Archaeology South-East

ASE

POST-EXCAVATION ASSESSMENT AND UPDATED PROJECT DESIGN REPORT

LAND AT THE FORMER ST AUBYNS SCHOOL NEWLANDS ROAD, ROTTINGDEAN EAST SUSSEX

NGR: 537096 102361
(TQ 37096 02361)

Planning Reference: BH2017/02680

ASE Project No: 200513

Site Code: SAU17

ASE Report No: 2021101

OASIS ID: archaeol6-502317

By Hayley Nicholls

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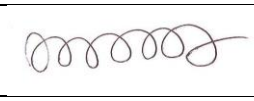
Reviewed and approved by:	**Dan Swift**	**Project Manager**	
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Abstract

This report incorporates the results of both the archaeological and geoarchaeological excavations carried out by Archaeology South-East at the former St Aubyns School, Rottingdean, East Sussex between 7th and 27th January 2021. The fieldwork was commissioned by Fairfax Properties in advance of residential redevelopment on the site.

The earliest visible occupation of the site most likely occurred during the Early Neolithic with a single pit of this date, associated with a small assemblage of pottery in the Early Neolithic Plain Bowl tradition and flintwork.

Use of the site certainly increased sometime between the Middle Neolithic and Early Bronze Age with evidence of a pit alignment with structured deposits likely dating to the Middle Neolithic to Late Neolithic transition. Further evidence included a tree throw, a cluster of pits or postholes which may have been associated with a structure, and a single ditch attesting to limited landscape division at some point in this period. A significant assemblage of flintwork and animal bone was recovered from features of this period along with small assemblages of pottery predominantly identified as Grooved Ware, marine molluscs, registered finds and environmental remains.

Numerous undated pits and postholes, considered most likely of a similar prehistoric date, were also identified. Many shared a similar orientation to the Neolithic pit alignment.

A small cluster of 19th to 20th centuries pits and postholes were identified, containing clinker and coal. They were considered most likely of an agricultural or domestic nature.

It is proposed that the results of the work should be published as an article in the journals Proceedings of the Prehistoric Society or Sussex Archaeological Collections.

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FIGURES

1.0 INTRODUCTION

1.1 Site Location

1.1.1 Archaeology South-East (ASE) was commissioned by Fairfax Properties to carry out archaeological and geoarchaeological excavations at the former St Aubyns School, Rottingdean, East Sussex prior to the redevelopment of the site (NGR 537096 102361; Figure 1).

1.1.2 The site is situated to the east of the High Street, along which the historic village was aligned, and just 150m north of the sea cliff. The site comprises an irregularly shaped piece of land, including the former St Aubyns School buildings to the west and the playing field to the east. Steyning Road bounds the site to the north, Newlands Lane to the east, with St Aubyns Mead to the south.

1.2 Geology and Topography

1.2.1 According to the British Geological Survey, the bedrock geology of the site comprises Newhaven Chalk Formation. No superficial deposits are recorded (BGS 2021).

1.2.2 Topographically, the site is situated on a gentle slope, on the west facing side and towards the base of a small valley. Ground levels fall from 31m AOD along the east site boundary and Newlands Road, to 24m AOD along the western edge of the playing field within which the excavation was sited (Figure 2).

1.3 Scope of the Project

1.3.1 A Desk-Based Assessment (DBA) and geophysical survey were carried out within the site in 2017 to inform the planning application (ASE 2017a and 2017b). The DBA assessed the site as having a moderate to high theoretical potential for archaeological remains from the prehistoric era and a moderate theoretical potential thereafter with the exception of the early medieval period for which the theoretical potential was low. The geophysical survey identified moderate positive anomalies within the site along with linear anomalies considered to possibly correspond with boundary ditches (Figure 8).

1.3.2 Planning permission was subsequently granted by Brighton and Hove City Council for residential redevelopment on 8th February 2019 (planning reference BH2017/02680), subject to conditions. Condition 17 stated that:

'No development shall take place until the developer has secured the implementation of a programme of archaeological work, in accordance with a Written Scheme of Archaeological Investigation which has been submitted to and approved in writing by the Local Planning Authority.

REASON: To ensure that the archaeological and historical interest of the site is safeguarded and recorded to comply with policy HE12 of the Brighton & Hove Local Plan and CP15 of the Brighton & Hove City Plan Part One.

1.3.3 In accordance with this, an initial archaeological evaluation by trial trenching was carried out in July 2020 (ASE 2020a). This found archaeological deposits

and evidence for periglacial geological processes with geoarchaeological potential.

1.3.4 Consequently, the ESCC County Archaeologist requested a further programme of archaeological mitigation comprising targeted open-area excavation and geoarchaeological test-pitting. A Written Scheme of Investigation was prepared by Archaeology South-East (2020b) outlining the methodology and requirements of the archaeological and geoarchaeological investigation and was submitted to ESCC prior to the commencement of fieldwork. All work was carried out in line with this document.

1.3.5 This report presents the findings of the excavations. The archaeological fieldwork was supervised by Hayley Nicholls, the geoarchaeological fieldwork by Matt Pope, and the project was managed by Jon Sygrave. The post-excavation work was managed by Jim Stevenson and Dan Swift.

1.4 Circumstances and Dates of Work

1.4.1 The desk-based and fieldwork stages were as follows:

- St Aubyns School, Rottingdean, Brighton, BN2 7JN, East Sussex; Historic Environment Desk-Based Assessment (ASE 2017a)

- Detailed Magnetometer Survey Report; Land at the former St Aubyns School, Rottingdean, East Sussex, BN2 7JN, fieldwork undertaken on the 28th September 2017 (ASE 2017b)

- Archaeological Evaluation Report; St Aubyns School, Rottingdean, Brighton, East Sussex, BN2 7JN, fieldwork undertaken between the 20th and 27th July 2020 (ASE 2020a)

- Archaeological and geoarchaeological excavations on Land at the former St Aubyns School, Rottingdean, East Sussex; fieldwork undertaken between the 7th and 27th January 2021. Post-Excavation Assessment and Updated Project Design report (Current document)

1.5 Methodology (Figure 2)

Archaeological Excavation

1.5.1 All archaeological fieldwork was carried out to accepted professional standards in line with the *Sussex Archaeological Standards* (CDC/ESCC/WSCC 2019) CIfA guidelines (CIfA 2014a; CIfA 2014b; CIfA 2014c), and the Written Scheme of Investigation (ASE 2020b).

1.5.2 The excavation area was sited in its intended location, and to its intended extent, totalling 0.4 hectares. A small extension, measuring 7m by 3.7m was excavated close to the south-west corner of the area, immediately beyond the intended southern limit of excavation. This was done following the identification of pit [028], which was located immediately against the intended south edge of the area, to ensure no associated features lay in its immediate vicinity.

1.5.3 The topsoil was removed using a bulldozer. The subsoil was machine-stripped under the supervision of experienced archaeologists using a tracked

mechanical 360° excavator fitted with a smooth grading bucket, in spits no greater than 0.1m in thickness. Machine excavation was then carried out to the surface of geology or to archaeological deposits, whichever was higher. Care was taken not to machine off seemingly homogenous layers that might have been the upper parts of archaeological features.

1.5.4 The resultant surfaces were cleaned as necessary and a pre-excavation plan prepared using Global Positioning System (GPS) planning technology. Multiple deposits with archaeological potential were identified.

1.5.5 All features were half-sectioned with the exception of the pits in Group 1 (see 4.7) which were fully excavated. All excavated deposits and features were recorded according to current professional standards using the standard context record sheets used by ASE.

1.5.6 A full digital photographic record of all features was maintained. This illustrates the principal features and finds both in detail and in a general context. The photographic record also includes working shots to represent more generally the nature of the fieldwork.

1.5.7 All finds recovered from excavated deposits were collected and retained in line with the WSI (ASE 2020b).

1.5.8 Environmental samples were collected from suitable excavated contexts, including dated/datable buried soils, well-sealed slowly silted features, and sealed features containing evident carbonised remains.

1.5.9 The sampling strategy was designed to recover spatial and temporal information concerning the occupation of the site. This was best achieved by sampling a range of feature types (pits, ditches, post-holes) from across the site, the fills of which can be compared and contrasted. Where clearly defined fills were evident within features, or in large features with superficially homogenous fills, stratified data was obtained by taking multiple samples spread through the deposits.

1.5.10 A standard bulk sample size of 40 litres (or 100% of small features) was taken from dated/datable sealed contexts to recover environmental remains such as fish, small mammals, molluscs and botanicals.

Geoarchaeological Investigation

1.5.11 Four Geoarchaeological Test Pits (GTPs 1 -4) were undertaken in order to determine Quaternary sedimentary context of the site and to determine the potential for archaeological and palaeoenvironmental evidence at depth blow the strip level.

1.5.12 The four GTPs were located at the corners of the excavation area (Figure 2) and dug using a tracked mechanical 360° excavator fitted with a 1.8m wide flat tooth bucket. Each GTP provided a section 3m in length and up to 2.2m deep. Each was excavated carefully in 100mm spits and both the exposed pit base and arising spoil were examined for artefacts and ecofacts after each pass.

1.5.12 Each sedimentary unit was recorded in terms of matrix, coarse components, degree of sorting, colour and consistency. A photographic and drawn record

was made of each section. Each major unit was sampled for OSL and for palaeoenvironmental remains where appropriate.

1.6 Organisation of the Report

1.6.1 This post-excavation assessment and updated project design has been prepared in accordance with the guidelines laid out in Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (Historic England 2015).

1.6.2 The report seeks to place the results from the site within the local archaeological and historical setting; to quantify and summarise the results; specify their significance and potential, including any capacity to address the original research aims, listing any new research criteria; and to lay out what further analysis work, if any, is required to enable their final dissemination, and what form the latter should take.

1.6.3 Following on from a previous archaeological evaluation conducted by Archaeology South-East (ASE 2020a; Figure 2) work at the site ran as a single excavation, with the finds and environmental archives recorded under a single site code: SAU17

1.6.4 Where possible the results from the evaluation have been integrated and assessed with the results from the main excavation.

2.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 The following information is largely paraphrased from the Desk-Based Assessment (ASE 2017a).

2.2 The site has produced no finds spots for the early prehistoric period (Palaeolithic – Mesolithic). The Rottingdean-Woodingdean Dry Valley has however produced two finds of Pleistocene megafauna, in both cases *Mammuthus primigenius*, indicating the potential for vertebrate remains in the Pleistocene sediments of the valley system. Head deposits (3.5km) to the west of the site at Black Rock have historically produced a rich assemblage of vertebrate fauna including mammoth, woolly rhinoceros and horse.

2.3 Evidence of later prehistoric activity has been recorded in the vicinity of the site. Two long barrows, a trepanned skull, thought to be Neolithic in date, and flint implements are recorded on the HER within the study area. One of the long barrows may actually be Bronze Age in date and correspond to two adjacent bowl barrows. Earthwork remains of a prehistoric field system identified at Balsdean Farm may also be Bronze Age in date. A possible Bronze Age barrow is situated c. 700m south east of the site. Possible evidence for Iron Age occupation is provided by a sheep skeleton found within a cut associated with sherds of pottery that may belong to this period. Undated prehistoric struck flint has been found at four locations but may be residual.

2.4 Evidence for a Romano-British activity includes a major late 3rd century coin hoard found at Rottingdean (precise location unknown) in 1789.

2.5 The place name Rottingdean is thought to be of Saxon origin, being a corruption of the Anglo-Saxon name 'Rotinga dene', meaning 'the valley (dene) of the Rotingas' – the tribal territory of the people (inga) of Rota (Glover v1997:181). The Church may have Saxon origins, and settlement was recorded for the locality at the time of the Domesday survey. Evidence of occupation is provided by burials on the high ground to the east and west of the site, one of which had associated weaponry. A further, possibly Saxon or older, inhumation was identified c.315m west of the site.

