/1b/1c/2/2a	Final Clean	103 104 105 106 107 108 109 111 202 203 204 205 206	SW	Sunny
UP (86)	25/5/11	15.55	Trench 1/1a/1b/1c/2/2a	Final Clean	103 104 105 106 107 108 109 111 202 203 204 205 206	NW	Sunny
UP (87)	25/5/11	16.05	Trench 1/1a detail	Int wall tumble & burnt area	108 109	NE	Sunny
UP (88)	25/5/11	16.05	Trench 1 detail	Int S Wall	105 108 111	NE	Sunny
UP (89)	25/5/11	16.10	Trench 1/1b detail	Int W Wall	106 108 111	W	Sunny
UP (90)	25/5/11	16.10	Trench 1/1b/1c detail	Int W Wall	107 108 111	N	Sunny
UP (91)	25/5/11	16.10	Trench 1/1a detail	Int E Wall	107 108 109	NE	Sunny
UP (92)	25/5/11	16.10	Trench 1/1a detail	Int E Wall	107 108 109	S	Sunny
UP (93)	25/5/11	16.10	Trench 1/1a detail	Internal Tumble	108 109	SW	Sunny
UP (94)	27/5/11	14.40	Trench 1a/1c/1d/2/2a detail	Dividing Wall	108 109 110 202 206	NE	Cloudy
UP (95)	27/5/11	14.40	Trench 1d	Dividing Wall	108 110 206	NE	Cloudy
UP (96)	27/5/11	14.40	Trench 1a/1c/1d detail	Dividing Wall	108 109 110	NW	Cloudy
UP (97)	27/5/11	14.40	Trench 1a/1c/1d detail	Dividing Wall	109 109 110	SW	Cloudy
UP (98)	27/5/11	14.40	Trench 1a/1c/1d/2/2a detail	Dividing Wall	108 109 110 203 206	SE	Cloudy
UP (99)	30/5/11	10.45	Spoil Heap	Stones taken from tumble & soil			Wet
UP (100)	30/5/11	10.45	Spoil Heap	Stones taken from tumble & soil			Wet
UP (101)	30/5/11	10.45	Spoil Heap	Stones taken from tumble			Wet
UP (102)	30/5/11	10.45	Spoil Heap	Stones taken from tumble			Wet
UP (103)	30/5/11	10.45	Spoil Heap	Stones taken from tumble			Wet
UP (104)	30/5/11	10.45	Spoil Heap	Stones taken from tumble			Wet
UP (105)	27/6/11	12.35	Trench 1e	1st Clean	105 112 113	NE	Sunny
UP (106)	27/6/11	12.35	Trench 1e	1st Clean	105 112 113	SE	Sunny
UP (107)	27/6/11	12.35	Trench 1e	1st Clean	105 112 113	SW	Sunny