2.6 The East Sussex HER records six medieval entries. The Church of St Margaret is probably of early 12th century origin, with 13th century and later rebuilds (Salzman 1940:236). The Black Horse Public House is late medieval in origin as is Challoners, thought to be the manorial farm, the extant farmhouse dating to the 15th century. A medieval wreck, 'Luke', is recorded off the coast. A single sherd of medieval pottery is recorded and fragments of medieval church masonry. The medieval village focus is north of the site, around the village green.

2.7 In the post-medieval period, the green continued to provide a focus for the farming related activities of the settlement, with farms clustered around it. In the 18th-19th century development extended down the High Street, including the establishment of the original townhouse forming the historic core of the principal school building of St Aubyn's.

2.8 The site lies within the Conservation Area of Rottingdean and the Archaeological Notification Area of Rottingdean.

2.9 The evaluation (ASE 2020) produced the following results:

Eighteen archaeological trenches were excavated of varying lengths up to 30m. The preservation of the archaeological horizon on this site can be considered good. Four undated archaeological features were uncovered in 3 of the 18 excavated trenches, these are 2 ditches and 2 pits that were recorded in the central-eastern part of the site cut into the chalk substrate. The were no finds but the features are considered to be of some antiquity as the ditches do not correlate with the orientation of the present street plan and they were sealed beneath an intact subsoil horizon recorded across all of the site. When measured alongside the geophysical survey plan, the evidence might suggest that more activity than a ditched field system is present on this site and that more than a single phase of archaeological activity is present.

2.10 In addition, the evaluation identified that much of the site is underlain by Quaternary deposits extending back at least into the Late Pleistocene. While the depth, age-range and character of these deposits is currently unknown, it was observed that downslopes stripes of finer, silty head covered the site at regular (c.0.5m) intervals. These stripes are the surface expression of involutions, a type of periglacial patterned-ground formed due to freeze-thaw processes on slopes. They are known to provide capture points for artefacts from disturbed Palaeolithic localities, including the nearby site of Meeching Road, Newhaven, 7.5km to the east of the site, where refitting flint artefacts were recovered within similar involutions. (Bell 1976; Pope and Maxted 2008).

3.0 ORIGINAL RESEARCH AIMS

3.1 The broad aims of the project were:

- *To excavate and record all archaeological remains and deposits exposed in the excavation area with a view to understanding their character, extent, preservation, significance and date before their loss through development impacts.*

- *Through surface survey and excavation, with special attention to the periglacial involutions (stripes), determine the presence, character and significance of early prehistoric artefacts associated with Pleistocene sediments.*

- *To record, date and sample for Palaeoenvironmental remains, the Quaternary sedimentary sequence at the site, including the periglacial involutions (stripes).*

- *To understand to what extent the features exposed during the evaluation can be explained through excavation of the wider area.*

- *To refine the dating, character and function of the landscape features at this site.*

- *To make the results of the investigation publicly accessible through submission of a report to the East Sussex County Council Historic Environment Record and of the project archive to the local museum.*

3.2 The results of the evaluation were too inconclusive to address the specific research questions postulated, but identified good potential for further archaeology to survive. Consequently, the excavation still has the potential to contribute to the following South-East Research Framework topics:

- *Assess the evidence for Beaker occupation sites in valleys.*
- *The Middle Bronze Age sees a dramatic change in the degree of evidence for agriculture. Can the timing and nature of this transition including the dating of the introduction of spelt wheat be clarified?*

- *Finding more well-dated Early Bronze Age boundaries and pit deposits in order to understand the processes of change in the organisation of the landscape*

- *Re-examination of woodlands on the South Downs*
- *What evidence is there for coastal maritime, riverine and continental links with other cultures or settlements during the prehistoric period?*
- *To what extent can sites, when examined on a local and regional level, define their relationship to a wider first millennium BC cultural system?*
- *The character of the Middle / Late Bronze Age transition*
- *Comparisons between urban and rural, coastal and in-land communities in the medieval period.*
- *The interaction between town and country in the medieval period.*

- *The chronology and typology of farm buildings and other lesser noticed post-medieval agricultural features, such as dew ponds and sheepfolds in the post-medieval period.*
- *Further archaeological survey on agricultural buildings and other ancillary structures in the post-medieval period.*
- *Identification of areas of colluvial/solifluction deposits that may contain undisturbed or minimally disturbed concentrations of Palaeolithic remains.*
- *More attention to 'Brickearth', and characterisation as colluvial or aeolian (or fluvial*
- *Mapping and dating of loessic sediments, and modelling of likelihood of any contained Palaeolithic remains.*

4.0 ARCHAEOLOGICAL RESULTS

4.1 Introduction

4.1.1 As part of the stratigraphic assessment, individual contexts, referred to thus [***] have been sub-grouped and/or grouped together and features are generally referred to by their sub-group (SG**) or group label (G**). In this way, linear features, such as ditches, which may have numerous individual slots and context numbers, are discussed as single entities, and other cut features such as ring-gullies, pits and postholes are grouped together by structure, common date and/or type. Environmental samples are listed within triangular brackets <**>, and registered finds thus: RF<*>. References to sections within this report are referred to thus (3.7).

4.1.2 The context groups have also been assigned to a provisional higher-level landuse grouping, in an attempt to identify areas of function (field systems, buildings and open areas between them etc.). This process will be further refined at publication.

Glossary of landuse abbreviations used in this text:

D:	ditch
OA:	open area
FS:	field system

4.1.3 The archaeology is discussed under provisional date-phased headings determined primarily through assessment of the dateable artefacts, predominantly the pottery, and secondarily through the creation of relative chronologies where stratigraphic relationships exist. They are as follows.

Period 1:	Early Neolithic?
Period 2:	Middle Neolithic - Early Bronze Age
Period 3:	Post medieval- Modern

4.2 Summary

4.2.1 The earliest visible occupation of the site occurred during the Early Neolithic with a single pit probably of this date, associated with a small assemblage of pottery in the Early Neolithic Plain Bowl tradition and some most likely contemporary flintwork.

4.2.2 Use of the site increased when a Middle to Late Neolithic pit alignment containing structured deposits was installed. Further evidence of this date included a tree throw, a cluster of pits or postholes which may have been associated with a structure, and a single ditch attesting to limited landscape division at some point in the period. A significant assemblage of flintwork and animal bone was recovered from features of this period along with a small assemblage of pottery that has predominantly been identified as Grooved Ware.

4.2.3 Numerous other, pits and postholes containing no dateable finds were also identified. Many of these features are similarly orientated to the Neolithic pit alignment and are provisionally considered to be of prehistoric date.

4.2.4 A small cluster of 19th to 20th centuries pits and postholes were identified, containing clinker and coal. These are considered most likely of an agricultural or domestic nature.

Context sheets	125
Section sheets	7
Plans sheets	0
Colour photographs	0
B&W photos	0
Digital photos	185
Context register	4
Drawing register	7
Watching brief forms	0
Trench Record forms	0

Table 1: Quantification of site paper archive

Bulk finds (quantity e.g. 1 bag, 1 box, 0.5 box 0.5 of a box)	0.5 boxes
Registered finds (number of)	1
Flots and environmental remains from bulk samples	0.5 boxes
Palaeoenvironmental specialists sample samples	5 OSL and sediment samples
Waterlogged wood	0
Wet sieved environmental remains from bulk samples	0

Table 2: Quantification of artefact and environmental samples

4.3 Quaternary Deposits (Geoarchaeological Results)

4.3.1 The excavations revealed a sequence across the site which typically showed 0.4m - 0.9m of topsoil and colluvial subsoil overlying Pleistocene calcareous head deposits. All archaeological features, other than those of post medieval/ modern date appeared cut into head deposits and apparently sealed beneath the topsoil and subsoil horizons.

4.3.2 More specifically the four Geoarchaeological Test Pits revealed a broadly similar sequence at each corner of the site which can be characterised by the sequence recorded for GTP1.

0.0m Topsoil.
0.2m Colluvium. Medium yellow-brown clay-silt with 20% angular flint gravel.
0.7m Stony Colluvium. As above but 80% angular flint gravel.
0.9m Involuted Head. Silt with chalk pellet gravel forming downslopes stripes.
1.3m Calcareous Head. Gelliflucted chalk clasts.
2.1m Weathered Solid Chalk (Cretaceous Solid)

4.3.3 The colluvium was observed to gently reduce towards the lower part of the site to 0.3m thickness, but the sequence observed showed a remarkable consistency indicating that, after the formation of the Pleistocene head deposits, there was a relatively minimal build-up of displaced, hill-washed soils on the slope. While this colluvium does appear sufficient to have sealed the prehistoric features it was not possible to see in section whether the features originated in, or lay wholly beneath the hillwash. It is hoped that, at publication,

OSL samples taken from the base of the colluvium may help to resolve this sequential dating question.

4.3.4 Beneath the colluvium across the entire site two distinct deposits of Pleistocene head were observed. These comprised a redeposited fine-grained head which was involuted as a series of regular, down-slope stripes into an underlying coarse head made up entirely of chalk clasts formed through freeze-thaw mass movement. No artefacts or ecofacts were observed in the head deposits exposed in the fours GTPs. Similarly, none were found in a systemic walk-over of the deposits exposed across the site at the strip level.

4.4 Truncation

4.4.1 Limited modern disturbance was evident only along the very easternmost edge of the excavation area, close to and presumably associated with the gated access to the sports field from Newlands Road. An intact subsoil was present across the remainder of the area and archaeological features demonstrated no evidence of truncation or contamination from later activity.

4.5 Residual Earlier Prehistoric Material

4.5.1 A very small quantity of struck flint, amounting to 22 pieces was recovered from topsoil and unstratified deposits (the spoil heap). These flints can only be very broadly dated to the Mesolithic to Early Iron Age periods. However, as there is nothing else to indicate prehistoric occupation or use of the site prior to the Neolithic or after the Early Bronze Age, it is considered that they most probably derive from activity that occurred between the Early Neolithic and the Early Bronze Age; during Period 1 or 2.

4.6 Period 1: Early Neolithic? (*c.*3700 – 3300 BC) (Figure 3)

4.6.1 The earliest *in situ* archaeological evidence recovered during the project was of very limited activity of possible Early Neolithic date, sitting within an open and undivided landscape (Open Area 1).

4.6.2 Just a single pit may have been of this phase, situated towards the south-westernmost corner of the area, and at one of the lowest points at 23.6m AOD. Pit [028], was a roughly sub-rectangular shape in plan, and measured 1.1m x 0.83m, with a maximum depth of 0.16m. The base was uneven and irregular, deeper where it extended over the softer involution stripes, shallower over the harder chalk.

4.6.3 A small assemblage of artefacts were recovered from the pits single, dark silty fill [029] comprising both pottery and struck flint. The pottery consisted predominantly of bodysherds from a single vessel considered most likely to be part of an Early Neolithic Plain Bowl, along with four other sherds that are considered most likely to derive from a separate vessel. Fifteen pieces of worked flint were recovered from the feature, of which some had diagnostic traits suggesting they are contemporary with the pottery. A bulk soil sample <1> was taken from the pit fill and contained hazel nut shell fragments.

4.7 Period 2: Middle Neolithic - Early Bronze Age (3300 –1800 BC) (Figures 4 and 5)

4.7.1 There is evidence to suggest increasing use of the locality through the latter half of the Neolithic and into the Bronze Age. The archaeology is characterised by pits of small to medium dimensions, along with a cluster of small pits or postholes, which may have been associated with a structure. A single ditch may hint at some land division in this period, potentially dividing the lower reaches of the valley and the focal point of activity, (Open Area 2) from the higher ground which may have remained undivided as in the previous period (Open Area 1). It is very possible that the archaeology of this period represents multiple phases of activity, potentially interspersed by periods of abandonment. It is hoped that phasing can be refined with a program of radiocarbon dating at analysis phase.

4.7.2 Eleven bulk soil samples were taken from deposits assigned to this broad period, numbered <2> to <12>. The environmental evidence included low densities of charred grains including naked wheat, wheat and barley, along with oat, hazel nutshell and apple tree charcoal. The assemblage also suggests that the site may have been situated on the margin of woodland. Some limited woodland clearance is likely, to make space for small scale cereal production.

Pit group 1 (G1)

4.7.3 The most significant archaeological remains of this period comprised a group of three pits, G1, orientated on a roughly north-northeast to south-southwest alignment. These three pits varied considerably in size and form, but they have been grouped together due to their distinctive finds assemblages, comprising mixtures of pottery, struck flint, burnt sarsen stone, fired clay, animal bone and shell, whilst all other features on the site contained few or no artefacts.

4.7.4 The central of the three pits [079], was the largest, roughly circular in plan, with a diameter of 1.34m and a depth of 1.05m, with a slightly bell-shaped profile and flat base. A sequence of seven deposits filled the pit, of which six had characteristics which might indicate they were ‘special’ or ‘structured’ deposits, intentionally placed rather than a result of natural accumulation. Of particular note was secondary fill [077], fired clay and struck flint including three discoidal cores and five blades. Many of the fragments of fired clay may have been daub as flat surfaces were commonly identified, although no wattle impressions were recorded. Other artefacts of note recovered from the feature included pottery, most likely Grooved Ware of Late Neolithic date. 32 sherds were recovered from intermediate fill [75], six from secondary fill [77], and one from basal fill [78]; which also contained nut shell. Animal bone, most of which was unidentifiable to species was also recovered from the feature, however a little bone identified as that from sheep /goat was recovered from secondary fill [77], cattle/deer was recognised in intermediate fill [74], and large mammal in upper fill [73]. 15 fragments of heat-affected sarsen stone were also recovered from upper fill [73]. Two samples from the basal fill [78] within pit [79] were sent off for radiocarbon dating and returned dates of 2920-2880 cal BC (SUERC-99023; 95% probability) and 3100-2915 cal BC (SUERC-99024; 95% probability) (see section 5.15, Appendix 4). The later of the two is considered to be most indicative of the deposits date, suggesting initial infilling of the pit in the Middle to Late Neolithic transition.

4.7.5 The second pit [118], lay to the south-southwest of [079], at a distance of 23.2m, had an oval shape in plan, and was the smallest of the three measuring 1.07m x 0.84m, with a depth of 0.42m. Neither pits [096] (the 3rd pit in this group – see 4.7.6 below) nor [118] had bell-shaped profiles, instead they both had fairly steep sides of between 45 and 60 degrees, and flat bases. Pit [118] was filled with a single silty fill [119] which contained 11 sherds of pottery in predominantly shelly fabrics. Several sherds from a single diagnostic vessel were recorded, considered most likely to also be Grooved Ware, although this was less certain than for the assemblage from pit [79]. A substantial quantity of flint was also recovered from the pit, totalling 353 pieces, double what was recovered from pit [79]. They formed a coherent assemblage most likely contemporary with Grooved Ware and of Late Neolithic date, although a few blades and bladelets may have been of a slightly earlier date. A significant assemblage of animal bone was also recovered from this pit, and in this case many more fragments were identified to species. Taxa identified included pig or wild boar and deer. 10 fragments of burnt sarsen stone and abundant quantities of nut shell were also recovered from the feature, along with a cylindrical bone pin, RF<1>. Some bone pins such as this are associated with cremations on other sites.

4.7.6 The third pit [096], was roughly circular in plan, situated to the north of [079], at a distance of 13.7m, with similar dimensions in plan measuring 1.3m x 1.2m, but was considerably shallower with a maximum depth of 0.57m. An assemblage of burnt sarsen stone, nut shell, a very small quantity of animal bone identified as from cattle and 173 pieces of flint were recovered across the features' three fills. The flint assemblage from this pit contained a higher proportion of cores, larger pieces of irregular waste and was slightly more weathered than those from pits [118] and [79]. This may indicate a different pattern of deposition or a specific activity. No pottery was recovered from pit [096], and no radiocarbon dating of material from its fills has as yet been undertaken. However, the presence of nut shell, animal bone and burnt sarsen within its fills, indicating at least some pattern to the deposition across all three pits, was considered enough to suggest they might be roughly contemporary and associated. A large chalk boulder RF<2> exhibiting an area of apparently linear incisions which appear to have been made by a sharp flint tool, as well as a possible 'cup' and areas of pecking was also recovered from this pit, within intermediate fill [98]. Stones such as these are strongly correlated with deliberate and symbolic deposition practices, particularly with burials (Teather 2016, 58-9).

Tree throws and boundaries

4.7.7 Just a single further feature contained ceramic material dating to this broad period, comprising a large pit or possibly a tree throw [053], situated equidistant from pits [079] and [096]. The feature was considerably more irregular than those in pit group G1, filled with a sequence of three substantial homogenous silty fills. Four small sherds of pottery very likely belonging to the Beaker tradition and of Late Neolithic to Early Bronze Age date were recovered from intermediate fill [055]. Three pieces of sarsen stone and 44 pieces of flint were also recovered from the feature. Most of the flint came from the intermediate fill, diagnostic elements of which were contemporary with Period 2. The assemblage from this feature was noticeably smaller and less varied that those from pit group 1, and given the nature of the feature and its fills, it is considered possible that the feature represents a large tree throw, which infilled gradually through natural processes, towards the end of Period 2. The location of the

feature is notable, as it lay roughly along the same alignment as pit group 1, potentially indicating they were associated. It is possible that [53] was part of a woodland margin or boundary, one that was respected by pit group 1.

4.7.8 Ditch D1 (G5) was situated to the east of pit group G1 and tree throw [53], at a distance of *c.*27m and was orientated on the same alignment. The ditch appeared heavily truncated, with a maximum width of 0.5m and a maximum depth of 0.2m. A possible terminal was identified at the ditch's southernmost extent, however given the shallow nature of the ditch this interpretation was uncertain, and it may merely indicate an area of the ditch entirely removed by post-medieval agricultural activities. The ditch was filled with a dark orange brown silty fill with chalk and flint inclusions, none of which were humanly struck, and no artefacts were recovered from the feature. Whilst the associated of this ditch with G1 is tentative, the similarity in alignment is of note, and suggests association with features of this period. The field boundaries recorded on the first edition OS map are on a north-northwest to south-southeast alignment; a notably different orientation to that of D1.

Pit or posthole cluster (G3)

4.7.9 A group of 12 small pits or postholes G3, was situated to the west of pit group G1. The features were all of small to medium dimensions, measuring between 0.3m and 0.6m in diameter, and between 0.15m and 0.4m in depth, varying in depth over the involution stripes. Whilst some appeared to have elongated oval or irregular shapes in plan, it is likely they comprised intercutting circular features, not identified during excavation and hard to pull apart in the post-excavation process due to the similarity in their homogenous silty fills. 9 of the pits or postholes within this group formed a rough ring with a diameter of *c.*12m, with the remaining three pits or postholes situated inside the ring. Whilst the features varied in their form and regularity, two stand out as being most regular, [56] and [62]. Both were located on the eastern edge of the group, are similarly aligned to G1, and are most convincing as postholes (Figure 5). Should all or most of the features represent postholes it is possible the group formed a structure.

4.7.10 A very small assemblage of artefacts was recovered across G3 comprising a single sherd of undiagnostic prehistoric pottery, five flint flakes and a blade from pit or posthole [31] along with a further flake and bladelet from posthole [62]. The flintwork was predominantly undiagnostic, considered of broadly Mesolithic to Early Bronze Age date. Environmental sample <2> from feature [31] within this group yielded fired clay, along with charcoal, hazel nut shell, and charred wheat and cereal grains, similarly to other Period 2 soil samples. The location of the cluster along with the limited flintwork and environmental remains recovered might suggest a Period 2 date for the group, although it remains possible the group was associated with Period 1 or another period of activity. It is hoped that radiocarbon dating can clarify to which period or phase of activity this possible structure relates.

4.8 Period 3: Post medieval/ modern (Figure 6)

4.8.1 Perhaps rather surprisingly given the sites location, there was no evidence to suggest use during the latter part of the prehistoric or Roman era, and just a single tiny sherd of early medieval pottery in pit [124], fill [125], most likely derived from sporadic manuring of the site in this period attests to limited early post Roman activity on the site.

4.8.2 The next definitive evidence of use of the site is of 19th to 20th century date and comprises a rough group of 8 small pits and postholes, G6, located towards the south-westernmost corner of the area. A small assemblage of artefacts including brick fragments, clinker, coal and welsh slate was recovered across the group.

4.8.3 A further pit, [15/004], located in the east half of the area, initially identified during the evaluation, was also probably of this date as two large sherds from an unglazed red earthenware flower pot were recovered from the feature.

4.9 Undated (Figure 7)

4.9.1 A total of 26 small discrete features remain undated at this stage pending further analysis. Of note is a group of two similar pits (G2) situated between pit group G1 and ditch D1. Both pits were circular, with diameters of between 0.85m and 1.22m and depths of between 0.26m and 0.45m. Both were filled with single dark brown clay silt fills with occasional chalk and flint inclusions. Pit [122], the westernmost of the two contained three pieces of struck flint, two of which comprised irregular flakes, the third comprised a retouched piece with thin removal scars characteristic of a core tool of Mesolithic to Early Bronze Age date.

4.9.2 Another pit group (G4) was also devoid of artefacts, save for a tiny piece of most likely intrusive early medieval pottery from pit [124]. Pit group G4 comprised of five shallow, slightly irregular pits with silty fills, of which two, [66] and [68] were slightly intercutting. It cannot be ruled out that all the features in this group may comprise tree throws. However, once again, their alignment is interesting, as they fall along the alignment of pit group 1 and parallel to D1. Of note is the stratigraphic relationship between pit [124] and G1 pit [96]. On excavation, it was apparent that Period 2 pit [96] cut pit [124], suggesting that at least some of pit group G4 may predate G1.

4.9.3 Another pit in G4 [39] is also situated along the same alignment as pit group 1, similar in its irregularity to G4 but smaller, measuring 1.4m x 0.7m with a maximum depth of 0.15m. Similarly to pit [28] and G3 features, it varied in depth over the involution stripes and may have comprised multiple intercutting features not identified during excavation. It yielded a piece of sarsen with what appeared to be a flat worn grinding face, and may have derived from a saddle quern.

4.9.4 It is hoped that with further analysis, the relationship of these undated features to Period 1 and Period 2 activity can be ascertained. Certainly they are considered most probably of prehistoric date.

5.0 THE FINDS

5.1 Summary

5.1.1 A moderate assemblage of finds was recovered and were washed and dried or air dried as appropriate. They were subsequently quantified by count and weight and bagged by material and context. The hand-collected bulk finds are quantified in Appendix 2; material recovered from the residues of environmental samples is quantified in Appendix 3. A find was assigned unique registered finds numbers (Table 3, detailed in section 5.10). All finds have been packed and stored following CIfA guidelines (2014).

RF No	Context	Material	Object	Wt (g)
1	119	BONA	PIN	6
2	99	STON	?	6500

Table 3: Summary of the Registered Finds

5.2 **The Flintwork** by Karine Le Hégarat

Introduction

5.2.1 A total of 796 pieces of worked flint weighing 17,875g and four flint hammerstones weighing 1380g were recovered from the excavation together with a very small quantity of unworked burnt flint fragments (414g). The material was hand-collected and subsequantly retrieved from bulk soil samples. Most of the assemblage (763 pieces) came from a series of Middle Neolithic to Early Bronze Age (Period 2) pits. The groups of flints from these contemporary pits are generally in good condition, and some of the features also contained pottery, fired clay, animal bones and charred plant remains. A small assemblage (15 pieces) was also found from an Early Neolithic pit (Period 1), although the flints from this feature may be mixed, and some pieces may have been inadvertently incorporated into the pit.

5.2.2 This report characterises the nature of the assemblage, assesses its significance and its potential to further understand the nature and chronology of the occupation of the site, and it recommends any further work required.

Methodology

5.2.3 The pieces of worked flint were quantified by count and weight. They were individually examined and classified using standard set of codes and morphological descriptions (Ballin 2021, Butler 2005, Ford 1987, Inizan et al 1999 and Piel-Desruisseaux 2016). Important technological information was noted, and the condition of the artefacts (evidence of burning or breakage, degree of patination and degree of edge damage) was recorded. Macroscopic use-wear was recorded, and several pieces, including unmodified pieces appear to have been used; however, this will have to be confirmed using microscopic analysis. Dating was attempted where possible. All data have been entered onto a Microsoft Excel spreadsheet. All struck flints should be retained for long-term curation.