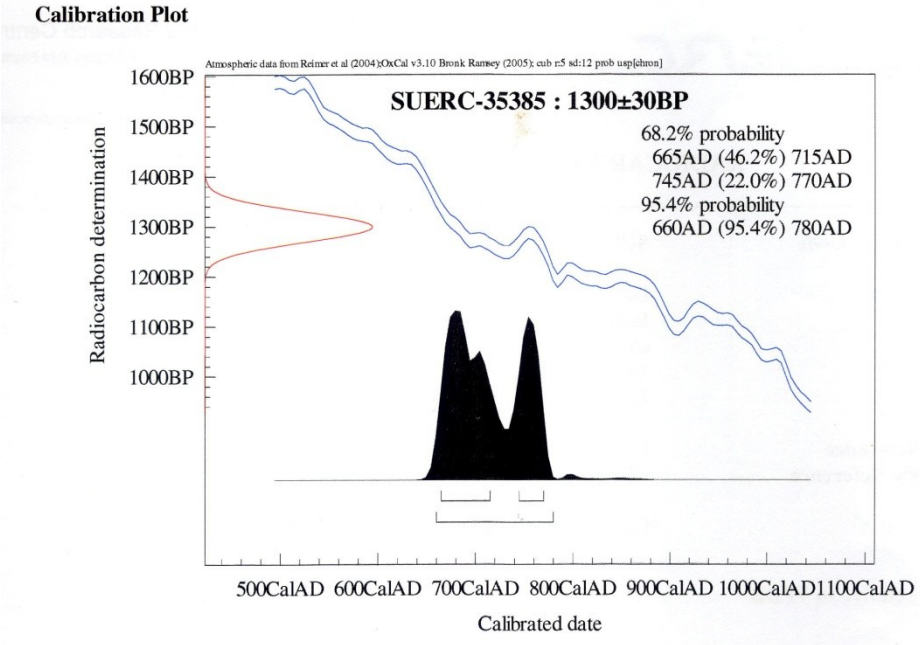
Ref.	Date	Time	Feature	Description	Contexts	Dir	Conditions
UP (108)	27/6/11	12.35	Trench 1e	1st Clean	105 112 113	NW	Sunny
UP (109)	27/6/11	13.30	Trench 3	1st Clean	302 303 304	N	Sunny
UP (110)	27/6/11	13.30	Trench 3	1st Clean	302 303 304	E	Sunny
UP (111)	27/6/11	13.30	Trench 3	1st Clean	302 303 304	S	Sunny
UP (112)	27/6/11	13.30	Trench 3	1st Clean	302 303 304	W	Sunny
UP (113)	27/6/11	13.45	Trench 1b/1c/1e detail	NW Wall	105 112	NW	Sunny
UP (114)	27/6/11	13.50	Trench 1f	1st Clean	103 114	NE	Sunny
UP (115)	27/6/11	13.50	Trench 1f	1st Clean	103 114	SE	Sunny
UP (116)	27/6/11	13.50	Trench 1f	1st Clean	103 114	SW	Sunny
UP (117)	27/6/11	13.50	Trench 1f	1st Clean	103 114	NW	Sunny
UP (118)	27/6/11	14.30	Trench 3	2nd Clean	303 304	N	Sunny
UP (119)	27/6/11	14.30	Trench 3	2nd Clean	303 304	E	Sunny
UP (120)	27/6/11	14.30	Trench 3	2nd Clean	303 304	S	Sunny
UP (121)	27/6/11	14.30	Trench 3	2nd Clean	303 304	W	Sunny
UP (122)	27/6/11	15.00	Trench 1b/1c/1e detail	NW Wall	105 112	NW	Sunny
UP (123)	27/6/11	15.45	Trench 3	Final Clean	303 304	N	Sunny
UP (124)	27/6/11	15.45	Trench 3	Final Clean	303 304	E	Sunny
UP (125)	27/6/11	15.45	Trench 3	Final Clean	303 304	S	Sunny
UP (126)	27/6/11	15.45	Trench 3	Final Clean	303 304	W	Sunny
UP (127)	28/6/11	11.25	Trench 1b/1c/1e detail	NW Wall	105 112	NW	Sunny
UP (128)	28/6/11	11.25	Trench 1e	Progress shot	105 112 113	SE	Sunny
UP (129)	28/6/11	12.00	ES4	Snail shells in 112	112	NW	Sunny
UP (130)	28/6/11	12.00	ES4	Snail shells in 112	112	NW	Sunny
UP (131)	28/6/11	14.00	Trench 1f	Final Clean	103 114	NE	Sunny
UP (132)	28/6/11	14.00	Trench 1f	Final Clean	103 114	SE	Sunny
UP (133)	28/6/11	14.00	Trench 1f	Final Clean	103 114	SW	Sunny
UP (134)	28/6/11	14.00	Trench 1f	Final Clean	103 114	NW	Sunny
UP (135)	28/6/11	14.55	Trench 1e	Final Clean	105 112 113 115	NE	Sunny
UP (136)	28/6/11	14.55	Trench 1e	Final Clean	105 112 113 115	SE	Sunny
UP (137)	28/6/11	14.55	Trench 1e	Final Clean	105 112 113 115	SW	Sunny
UP (138)	28/6/11	15.00	Trench 1e	Final Clean	105 112 113 115	NW	Sunny
UP (139)	28/6/11	15.00	Trench 1e	Final Clean	105 112 115	NW	Sunny
UP (140)	28/6/11	15.00	Trench 1b/1c/1e detail	Final Clean	105 112 115	NW	Sunny
UP (141)	28/6/11	15.45	Trench 1/1a/1b/1c/1d/1e/1f/2/2a	Final Clean	103 104 105 106 107 108 109 111 112 113 114 115 202 203 204 205 206	NE	Cloudy
UP (142)	28/6/11	15.45	Trench 1/1a/1b/1c/1d/1e/1f/2/2a	Final Clean	103 104 105 106 107 108 109 111 112 113 114 115 202 203 204 205 206	SE	Cloudy
UP (143)	28/6/11	15.45	Trench 1/1a/1b/1c/1d/1e/1f/2/2a	Final Clean	103 104 105 106 107 108 109 111 112 113 114 115 202 203 204 205 206	SW	Cloudy
UP (144)	28/6/11	15.45	Trench 1/1a/1b/1c/1d/1e/1f/2/2a	Final Clean	103 104 105 106 107 108 109 111 112 113 114 115 202 203 204 205 206	NW	Cloudy
UP (145)	28/6/11	13.50	1c/1d/1e detail	NW Wall	105 112 115	NW	Cloudy
UP (146)	28/6/11	13.50	1c/1d/1e detail	NW Wall	105 112 113 115	NW	Cloudy
UP (147)	28/6/11	13.45	Trench 3	Backfilled		SE	Cloudy
UP (148)	29/6/11	9.40	Trench 1e	Final clean from above	105 112 113 115	NE	Cloudy
UP (149)	29/6/11	9.40	Trench 1e	Final clean from above	105 112 113 115	SW	Cloudy
UP (150)	30/6/11	10.45	Trenches 1 & 2	Backfilled		N	Cloudy