5.2.4 The fragments of burnt unworked flint were scanned for worked pieces. Information regarding the degree of calcination and fragmentation were recorded onto a Microsoft Excel spreadsheet. The material was then discarded.

Raw material and condition

5.2.5 In total, 771 pieces (or 96.3% of the total assemblage) display patination, varying from incipient traces of light blue discolouration to a heavy white. A total of 202 pieces were only lightly patinated, 374 pieces were moderately patinated, and 195 were heavily patinated. Encrustation of light brown sediments or minerals was also recorded on 406 pieces. Where the edges of patinated pieces have been damaged, a light to dark grey flint was most commonly noted. The outer surface was mostly a stained chalky cortex of variable thickness, measuring between 1mm and 10mm. A total of 19 pieces of Bullhead-beds flint, which exhibits an olive-green cortex with an underlying orange band, was recovered. Both raw materials would have been available locally. Overall, the pieces, exhibit good edge condition or display only minimal signs of weathering. This indicates that the flints have undergone minimal post-depositional disturbance, or that they weren't exposed for long prior to burial. A total of 381 pieces were recorded as broken.

Provenance

Category type	Period 1	Period 2	Remaining assemblage**	Total	%
Flake	9	585	16	610	76.3%
Blade, Bladelet, Blade-like flake	3	90	1	94	11.8%
Chip	1	21		22	2.8%
Irregular waste		16	5	21	2.6%
Core, Core fragment		25		25	3.1%
Retouched form	2	22		24	3.0%
Hammerstone		4		4	0.5%
Total	15	763	22	800	100.0%
Unworked burnt flint (weight in g.)	-	414	-	414	

Table 4: summary of the struck flint and unworked burnt flint fragments by provisional period; *includes a Levallois flake; **flint from topsoil and unstratified deposits and from contexts that are currently undated

5.2.6 The flints were recovered from the western part of the excavated area. Most pieces of struck flint were recovered from pits (773 pieces from ten pits). Nine of the pits are dated to the Middle Neolithic to Early Bronze Age period (Period 2); they produced 763 pieces (95.3% of the total assemblage of struck flints). A further 15 pieces came from a pit currently dated to the Early Neolithic period (Period 1). The remaining 22 pieces were recovered from an undated pit, the topsoil and from unstratified deposits (Table 4). All the burnt unworked flint

fragments came from Late Neolithic / Early Bronze Age period (Period 2) pits. They were thinly distributed within six pits.

The assemblage

Period 1 – Early Neolithic

5.2.7 Fifteen pieces of worked flint were recovered from the single fill [29] of pit [28], located in the south-western part of the excavated area (Table 5). No unworked burnt flints were present in the feature. The pit contains ceramic that exhibits traits suggestive of the Early Neolithic Plain bowl tradition. The edge condition of the flints varies. Overall, they are in a good condition, although minor edge damage was recorded on a few pieces. The surface condition was also variable with ten pieces displaying varying degrees of patination. The assemblage includes nine flakes, a blade, a bladelet, a blade-like flake, a chip, an end-scraper crudely made on a thick flake, and a possible piercer manufactured on a blade-like flake. The blade and bladelet likely derive from a Mesolithic or Early Neolithic blade-orientated industry. The blade, one of the flakes and the piecer appear to display signs of use-wear. The varied conditions of the flints and the assemblage suggest that some redeposition may have occurred.

Category type	**Pit [28]**	**%**
Flake	9	60.0%
Blade	1	6.7%
Bladelet	1	6.7%
Blade-like flake	1	6.7%
Chip	1	6.7%
End scraper	1	6.7%
?Piercer	1	6.7%
Total	15	100.0%

Unworked burnt flint (weight in g.)	-

Table 5: summary of the struck flint and unworked burnt flint fragments from Early Neolithic (Period 1) pit [28] by category type

Period 2 – Middle Neolithic to Early Bronze Age

5.2.8 In total, 759 pieces of worked flint and four flint hammerstones and a small quantity of unworked burnt flints were recovered from ten pits dated to Period 2 (Table 6). Although five pits contained very small quantities of worked flints (six or less pieces each), four pits (pits [53], [79], [96] and 118]) produced assemblages of between 44 and 353 pieces. Three of the flint-rich pits produced varying quantities of Grooved ware ceramic sherds (pit [79], pit [118] and pit [53]). The latter also contained some sherds of Beaker pottery. Three of those flint-rich pits ([79], [96] and [118]) were also associated with animal bones and marine molluscs including mussels, and pit [79] contained some fired clay.

Re	Group	Associated with Groove ware (GW) and Beaker (BK) ceramic	Presence of animal bones	Presence of fired clay	Flint no	Burnt unworked flint (weight in g)
Pit [53]	-	GW + BK			44	15
Pit [79]	G1	GW	v	v	180	42
Pit [96]	G1		v		173	4
Pit [118]	G1	GW	v		353	285
Pit [70]	G2 - East of G1					60
Pit [122]	G2 - East of G1				3	
Pit [62]	G3 West of G1				2	
Pit [84]	G3 West of G1				1	8
Pit [86]	G3 West of G1				1	
Pit [31]	G3 West of G1				6	
Total					763	414

Table 6: quantification of the struck flint and burnt unworked flint fragments from Late Neolithic / Early Bronze Age (Period 2) pits

5.2.9 Only small differences were noted regarding the surface and the edge conditions of the flints between the pits. A similarly high level of patination sometimes associated with concretions was present in all the assemblages. Overall, the flints were in a fresh condition, although the pieces from pit [96] were slightly more weathered. The fact that most flints exhibit good edge condition or minimal signs of weathering suggest that the material has undergone negligible post-depositional disturbance, and that the flints are likely to be contemporary with the features and the pottery. Regarding the composition of the assemblages from the four flint-rich pits, the composition of pit [96] differs from the compositions of the assemblages from the other pits, which are rather comparable. Pit [96] contained far more larger pieces than the other three pits, including cores and pieces of irregular waste suggesting a different pattern of deposition or a specific activity.

5.2.10 The overall composition of the assemblage is presented by group and pit in Table 5, and it is further detailed by pit fill in Table 6. The flintwork consists principally of waste debitage, and retouched pieces occurred only sporadically, totalling 22 pieces (3% of the total pit assemblages). Nonetheless, several unmodified artefacts appear to exhibit possible use-wear; and further microwear analysis is likely to confirm this. A relatively small range of tools was present, with the microdenticulates being best represented (n=9) followed by the scrapers (n=4). Very few diagnostic tools were present; however, a chisel arrowhead was recovered from pit [96]. A prismatic core tool, also from pit [96], displays characteristics of similar tools recovered from Grimes Graves (Saville

1981, J Lord pers comm) and Seaford Head Sixth Form Centre (ASE 2026). Something else that stands out from the pit assemblages is the presence of several discoidal / Levallois-like cores, and flakes with typically arranged removal scars on the dorsal surface and/or facetted butts. Whilst a Levallois flake was recorded from pit [53], more are likely to be present. These cores and flakes are characteristic of the Middle / Late Neolithic period.

5.2.11 Pit [53] – Pit [53] produced 44 pieces of worked flint, with most pieces recovered from the intermediate fill [55] (n=26). No worked flints were recovered from the basal fill. The assemblage comprises 35 flakes, one of which is a Levallois flake, a blade, two bladelets, a blade-like flake, a chip, a piece of irregular waste, an end scraper, a core tool, and a miscellaneous retouched piece. The flakes are broadly consistent with a Middle Neolithic to Early Bronze Age date, although a small number might be later. The Levallois flake was recovered from the intermediate fill [55]. Scrapers are difficult to date, but the end scraper from the basal fill [54] is characteristic of Middle/Late Neolithic scrapers. Three pieces appear to display sign of use-wear.

5.2.12 Pit [79] G1 - Pit [79] produced 180 pieces of struck flint. The features contained six fills; however, most flints (n=80) came from the secondary fill [77] (Table 6). The basal fill [78], which contains 22 pieces, has produced C14 dates of 2920-2880 cal BC (SUERC-99023; 95% probability) and 3100-2915 cal BC (SUERC-99024; 95% probability) (see 5.13). The flints are in a good condition, and they form a coherent group. The assemblage is largely made-up of flake-based waste, although a small blade component was also recorded. Whilst a large quantity of flakes exhibits unprepared striking platform, other pieces indicates that some care was taken whilst knapping. Three discoidal/Levallois-like cores were recorded, and several possible Levallois flakes were also noted. Based on morphological and technological attributes, the pieces indicate a Middle – Late Neolithic date. Whilst no refits were identified, some are likely to be present. The pit produced six retouched pieces including four microdenticulates, an end scraper and a miscellaneous retouched piece. Two microdenticulates are made on blades, one on a bladelet and one on a blade-like flake.

5.2.13 Pit [96] G1 – A total of 173 pieces of worked flint were recovered from pit [96]. Most of the pieces came from the basal fill [97] (n=112). The remaining 61 pieces were evenly shared between the intermediate fill [98] and the upper fill [99]. Flakes were again best represented (n=111); however, a small bade component was also present (n=27). One of the blades was large measuring 106.6mm in length and 40.5mm in width; it displays a facetted butt. A higher proportion of cores was present in this pit compared to the other three flint-rich pits. A total of 17 cores were recorded, including a discoidal/Levallois-like core. Some of the cores and the pieces of irregular waste were also larger than the flints from the other pits. This may indicate a different pattern of deposition or a specific activity. Four retouched pieces were recorded in the pit; the basal fill [97] produced a diagnostic chisel arrowhead and an end scraper made on a relatively thick blade-like flake, the intermediate fill produced a piercer, and the upper fill produced a prismatic core tool. The elongated artefact weighs 130g.

5.2.14 Pit [118] G1 – Single fill [119] produced a substantial assemblage of 353 flints. The flintwork forms a coherent group that is likely to be mostly contemporary with the Groove ware pottery, although a few blades / bladelets may be earlier. The assemblage is dominated by flakes (n=288). They are mostly thin, and

relatively small, with thin removal scars on the dorsal face. Platform-edge abrasion was noted on numerous pieces, as well as facetted butts. Three cores were present including a discoidal / Levallois-like core. Discoidal / Levallois-like cores are most characteristic of the Middle / Late Neolithic. In addition to the cores, the presence of two hammerstones confirms that flint knapping was taking place. The retouched tools comprise five microdenticulates, an end scraper, a retouched flake, and a miscellaneous retouched piece. The scraper is characteristic of Middle / Late Neolithic scraper. One is made on a flake, two on blade-like flakes and two on blades, one of which may be earlier. Two of the microdenticultes exhibit further retouch: some abrupt retouch, and some possible gloss was noticed on one of them. Refits are likely to be present.

	.	G1			G2		G3				Total	%
Category type	Pit [53]	Pit [79]	Pit [96]	Pit [118]	Pit [70]	Pit [122]	Pit [62]	Pit [84]	Pit [86]	Pit [31]		
Flake	34	142	111	288		2	1	1	1	5	585	76.7%
Blade	1	10	12	14						1	38	5.0%
Bladelet	2	6	3	7			1				19	2.5%
Blade-like flake	1	8	12	11							32	4.2%
Levallois flake	1										1	0.1%
Chip	1	1	5	14							21	2.8%
Irregular waste	1	2	7	6							16	2.1%
Multiplatform flake core			8	1							9	1.2%
Single platform flake core			3								3	0.4%
Discoidal / Levallois-like core		3	1	1							5	0.7%
Fragmentary core		2	5	1							8	1.0%
End scraper	1	1	1	1							4	0.5%
Piercer			1								1	0.1%
Microdenticulate		4		5							9	1.2%
Chisel arrowhead			1								1	0.1%
Prismatic tool			1								1	0.1%
Other core tool	1										1	0.2%
Retouched flake				1							1	0.1%
Misc. retouched piece	1	1		1		1					4	0.5%
Hammerstone			2	1							3	0.4%
?Hammerstone				1							1	0.1%
Total	44	180	173	353	-	3	2	1	1	6	763	100.0%

Unworked burnt flint (weight in g.)	15	42	4	285	60	-	-	8	-	-	414	

Table 7: summary of the struck flint and unworked burnt flint fragments from Neolithic - Early Bronze Age (Period 2) features by category type

5.2.15 Pit [122] G2 and pits [31], [62], [84] and [86] G3 – The pits contained just 13 pieces of worked flint. The small assemblage comprises ten flakes, a blade, a bladelet and a miscellaneous retouched piece. The bladelet from the fill [63] of pit [62] derive from blade-orientated industry, and it is likely to be residual. One side of the retouched piece from the fill [123] of pit [122] exhibits a series of thin flake removals which are reminiscent of flakes removed whilst working a core tool. It also displays a flake scar with a hinge termination, and black marks. The other side displays evidence of a thermal fracture.

The remaining assemblage

5.2.16 The remaining pieces (n=28) were thinly distributed. They came from an undated pit (1 piece), from the topsoil (2 pieces) and from unstratified deposits (19 pieces). The assemblage comprises 16 flakes, a blade-like flake and 5 pieces of irregular waste (Table 8). The pieces are fairly undiagniostic.

Category type	**Remining material****	**%**
Flake	16	72.73%
Blade-like flake	1	4.55%
Irregular waste	5	22.73%
Total	22	100.00%

Unworked burnt flint (weight in g.)	-

Table 8: Summary of the remaining struck flint and unworked burnt flint fragments by category type

5.3 **The Prehistoric Pottery** by Anna Doherty

Code	**Description**
FLQU1	Moderate, very ill-sorted flint of 0.5-8mm with moderate to common ill-sorted quartz of 0.2-0.8mm
FLQU2	Sparse ill-sorted flint of 0.5-4mm with moderate quartz of 0.1-0.2mm (very rare grains up to 0.5mm)
FLQU3	Rare/sparse flint of <1mm in a silty matrix with occasional larger grains up to 0.5mm
QUAR1	Common quartz of c. 0.5-0.6mm
QUSH1	Moderate/common quartz of c. 0.5-0.6mm with moderate voids or occasional extant shell of c. 1-3mm
SHEL1	Abundant ill-sorted shell of c. 0.5-8mm (probably from a fossil shell source) in a low-fired silty matrix

Table 9: Prehistoric pottery fabric descriptions

Period 1: Early Neolithic

5.3.1 A small assemblage of predominantly earlier prehistoric pottery was recovered during the excavation, amounting to 111 sherds, weighing 0.77kg. The pottery includes a single pit group of probable Early Neolithic Plain Bowl,

predominantly from a single vessel and a broadly Late Neolithic-Early Bronze Age assemblage, primary recovered from pit group G1. Though fragmentary, this appears to include some rare examples of Grooved Ware from East Sussex as well as a separate pit group containing a few probable sherds of Beaker.

5.3.2 The pottery was examined using a x 20 binocular microscope and quantified by sherd count, weight, and estimated vessel number (ENV) on *pro forma* records and in an Excel spreadsheet. Fabrics were recorded according to a site-specific fabric type-series, following the guidelines of the Prehistoric Ceramics Research Group (PCRG 2010; Table 9).

5.3.3 Fill [29] of pit [28] contained 56 sherds, weighing 464g, largely from a single vessel. The main vessel in this pit group is made up by body sherds in a very coarse ill-sorted flint-tempered fabric (FLQU1), containing coarse quartz sand. The vessel has a moderately thick-walled profile and is relatively well smoothed on the internal surface. All these attributes are suggestive of the Early Neolithic Plain bowl tradition although no diagnostic feature sherds are present. Four small body sherds from a separate vessel were also noted in this group. Its fabric (FLQU2) is slightly less coarse and contains finer quartz sand.

Period 2: Late Neolithic/Early Bronze Age

5.3.4 A total of 55 sherds, weighing 304g, from just eight estimated vessels are attributed to Period 2 (quantified by fabric in Table 10). These come predominately from pits [79] and [118] (G1), with four additional sherds from pit [53]. The 39 sherds, weighing 226g, from fills [75], [77] and [78] of pit [79] possibly but not certainly all originate from the same vessel, although there is some variability of wall-thickness between the sherds. All are in a coarse low-fired shelly ware (SHEL1). A possible shoulder sherd features two horizontal raised cordons, while thick-walled body sherds also feature cordons of uncertain orientation which appear to have been pinched out from the wall.

Fabric	Sherds	Weight	ENV
FLQU2	1	10	1
QUAR1	4	13	2
QUSH1	9	50	1
SHEL1	40	231	4
Total	54	304	8

Table 10: Quantification of prehistoric pottery fabrics from Period 2

5.3.5 The appearance of cordons on the vessel or vessels from pit [79] is suggestive of the Late Neolithic Grooved Ware tradition. Grooved Ware assemblages are most typically associated with grog-tempered rather than shelly fabrics. On the other hand, there are no substantial contemporary assemblages from East Sussex with which to compare this group and shelly fabrics have occasionally been associated with Grooved Ware in the wider South-East region, for example at Franks' Sandpit, Betchworth (Cotton et al 2017).

5.3.6 This attribution appears to be confirmed by associated radiocarbon dates on charcoal and charred plant remains from fill [78] (SUERC-99023; 4289 ± 24; 2926-2879 cal BC; SUERC-99024; 4394 ± 24; 3078-2929 cal BC). The earlier

of the two determinations wholly pre-dates the date range as currently understood for the Grooved Ware tradition in Britain and Ireland, but this presumably represents charcoal which was old at the time of deposition. The later of the two dates on charred hazelnut shell is consistent with Grooved Ware, although it would be suggestive of a date very early in the known range of this tradition (*c* 2900-2100BC; Garwood 1999, 152). It is considered very unlikely that the pottery belongs to the only other pottery tradition which would have been current in this period in Southern Britain: Peterborough Ware. The latter is almost exclusively associated with flint-tempered fabrics and is characterised by extensive use of impressed decoration.

5.3.7 Fill [119] of pit [118] also contained predominantly shelly fabrics, including coarse shelly ware SHEL1 and a slightly better-fired sandy fabric with moderate finer shell (QUSH1). A single moderately coarse flint-tempered ware with fine quartz was also noted (FLQU2). Several fragmentary sherds from a single diagnostic vessel were recorded from a vessel with an open profile with mouldings on the rim interior, rim top and rim exterior with a low horizontal cordon on the body exterior. This would be broadly consistent with bucket shaped vessels of the Durrington Walls Grooved Ware tradition (for example Longworth 1971, fig 20, no 16 and 30; Wainwright and Longworth 1971, 240); however, open bucket shaped vessels are also a feature of Clacton style assemblages, and bevelled or moulded rims also occur, albeit less frequently (for example Wilson et al 1971, 98) so the precise substyle of the current assemblage remains ambiguous.

5.3.8 Fill [55] of pit [53] contained four sherds of pottery, weighing 13g, which appear to be of different character, very likely belonging to the Beaker tradition (*c* 2450-1820 BC). Two vessels are represented, both in similar quartz rich fabrics (QUAR1). Both appear to be from thin-walled vessels of relatively small diameter, one featuring a series of short, incised lines and the other, rows of comb-stabbing.

5.4 The Post-Roman Pottery by Luke Barber

Context	Fabric	Period	No	Weight	Comments (including estimated number of different vessels represented by type. ? = undiagnostic of form)
15/004	Unglazed red earthenware	LPM	2	23g	Flower pots x1 (x1 with flattened D-club rim and single horizontal incised line)
91	Refined whiteware	LPM	1	1g	?x1
125	Clay Hill/Early Ringmer flinty ware (SNL 5)	EM	1	2g	Cooking pot x1 (oxidised, externally sooted. Very worn)
25	Yellow ware	LPM	1	46g	Bowl x1 (heavy carinated mixing bowl)

Table 11: Pottery assemblage (EM – Early Medieval c. 1050-1200/25; LPM - Late Post-Medieval c. 1750-1900+)

5.4.1 The archaeological work recovered five sherds of post-Roman pottery, weighing 72g, from four individually numbered contexts. The material has been fully listed in Table 11 as part of the visible archive. The medieval sherd has been allocated the Lewes fabric code (Barber in prep) as well as a common name, while post-medieval ones have been allocated common name only. Overall, the pottery consists of small to medium-sized sherds with moderate to extensive signs of abrasion. As such the material appears to have been reworked.

5.4.2 The single medieval sherd is notably worn and may well be intrusive in its context. It is probably the result of sporadic manuring arable land with domestic refuse between *c* 1150 and 1225. The remainder of the assemblage represents a background scatter of domestic waste that can all probably be placed between the mid-19th and early 20th centuries.

5.5 The Ceramic Building Material by Rae Regensberg

5.5.1 Four pieces of brick weighing 171g were recovered from the fill of pit [37]. Three of these had the same coarse orange fabric with sparse quartz and calcareous inclusions. These pieces were all abraded with no surfaces remaining, although the fabric is consistent with post-medieval brick. The fourth piece was composed of a very fine almost sterile fabric that was fired almost to vitrified level. It had very sharp arrises, cut sides, fine mould sand and was almost fully reduced. It was machine manufactured and therefore has a late 19th to 20th century date range.

5.5.2 All the material was recorded by form, weight, complete dimensions (when present) and fabric, and entered into an Excel spreadsheet.

5.6 The Fired Clay by Stephen Patton

5.6.1 No fired clay was found during the evaluation and a very small assemblage weighing a total of 325g was recovered during the excavation. A piece weighing 9g was from the topsoil and the remaining pieces were from Middle Neolithic to Early Bronze Age pit [79]. The material appears to be daub as many of the fragments have easily identifiable flat surfaces. However, there are no wattle impressions or other diagnostic features to make the identification of daub certain. The assemblage is of significance as finding fired clay from that period of prehistory in Sussex is rare. Late Neolithic / Early Bronze Age daub is of importance as there is very little definite evidence for wattle and daub buildings in the UK until the Bronze Age.

Method

5.6.2 The fragments were examined with the naked eye for diagnostic characteristics indicating form and/or function and recorded on *pro-forma* archive sheets and in an Excel spreadsheet. Fabrics were identified using a x20 magnification binocular microscope.

Distribution

5.6.3 Table 12 shows the quantification of fired clay by context. Pit [79] is the central pit within G1 and most of the assemblage is from the secondary fill within that feature.

Context	Interpretation	Parent Context	Count	Weight (g)
25	Topsoil	N/A	1	9
73	Fill, upper	79	1	17
74	Fill, intermediate	79	2	21
77	Fill, secondary	79	33	278
Grand Total			37	325

Table 12: Quantification of fired clay by context

Fabric

5.6.4 Two fabrics were identified in the assemblage. F1 is a fine silty clay with moderately frequent to common angular chalk inclusions 1-5mm and rare up to 8mm. F2 is a fine silty clay with no inclusions. The angular shape of the chalk inclusions in fabric F1 suggests that they were added to the clay rather than naturally occurring.

5.6.5 All the assemblage is made from fabric F1 apart from the fragment from the topsoil and possibly one piece from fill [77] in pit [79]. This single fabric F2 piece from pit [79] has a small area of flat surface like the rest of the material from that feature. This indicates that that it is from the same probable daub source and is possibly a piece of fabric F1 that does not contain chalk.

Form

5.6.6 The single topsoil piece of fired clay is a hard ceramic fragment with two adjoining flat surfaces at approximately 100° angle. It is oxidised throughout to a mid-red / orange colour and is somewhat abraded. Its original form is not discernible but the heat exposure to cause the ceramic change and flat surfaces indicates that it could have been from some type of heat resistant clay structure such as an oven.

5.6.7 The probable daub from pit [79] is light orangey pink in colour with the flat surfaces being a paler creamy pink colour. The fragment from fill [74] has a flat surface and 30 fragments out of 33 from fill [77] have flat surfaces. Most of these surfaces are straight and two are gently curved. The fragments are very friable suggesting that they have been sun baked hard rather than exposed to fire. Potentially the fragments are indicative of having originally been from a daub structure; however, what type of structure this was not identifiable from the clay.