Appendix 5 Radiocarbon Dating Report

Sample: sfn 161, Context 108

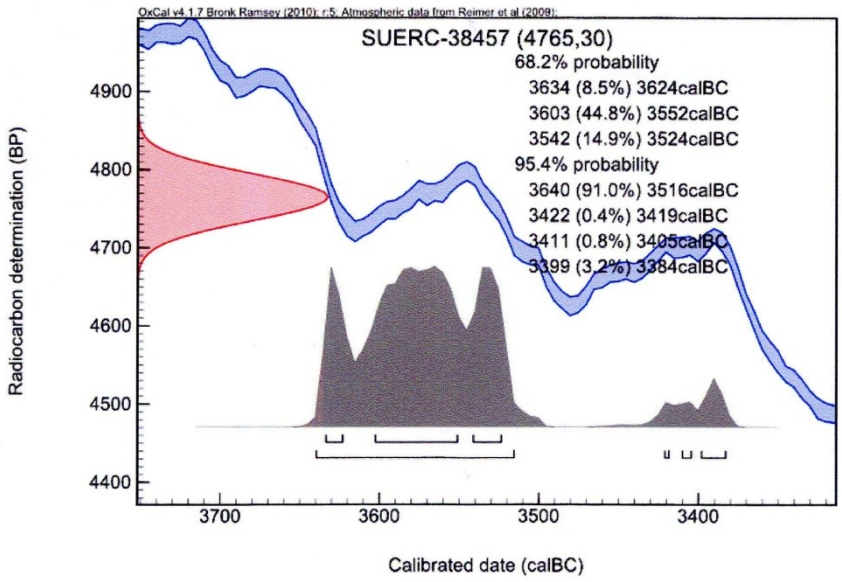


Sample: sfn 144, Context 108



Sample: sfn 204, Context 115

Calibration Plot



Appendix 6 Botanical Report

Compiled by Helen Sergeant

The project area, consisting of the actual excavation site and its surroundings, was divided into five discrete areas based on topographical, hydrological and geological conditions. Species identified on the ground are listed for each area:

1. On and immediately around the excavated structure

Stinging nettle	*Urtica dioica*
Common dog violet	*Viola riviniana*
Wavy bittercress	*Cardamine flexuosa*
White clover	*Trifolium repens*
Ribwort plantain	*Plantago lanceolata*
Spear thistle	*Cirsium vulgare*
Good Friday grass	*Luzula campestris*
Glaucous sedge	*Carex flacca*
Mat-grass	*Nardus stricta*
Blue moor grass	*Sesleria caerulea*
Sweet Vernal grass	*Anthoxanthum odoratu*

2. Within the 'wetland' depression

Lesser spearwort	*Ranunculus flammula*
Lady's smock	*Cardamine pratensis*
Bilberry	*Vaccinium myrtillus*
Birdseye primrose	*Primula farinose*
Tormentil	*Potentilla erecta*
Salad burnet	*Poterium sanguisorba*
Red clover	*Trifolium pratense*
Butterwort	*Pinguicula vulgaris*
Harebell	*Campanula rotundifolia*
Heath bedstraw	*Galium saxatile*
Marsh valerian	*Valeriana dioica*
Wild thyme	*Thymus drucei*
Common catsear	*Hypochoeris radicata*