Discussion

5.6.8 It is not possible to date or make further comment on the fragment of fired clay from the topsoil, and whilst it has been exposed to heat sufficiently to go through the ceramic change its original form is not identifiable.

5.6.9 The material from Period 2 could be evidence of some type of daub structure having been within the vicinity of pit [79]. Habitation structures have been identified and dated to the earliest part of the Neolithic in the UK, possibly as early as the 41st or 40th century BC (Sheridan 2013, 284), but definitive

evidence for wattle and daub structures prior to the Bronze Age is extremely rare. Predominantly for the Neolithic and Early Bronze Age this construction technique is presumed rather than proven based upon post holes, ethnographic evidence, and examples from Europe. However, of similar date to the fired clay from the Rottingdean excavation are structures identified during excavations at Durrington Walls near Stonehenge. One structure is described as: "*its wall survived as a square setting of stakeholes, forming a house with rounded corners. Pieces of daub and the remains of a puddled chalk matrix along the outer face of the wall on its west side provide evidence for a wattle, daub and chalk plaster wall*." (Parker Pearson et al 2011, 82). It is therefore plausible that the fired clay from pit [79] is also daub dating to the Late Neolithic / Early Bronze Age, and if so then this assemblage would be unique in Sussex and rare within the UK.

5.7 **The Geological Material** by Luke Barber

5.7.1 The excavations at the site produced 112 pieces of stone, weighing just over 21.5kg, from 16 individual contexts. The material has been fully listed on pro forma for archive with the resultant data being used to create an Excel spreadsheet as part of the digital archive element. The full assemblage has been listed in Table 13 as part of the visible archive.

5.7.2 Most of the assemblage was recovered from Period 2 (Middle Neolithic/Early Bronze Age) features (100/20,751g), the remainder coming from unphased or post-medieval deposits. Nearly all the material consists of unworked pieces of stone that occur naturally on the site, deriving from the chalk or the overlying Tertiary beds. Most of the remaining pieces appear to have been locally available on the beach. Although most pieces are unworked many, particularly the Sarsen fragments, show signs of having been burnt though this may simply have been the result of heating and cooling isolated boulders to break them up and remove them from cultivated land rather than any other purpose. Despite a close examination of all only one fragment, from undated pit [39], fill [40] (though suspected of being Neolithic), appears to have part of a flat worn grinding face. It is likely this is from a saddle quern, but to what extent the others are from querns or heat-shattered natural boulders is impossible to say. Certainly, Sarsen sandstone was the most used stone type in the area for saddle querns during the Neolithic and Early Bronze Ages (Barber 2015a).

5.7.3 The quartzite cobbles were all recovered from Period 2 pits, but none show any signs of use wear. Despite this it is almost certain they were deliberately collected from the beach with the intention of pressing them into service as polishing/sharpening stones, a point well illustrated by the much larger concentration of them noted at Peacehaven (Barber 2015b). The only other Period 2 stone of note is the large chalk boulder RF<2> from pit [96], fill [99]. This pits three fills (contexts [97], [98] and [99]) produced the largest feature group of stone – 65 pieces, weighing 14,996g – but the mix of types and morphology of the pieces does not suggest any deliberate congregation of material. The only stone that would not have been naturally available locally consists of the coal and Welsh slate that are clearly late post-medieval introductions to the site.

Context	Type	No	Weight	Comments
40	1a Coarse ill-sorted ferruginous sast	6	517	Irregular
40	2a Sarsen-type sast	1	51	Light grey, friable with some coarser quartz incl. x1 flat face - poss saddle quern
54	3a Wealden clay ironstone	1	21	Shattered pebble
55	2a Sarsen-type sast	1	15	Irregular
73	2a Sarsen-type sast	15	3414	Irregular. Heat fractured. Part surface of original boulder
75	2a Sarsen-type sast	1	13	Irregular
77	4a Quartzite	1	905	Flat cobble. Grey. No obvious human wear
78	4a Quartzite	1	189	Flat cobble. Pinkish. No obvious human wear
78	5a Flinty fissure fill	1	23	Irregular
91	6a Welsh slate	1	19	5mm thick
97	4a Quartzite	1	1248	Cobble 'triangular' form. Pale orange. No obvious wear.
97	3a Wealden clay ironstone	1	84	Flat cobble/water worn
97	7a Hythe Beds Lower Greensand	1	644	Worn cobble (flattened)
97	8a Downland flint	2	53	Spherical with cortex. Probably echinoid fossils
97	8b Flint pebble	1	5	Brown (beach)
97	2a Sarsen-type sast	20	2083	All irregular. Friable
98	9a Chalk	1	45	Irregular
98	2a Sarsen-type sast	26	2510	All irregular. Friable/burnt. No sign of wear
99	2a Sarsen-type sast	8	1365	All irregular. No sign of wear
99	8a Downland flint	3	19	x1 spherical/fossil
99	9a Chalk	1	6500	Irregular lump (weathered) with area of shallow striations (slightly wavy). No obvious order/pattern. Accidental/doodling
101	2a Sarsen-type sast	1	17	Irregular
105	10a Coal	2	2	
110	2a Sarsen-type sast	2	41	Irregular
119	4a Quartzite	2	340	Cobble. Pale purple. Elongated, frag
119	2a Sarsen-type sast	10	1234	Irregular, some burnt
125	2a Sarsen-type sast	1	175	Irregular

Table 13: Stone assemblage

5.8 The Metallurgical Remains/Magnetic Material by Luke Barber

5.8.1 A very small quantity of material initially identified as slag was recovered from the site (35/374g). The material is fully listed in Table 14 as part of the visible archive. All was recovered by hand on site – no material being recovered from the environmental residues.

Context	Type	No	Weight	Comments
38	Artificial compressed coal lumps	2	55	x1 complete example - 46x39x29mm, 39g
38	Clinker	15	148	Black, aerated, brittle
38	Fuel ash (coal)	3	145	Part molten, some incorporating coal shale
91	Clinker	13	23	Black, aerated, brittle
103	Clinker	1	1	Black, aerated, brittle
110	Clinker	1	2	Black, aerated, brittle

Table 14: The slag assemblage

5.8.2 The entire slag assemblage appears to relate to the burning of coal or its by-products during the late post-medieval period. The majority was recovered from pit [37], fill [38] where both unburnt artificial coal was present as well as the more typical burnt waste products of clinker and the denser fuel ash slag. The small piece of clinker from Period 2 pit [53] is almost certainly intrusive but the remainder of the assemblage is not at odds with the date of the deposit it was recovered from.

5.9 The Animal Bone by Emily Johnson

Context	Sample	N	HC	ENV	NISP	Preservation %		
						Poor	*Moderate*	*Good*
73		9	9	0	3	100	0	0
74		4	4	0	1	100	0	0
76		14	14	0	0	100	0	0
77		1	1	0	1	100	0	0
97		1	1	0	1	100	0	0
119	12	367	198	169	136	88.6	8.4	3.0
Total		396	227	169	142	89.4	7.8	2.8

Table 15: Zooarchaeological assemblage by context showing total fragment count (N), the number of hand-collected (HC) and bulk-sampled (ENV) specimens, the number of identifiable specimens (NISP) and the proportion of bones displaying varying preservation levels. Note that the bulk sampled specimens represent material from the >8mm fraction and any identifiable material from the smaller fractions only

Introduction

5.9.1 A small assemblage of faunal material was recovered during the excavation. Hand collected specimens totalled 77 animal bones and weighed approximately 984g. A further 237g of bone and 30g of burnt bone derived from

one environmental sample, [119] <12>. All contexts with animal bones dated to Period 2 (Middle Neolithic to Early Bronze Age) and were part of a possible pit alignment (G1) in OA2. Specimens were generally very poorly preserved (Table 15), with erosion likely due to soil conditions destroying much of the bone surface. As such, observation of bone surface modifications was almost impossible, except for heat exposure. This report will give a brief description of the animal bone assemblage and comment on its significance, archaeological potential, and recommendations for further work.

Method

5.9.2 The assemblage has been recorded onto an Excel spreadsheet. The hand collected assemblage was recorded in full, whereas for the bulk sample only specimens from the >8mm fraction and identifiable material from smaller fractions were recorded. This was due to the estimated thousands of indeterminate fragments from the 4-8mm and 2-4mm fractions. Where possible, bones were identified to species and element (Schmid 1972; Hillson 1999) and the bone zones present noted (Serjeantson 1996). Determination of sheep and goat specimens was not possible given the poor preservation of the assemblage, thus a combined ovicaprid class was used. Species of large deer were determined using Lister (1996), and measurements were taken on suid teeth to try to determine pig from wild boar using thresholds in Mayer et al (1998). Elements that could not be confidently identified to species, such as long bone, rib, cranial and vertebral fragments, have been categorised by taxa size (large/ medium/ small) and type (mammal/ bird/ fish).

Taxa	**NISP**	**Context**					
		[73]	[74]	[76]	[77]	[97]	[119] <12>
Cattle	1	0	0	0	0	1	0
Ovicaprid	2	0	0	0	1	0	1
Pig	77	0	0	0	0	0	77
Pig/ Wild boar	5	0	0	0	0	0	5
Red deer	4	0	0	0	0	0	4
Cattle/ Deer	1	0	1	0	0	0	0
Large mammal	12	3	0	0	0	0	9
Medium mammal	40	0	0	0	0	0	40
Indeterminate	254	6	3	14	0	0	231+
Total	396	9	4	14	1	1	367+

Table 16: Taxa abundance in the overall and individual context assemblages by NISP. Plus symbols indicate the presence of additional uncounted material from the bulk sample

5.9.3 Mammalian age-at-death data was collected where possible. The state of epiphyseal bone was recorded as fused, unfused, and fusing, and any determinations of age made using Silver (1969). Dental eruption and attrition were recorded on teeth within mandibles and maxilla using Grant's (1982) wear codes, with age determinations following Hambleton (1998) for pigs. The assemblage contained no measurable long bones of domestic mammals. Specimens have been studied for signs non-metric traits and pathology, although as noted above, these would have been incredibly difficult to identify

given the preservation of the assemblage. Modifications to bone surfaces were recorded where observed. No butchery evidence was visible. Evidence of heat exposure was recorded by type and zone, where the whole bone was not affected. Evidence of taphonomic agents such as gnawing, weathering, erosion, abrasion, and metal staining was also noted.
Results

5.9.4 A total of 90 specimens were identifiable to taxa, and a further 52 to taxa size and type (Table 16). Quantified indeterminate specimens numbered 254, although likely thousands of highly fragmented indeterminate bones were also present from the smaller fractions of [119] <12>. As all contexts related to possible pit alignment GR1, results are grouped by parent context below.

5.9.5 Four fills from pit [79] contained animal bone. Secondary fill [77] contained an ovicaprid humerus diaphysis; intermediate fill [76] contained 14 indeterminate fragments; intermediate fill [74] contained a cattle or deer metapodia diaphysis and three indeterminate fragments; and finally, three large mammal long bone fragments and six indeterminate specimens were recovered from upper full [73]. Context [97], the basal fill of pit [96], contained a cattle tibia diaphysis.

5.9.6 By far the largest assemblage of animal bone derived from context [119] and environmental sample <12>, representing the single fill of pit [118]. Taxa identified particularly featured suids (pig or wild boar), with 82 identifiable specimens. At this stage it is uncertain how many of these specimens represent domestic or wild animals, despite some tentative separation in Table 16. Measurements of the third molar in a refitting mandible put it over the minimum wild boar threshold of 40mm in terms of length (42.37mm; Serjeantson 2011), but the width remained indeterminate between the maximum domestic pig and minimum wild boar thresholds described in Mayer et al (1998).

5.9.7 The minimum number of individual suids was four, from fragments of four left calcanei. However, the skeletal representation of the specimens in the context suggest whole suids were not buried here. Vertebrae were rarely identified, with fragments of two pig atlases present and no partially identifiable fragments of medium mammal vertebrae, even qualitatively absent among the indeterminate material from the bulk sample. Mandibular and maxillary teeth, alongside some cranial fragments, suggest the likely presence of skulls, which is more likely represented by the highly fragmented indeterminate specimens from the smaller bulk sample residue fractions. The appendicular skeleton was well-represented, including the metapodia and to a lesser extent the phalanges. Unless the vertebrae are also represented amongst the indeterminate material, which is less likely than the cranium as not even partially identifiable vertebral material was recovered, the assemblage is likely largely comprised of suid heads and limbs.

5.9.8 The identified pig specimens gave some indication of age and sex. A pig/ wild boar mandible gave an age-at-death of 14-21 months (Hambleton 1998). Other unworn teeth, particularly third molars, indicate other juvenile individuals. Thirteen specimens contained fusion information, of which a proximal calcaneum and two distal metapodia were unfused. These fuse between 24-37 months suggesting slaughter prior to that age (Silver 1969). No specimens were recovered from the oldest age stage (42 months). The sexually dimorphic dentition of pigs led to the identification of one male (possibly wild boar) and

two female specimens. In addition, two further specimens require further study as their sex was indeterminate.

5.9.9 Other specimens identifiable to taxa in this context include an ovicaprid incisor, and two red deer left proximal metatarsals, one of which was refitted from three fragments. One of the metatarsals was noticeably larger than the other, suggesting two different-sized individual animals.

5.9.10 Partially identifiable bones included large and medium mammal diaphysis fragments, twelve rib fragments, and medium mammal cranial, mandibular, scapula and pelvis fragments. Indeterminate specimens quantified numbered 231 fragments, although thousands more were amongst the environmental material.

5.9.11 In terms of surface modification and taphonomy, almost all specimens suffered from varying degrees of erosive action. This likely contributed to butchery being unobserved, however evidence of heat exposure was identified. Low temperature scorching was present on a pig first phalanx, on medium mammal cranial and diaphysis fragments, and on eleven indeterminate specimens. This may represent roasting of joints, and possibly roasting marrow-bearing bones before marrow extraction (Serjeantson 2011, 62). High temperature burning (calcined and approaching calcined) affected medium mammal cranial and diaphysis fragments, and around 200 indeterminate fragments from the 2-4mm and 4-8mm environmental residue fractions. This type of burning is more likely the result of disposal in a domestic fire (Serjeantson 2011, 61). Qualitatively around 10% of the assemblage from [119] and environmental sample <12> was affected by heat exposure.

5.9.12 Although fracture freshness analysis was not performed on the assemblage as this technique requires well-preserved material; the completeness of the bones has implications for carcass processing techniques. The long bones present were not broken at midshaft, as would be expected for marrow extraction, rather they tended to be whole diaphyses with the epiphyses absent. Equifinality suggests several possible processes leading to this pattern of element completion. Given the poor preservation of the assemblage, the less robust epiphyses could have been lost. Canid gnawing may have similarly destroyed epiphyses, the zooarchaeological signature of which was then made invisible by erosion. Alternatively, this pattern may suggest specific carcass processing practices where rather than splitting bones at midshaft for marrow the bone was split into more pieces for boiling in a stew (Serjeantson 2011, 62).

5.10 The Shell by David Dunkin

5.10.1 The excavation produced 8 contexts containing marine shell with a total weight of 283g. There were nine environmental samples, seven of which contained marine shell: [75] <7>; [77] <8>; [78] <9>; [97] <3>; [98] <4>; [99] <5> and [119] <12>. Samples <10> [54] and <11> [55] contained land snails (probably of the *helicidae* family). The total assemblage only produced one context that weighed more than 100g. Context [119] <12> weighed a total of 170g. Table 17 shows the data relating to the eight contexts. Thus, all of the contexts contained very small amounts of marine mollusc. Furthermore, each of the contexts was comprised, almost exclusively, of infant/juvenile individuals. As a result of the very small size of the majority of the shells very little of the total assemblage

represents an adequate food source and because of this most of the individuals would have been inedible.

5.10.2 Preliminary analysis indicates that the total assemblage by weight is dominated by c 96%+ common mussel (*Mytilus edulis*). Very few of these shells were of adult size. The remainder of the shells were comprised of very small quantities of 8 other species. These are oyster (*Ostrea edulis*); limpet (*Patella vulgata*); common cockle (*Cerastoderma edule*); queen scallop (*Aequipecten opercularis*); variegated scallop (*Chlamys varia*); common whelk (*Buccinum undatum*); rough cockle (*Acanthocardia tuberculata*) and carpet shell (*Venerupis decussata*).

5.10.3 All of the marine shells were located in pits dated to Period 2 at the site (Middle Neolithic-Early Bronze Age).

Context No	Weight	Species (Total Number of Pieces)	Period	Feature Type
[75] [75] <7>	2g 4g	1 x infant oyster (complete) 50 x infant mussel (51)	2 Middle Neo-EBA	Pit
[78] [78] <9>	3g 3g	1 x mussel infant + c 10 x frags 1 x limpet frag 8 x infant mussel umbones + 5 x frags (25)	2	Pit
[097] [097] <3>	4g 19g	6 x mussel umbones + 3 x frags 52 x inf/juv mussel umbones + 30 x frags (91)	2	Pit
[098] [098] <4>	2g 3g	2 x mussel frags 12 x inf umbones mussel + 6 x frags (20)	2	Pit
[099] [099] <5>	2g 2g	4 x inf umbones mussel + 3 x frags 2 x umbones mussel + 1 x frag (10)	2	Pit
[112]	4g	3 x umbones + 12 x frags (15)	2	Pit
[119] [119] <12>	70g 100g	1 x adult queen scallop 1 x variegated scallop 2 x umbone juv whelk + 8 x frags 28 x umbones mussel + c 30 x frags 126 x inf/juv umbones mussel + c 130 frags 2 x frags variegated scallop 2 x right valves oyster (1 inf) 3 x frags rough cockle 2 x frags whelk 2 x frags carpet shell 2 x frags cockle (339)	2	Pit
77<8>	65g	88 x umbones mussel (includes 2/3 adults) + c 90 x pieces 1 x in left valve oyster 2 x inf variegated scallop pieces 1 x inf whelk piece (182)	2	Pit

Table 17: Quantification table of the marine mollusc assemblage

5.11 The Registered Finds by Alex Allen

5.11.1 One piece of cylindrical tapered bone (RF<1>) weighing 5.9g was recovered from pit fill [119]. The size and shape are like other bone pins that have been located across the UK during the Late Neolithic to Early Bronze Age (2500-1500). Some bone pins are associated with cremations (Whittle et al 1992, 155-6), with burning clearly evident on the surface, whilst others have been found without any signs of burning but do appear to be eroded (Kinnes et al 1985, 41).

5.11.2 The head of the bone pin is circular/conical in shape with a thickness of 8.6mm. The shaft is circular and is tapered to a break that shows signs of being worked. The pin is in a slightly degraded condition due to erosion with depositional pitting evident across the entire surface. It is likely to be Late Neolithic to Early Bronze Age.

5.11.13 A large chalk boulder, RF<2> from pit [96], fill [99], exhibits an area of apparently linear incisions which appear to have been made by a sharp flint tool, as well as a possible 'cup' and areas of pecking. Chalk pieces with scoring similar to this have been recovered from several contemporary contexts in Sussex. Under Varndells (1991, 100-3) typology of chalk artefacts from Grimes Graves, the piece could best be described as a 'work surface' although its size, at greater than 20cm, would classify it as a 'non-portable' chalk block under the terms of Teather's later study (2016, 42). They are strongly correlated with deliberate and symbolic deposition practices, particularly with burials (ibid. 58-9).

5.12 The Environmental Samples by Elsa Neveu

Introduction

5.12.1 Twelve bulk samples, measuring 20 to 40 litres, were taken during the excavation at the site. Sampling aimed to retrieve environmental remains, such as charcoal and charred plant macrofossils. The following report assesses the significance and potential of the plant macrofossils and wood charcoal to inform on crops, agrarian practices and local vegetation environment.

Methodology

5.12.2 These samples were processed by flotation using a 500 µm mesh for the heavy residues and a 250 µm mesh for the retention of the flots. Residues and flots were air dried and were passed through 8, 4 and 2mm sieves. The residue were sorted for artefacts and ecofacts (quantification in table 1). A stereozoom microscope at 7-45x magnifications was used in order to sort the flots and identify the remains. Their contents are described and recorded in table 2. The identification of the charred plant macrofossils was based on observations of gross morphology and surface cell structure. The remains were compared to a botanical modern reference collection and published atlas (Cappers *et al.* 2006, Jacomet 2006) were also consulted. The nomenclature for the wild taxa follows Stace (2010) and Zohary and Hopf (2000) for the domesticated plants. Quantification was based on approximate number of individuals.

Results

5.12.3 Appendix 3 provides an overview of the samples detailing materials retrieved through flotation and sorting. The following text summarise the results by period. Most of the flots revealed a variable percentage of uncharred seeds and root remains. Charcoal preserved in small amounts and did not warrant identification work.

Period 1: possibly Early Neolithic

5.12.4 Sample <1> [29] only yielded hazel nutshell fragments (*Corylus avellana*), which were moderately well preserved. The density in this sample remained low (table 2).

Period 2: Middle Neolithic to Early Bronze Age

5.12.5 Sample <7> [75] did not produce charred plant remains, whilst samples <2> [32], <3> [97], <4> [98], <5> [99], <6> [73], <8> [77], <9> [78], <10> [54], <11> [55] and <12> [119] revealed assemblages with a poor density. Preservation of plant macrofossils was poor to moderately well. The recorded domesticated taxa were naked wheat (*Triticum aestivum/durum/turgidum*), wheat (*Triticum* sp.), barley (*Hordeum* sp.) and unidentified cereals (*Cerealia*). In addition, a few remains were identified and registered as oat (*Avena* sp.), carrot family (*Apiaceae*), hazel nutshell fragments (*Corylus avellana*) and apple tree (*Malus sylvestris*).

5.13 Radiocarbon dating and statistical analysis by Alice Dowsett

5.13.1 Two radiocarbon measurements are now available from the site (Table 18). Both are conventional radiocarbon ages (Stuiver & Polach 1977).

5.13.2 The radiocarbon calibration and statistical analysis presented here has been undertaken using OxCal 4.4 (Bronk Ramsey 2009), and the internationally agreed calibration curve for the northern hemisphere (IntCal20; Reimer *et al*. 2020). The dates have been calibrated using the maximum intercept method, which is used for deriving a single date range for each sample.

Lab Code	Sample reference, material and context	Radiocarbon age (BP)	δ13CIRMS(‰)	Calibrated date (2σ)
SUERC-99023	[ASE_DS 839] Charred Plant Remain : Corylus avellana nutshell frag [78], <9>	4289±24	−23.2‰	2920-2880 cal BC
SUERC-99024	[ASE_DS 840]Charcoal : Corylus/Alnus sp. [78], <9>	4394±24	−25.0‰	3100-2915 cal BC

Table 18: A summary of the radiocarbon dates

5.13.3 Statistical chi squared analysis found that measurements on one *Corylus avellana* nutshell fragment (SUERC-99023) and one piece of *Corylus/ Alnus* sp. charcoal from basal fill [78] of pit [79] (SUERC-99024) are statistically inconsistent at the 1% significance level (T=9.6) (Ward and Wilson 1978). It is likely that they derive from slightly different periods.

5.13.4 The two pieces of organic material could have been living 10-200 years apart from each other (95% probability). It is likely that the later date of 2920-2880 cal BC (SUERC-99023; 4289±24) is the best estimate for the final sedimentation episode of fill [78] and that the earlier piece of charcoal from 3100-2915 cal BC (SUERC-99024; 4394±24) is either residual, or due to the longer life of a hazel tree when compared with a nutshell.

6.0 POTENTIAL & SIGNIFICANCE OF RESULTS

6.1 Realisation of the original research aims

SR1: Determine the character, extent, preservation, significance, and date of any archaeological deposits

6.1.1 The first apparent use of the site occurred during the Early Neolithic, represented by a single pit. Use of the site increased throughout the Middle Neolithic to Early Bronze Age, centred around the middle of the site, with evidence of a possible pit alignment, a tree throw, small pits and postholes, of which some may have been associated with a structure, and some possible division of the landscape evidenced by a ditch intersecting the site. At least some of this activity occurred around the Middle to Late Neolithic transition, whilst some is more likely to have occurred closer to the Late Neolithic to Early Bronze Age transition.