Dandelion	*Taraxacum officinale*
Mouse-ear hawkweed	*Hieracium pilosella*
Daisy	*Bellis perennis*
Sneezewort	*Achillea ptarmica*
Yarrow	*Achillea millefolium*
Marsh arrow-grass	*Triglochin galustris*
Jointed rush	*Juncus articulates*
Soft rush	*Juncus effuses*
Common cotton-grass	*Criopharum angustifolium*
Deer-grass	*Scirpus cespitosus*
Star sedge	*Carex echinata*
Glaucous sedge	*Carex flacca*
Carnation sedge	*Carex panacea*
Common yellow sedge	*Carex demissa*
Common sedge	*Carex nigra*
Mat-grass	*Nardus stricta*
Crested dogstail	*Cynosorus cristatus*
Quaking-grass	*Briza media*
Tufted hair-grass	*Deschampsia cespitosa*

3. On the slopes around the 'wetland' depression

Meadow buttercup	*Ranunculus acris*
Bulbous buttercup	*Ranunculus bulbosus*
Common rock rose	*Helianthemum chamaecistus*
Common dog violet	*Viola riviniana*
Birdseye primrose	*Primula farinose*
Tormentil	*Potentilla erecta*
Rue-leaved saxifrage	*Saxifraga tridactylites*
Salad burnet	*Poterium sanguisorba*
Lady's mantle	*Alchemilla glabra*
Common birdsfoot trefoil	*Lotus corniculatus*
Common milkwort	*Polygala vulgaris*

Herb robert	*Geranium robertianum*
Wild thyme	*Thymus drucei*
Ribwort plantain	*Plantago drucei*
Heath speedwell	*Veronica officinalis*
Harebell	*Campanula rotundifolia*
Devil'sbit scabious	*Succisa pratensis*
Small scabious	*Succisa columbaria*
Spear thistle	*Cirsium vulgare*
Dandelion	*Taraxacum officinalis*
Yarrow	*Achillea millefolium*
Ragwort	*Senecio* spp.
Hartstongue fern	*Phyllitis scolopendrium*
Brittle bladder fern	*Cystopteris fragilis*
Glaucous sedge	*Carex flacca*
Blue moor grass	*Sesleria caerulea*
Yellow oat grass	*Trisetum flavescens*
Tufted hair-grass	*Deschampsia cespitosa*
Early purple orchid	*Orchis mascula*

4. Limestone pavement west of the excavation site

Hartstongue fern	*Senecio* spp.
Maidenhair	*Phyllitis scolopendrium*
Green spleenwort	*Asplenium viride*
Wall-rue	*Asplenium ruta-muraria*
Lady fern	*Athyrium filix-femina*
Brittle bladder fern	*Cystopteris fragilis*
Hard shield fern	*Polystichum aculeatum*
Male fern	*Dryopteris filix-mas*
Stinging nettle	*Urtica dioica*
Common rock rose	*Helianthemum chamaecistus*
Rue-leaved saxifrage	*Saxifraga tridactylites*
Raspberry	*Rubus idaeus*

Tormentil	*Potentilla erecta*
Salad burnet	*Poterium sanguisorba*
Broad-leaved willow-herb	*Epilobium montanum*
Dog's mercury	*Mercurialis perennis*
Fairy flax	*Linum carthartícum*
Wood-sorrel	*Oxalis acetosella*
Bloody cranesbill	*Geranium sanguineum*
Herb Robert	*Geranium robertianum*
Ivy	*Hedera helix*
Sanicle	*Sanicula europaea*
Hedge woundwort	*Stachys sylvatica*
Thyme	*Thymus drucei*
Eyebright	*Euphrasia officinalis*
Harebell	*Campanula rotundifolia*
Limestone bedstraw	*Galium sterner*
Heath bedstraw	*Galium saxatile*
Spear thistle	*Cirsium vulgare*
Creeping thistle	*Cirsium arvense*
Nipplewort	*Lapsana communis*
Wall lettuce	*Mycelis muralis*
Dandelion	*Taraxacum officinale*
Hawkweed	*Hieracium* sp.
Coltsfoot	*Tussilago farfara*
Wood sedge	*Carex sylvatica*
Glaucous sedge	*Carex flacca*
Quaking-grass	*Briza media*
Blue moor grass	*Sesleria caerulea*
Ramsons	*Hyacinthoides non-scripta*
Common twayblade	*Allium ursinum*

5. Surrounding grassland areas – additional to Area 4b

Mountain pansy	*Viola lutea*

Appendix 7 Pollen diagram for Sulber Pasture