6.1.2 No evidence of late Prehistoric or Roman activity was recovered, and only very limited manuring of the site is likely in the early medieval. Clear evidence of use of the site once again dates to the 19th and 20th centuries, with a further cluster of pits and postholes identified towards the centre of the site, associated with fills containing clinker and coal.

6.1.3 The depth of the majority of deposits was shallow. However, the more significant of the pits, particularly those of Middle Neolithic to Early Bronze Age date survived to depths of up to 1.05m.

SR2: Through surface survey and excavation, with special attention to the periglacial involutions (stripes), determine the presence, character and significance of early prehistoric artefacts associated with Pleistocene sediments. To record, date and sample for Palaeoenvironmental remains, the Quaternary sedimentary sequence at the site, including the periglacial involutions (stripes).

6.1.4 No artefacts or ecofacts were recovered from the Pleistocene deposits recorded across the site. OSL dating and sediment samples were taken from the surface of these deposits, as well as from the overlying colluvium to allow of the development of dated depositional model for the site.

SR3: Can the site address research aims identified in the South-East Research Framework (SERF), specifically those regarding:

- *Evidence for Beaker occupation sites in valleys.*

6.1.5 Just a single feature comprising a pit or tree throw contained small quantities of possible Beaker pottery. It is hoped that with further analysis the relationship of this feature to the landscape and Period 2 activity can be refined.

- *The Middle Bronze Age sees a dramatic change in the degree of evidence for agriculture. Can the timing and nature of this transition including the dating of the introduction of spelt wheat be clarified?*

6.1.6 No definitively Middle Bronze Age activity was identified.

- *Finding more well-dated Early Bronze Age boundaries and pit deposits in order to understand the processes of change in the organisation of the landscape.*

6.1.7 No well-dated boundaries or pit deposits of this period were identified. Radiocarbon dating may clarify what activity did extend into the Early Bronze Age but current interpretation would suggest that most activity on the site was of Late Neolithic date.

- *Re-examination of woodlands on the South Downs*

6.1.8 Some tentative evidence might indicate that the site was situated on a woodland margin in the Late Neolithic. Unfortunately, environmental evidence from the site was limited and poorly preserved and is unlikely to offer much opportunity to better understand woodland environments at this time.

- *What evidence is there for coastal maritime, riverine and continental links with other cultures or settlements during the prehistoric period?*

6.1.9 The very limited assemblage from the site offers little to identify links with other cultures and settlements in this period.

- *To what extent can sites, when examined on a local and regional level, define their relationship to a wider first millennium BC cultural system?*

6.1.10 Rather surprisingly, there was no evidence to indicate use of the site in the first millennium BC.

- *The character of the Middle / Late Bronze Age transition*

6.1.11 The Middle Neolithic and Late Neolithic periods are generally seen as well-defined and distinctive from one another, both in pottery traditions and monuments. However, at both Lower Hoddern Farm, Peacehaven (Hart 2015, 34) and at Rottingdean, that defined transition is not so apparent, perhaps highlighting similarities between the sites and their communities. It is however of note, that whilst placed deposits were common in Early Neolithic features and rare in Later Neolithic features at Lower Hoddern Farm, the reverse was the case at Rottingdean. Further research is required to better place the site within its wider landscape. This may highlight further trends or otherwise in tradition and practices across sites and inform on changes in society in this transitional period.

- *Comparisons between urban and rural, coastal and in-land communities in the medieval period.*

6.1.12 No evidence of medieval activity was recorded.

- *The interaction between town and country in the medieval period.*

6.1.13 No evidence of medieval activity was recorded

- *The chronology and typology of farm buildings and other lesser noticed post-medieval agricultural features, such as dew ponds and sheepfolds in the post-medieval period.*

6.1.14 Only very limited evidence of post-medieval activity was recorded, comprising a small cluster of pits and postholes with no form or structure.

- *Further archaeological survey on agricultural buildings and other ancillary structures in the post-medieval period.*

6.1.15 See 6.1.14

- *Identification of areas of colluvial/gellifluction deposits that may contain undisturbed or minimally disturbed concentrations of Palaeolithic remains.*

6.1.16 Mass-movement gelifluction gravels were recorded at the base of the Quaternary sequence recorded across the site, however no Palaeolithic artefacts were identified within these deposits

- *More attention to 'brickearth', and characterisation as colluvial or Aeolian (or fluvial*

6.1.17 Fine-grained head deposits, consistent with being derived from primary loess deposits, were recorded at the site preserved within involuted down-slope stripes, however no Palaeolithic artefacts were identified within these deposits.

- *Mapping and dating of loessic sediments, and modelling of likelihood of any contained Palaeolithic remains.*

6.1.18 The site contributes to our understanding of the distribution of loessic sediments in the region by adding a further example of a chalk downland slope preserving loessic deposits in a derived, secondary position.

6.2 Significance and potential of the individual datasets

6.2.1 The Stratigraphic Sequence

Period 1

Significance

6.2.1.1 Sussex contains most of the known Early Neolithic causewayed enclosures in the south-east with the closest located some 4km to the west at Whitehawk Camp in Brighton and at Offham near to Lewes c 8km to the north. However, in general, Early Neolithic sites in Sussex, such as long barrows, flint mines and cursus monuments, are rare, and pit sites are particularly poorly represented (Hart 2015, 7). As such, should the pit currently assigned to Period 1 be definitively identified as Early Neolithic pitting, it should be considered to have local and some regional significance.

Potential

6.2.1.2 Unfortunately, just a single pit is currently considered to be of this date. Unless further features within the excavated area are attributed to this period, there is only limited potential to inform on this type of site. As it stands, it does however offer some potential to inform on the distribution of pit sites in Sussex in the Neolithic.

Period 2

Significance

6.2.1.3 As with the Early Neolithic activity, Later Neolithic sites are rare in Sussex, largely comprising tree throws, pits and flint scatters (Hart 2015, 8). As such the evidence from this site of a possible pit alignment, a tree throw, a pit or posthole cluster and a possible ditch is of both local and regional significance.

Potential

6.2.1.4 The well stratified deposits and availability of viable material for further radiocarbon dating within deposits in the pit alignment holds good potential to refine the phasing of these features and inform on the nature of pit sites in this period. Furthermore, as some deposits appear to represent structured or special deposits they too hold the potential to inform on deposits of this type. Should it be possible to refine the dating of the ditch and pit or posthole cluster along with the clusters form and function, they too could hold the potential to further inform on site types and potentially structures in this period.

Period 3

Significance

6.2.1.5 Late post medieval agricultural activity abounds in the area, and the limited nature of the activity of this date recorded on the site is considered of low significance.

Potential

6.2.1.6 Just a single small cluster of pits and postholes were securely of post medieval date. They hold little potential to inform on the wider understanding of agricultural practices in this period.

6.2.2 The Flintwork

Significance

6.2.2.1 The assemblage provides evidence for presence at the site during the Neolithic period. It is of local and regional significance.

Early Neolithic

6.2.2.2 Evidence for Early Neolithic presence is sparse. No diagnostic pieces were found; and, although pit [28] produced some ceramic that exhibits traits suggestive of the Early Neolithic Plain bowl tradition, the flintwork from the feature lacks coherence, and it may not be entirely contemporary with the pit. The feature contained a small blade component. Blade deriving from a blade-orientated indiustry can be broadly dated to the Mesolithic or Early Neolithic. Studies have shown that material present in Neolithic pits can be drawn from surface deposits (Garrow 2006); there is therefore a small chance that the blades are Mesolithic. Nonetheless, they are more likely to be Early Neolithic as diagnostic Mesolithic artefacts were absent, and potential Early Neolithic pottery was found in the pit. A very small quantity of blades was also found redeposited in later Neolithic features. And at least one of the microdenticulates manufactured on a narrow blade may also be Early Neolithic. The overall low density distribution indicates that the site was possibly only sporadically exploited during the Early neolithic period.

Middle Neolithic / Early Bronze Age

6.2.2.3 The activity of the site increased notably during this period. The flints were recovered from ten pits concentrated in the western part of the excavated area, with four of the pits producing large assemblages (pits [79], [118], [96] and [53]). Three of these pits contained varying quantities of Grooved ware ceramic sherds (pit [79], pit [118] and pit [53]). The latter also contained some sherds of Beaker pottery. The basal fill of pit [79] produced C14 dates of 2920-2880 cal BC (SUERC-99023; 95% probability) and 3100-2915 cal BC (SUERC-99024; 95% probability). The main significance of the flint assemblage is that it forms a coherent group which, overall, is contemporary with the pits and the ceramics. This is based on technological grounds, and the presence of both diagnostic tools (for example the chisel arrowhead from pit [96]) and characteristic pieces such as the discoidal/Levallois-like cores and associated debitage, as well as the end scrapers typical of the period present in several pit fills. Chisel arrowheads are frequently associated with Middle Neolithic Peterborough ware, but can in fact overlap with the Early or Late Neolithic.

6.2.2.4 So, the most interesting aspect of the assemblage is that the flintwork from the pits is mostly contemporary, except possibly for a few pieces that would have accumulated from above ground surface deposits when the pits were open or silted up. The flintwork appears to belong mostly to one prehistoric period: the Late Neolithic. Furthermore, the pieces, exhibit good edge condition or display only minimal signs of weathering. This indicates that the flints have undergone minimal post-depositional disturbance, or that they weren't exposed for long prior to burial.

6.2.2.5 The assemblage is also important because very few well-stratified Late Neolithic pits sites have been recorded in East Sussex. Late Neolithic activity

in the area is well attested; however, the evidence is mostly restricted to surface flint scatters and isolated finds - for example the large-scale surface collection at Bullock Down that produced thousands of flints including large quantities of Neolithic material (Drewett 1982) – or, it derives from not well-dated features or palimpsests of early Holocene activity - for example the excavation at Seaford Head Sixth Form Centre that produced over 71,000 flints including 17 chisel arrowheads (ASE 2016). However, recent excavations in West Sussex have revealed some pit groups in association with ceramic, for example at Oldlands Farm, Bognor Regis (Margetts 2019), North Bersted (Bedwin and Pitts 1978) and Walberton (ASE 2020).

Potential

6.2.2.6 The assemblage from the pits has considerable potential to increase our understanding of the nature of occupation of the site during the Late Neolithic period. It has the potential to demonstrate the range of activities that were undertaken prior to deposition in the pits such as knapping, use and possibly middening. It has the potential to further define the typological and the technological signature of the pieces in order to understand how the flints were used. It can provide an important dataset for comparison with other contemporary assemblages in south-east England. Whilst a small range of tools was recovered, several unmodified pieces appear to have been used, and further use-wear analysis could provide information on the types of activities undertaken at the site. It will also be interesting to consider the activities in association with the other finds (pottery, bones, shells, plant remains, needle…). Microdenticulates, for example, have been associated with silicious plants. But given the presence of marine molluscs including mussels, could the microdenticulates have also been used in the harvesting and/or preparation of seafood, for example to cut the byssal threads of mussels? Interestingly evidence for heating of flints is very low.

6.2.2.7 The assemblage also has the potential to demonstrate the similarities or variabilities in assemblage composition between the pits and within the same pits; and mostly, it has the potential to provide an insight into material deposition. Some of the pits that produced large quantities of flints (including G1) are likely to indicate deliberate deposition. However, the smaller stratified pit groups (G2 and G3) may still represent some form of structured deposition because research has shown that during the Neolithic period the act of pit digging, and deposition was possibly a means of creating identities (Thomas 1999, Thomas 2010, Rowley Conwy & Owen 2011). The almost absence of surface finds should also be considered as middening above ground level is frequently found on Neolithic sites, although the absence here might be caused by excavation bias. A flint refitting exercise could help characterise the depositional practice within the pits.

6.2.2.8 Finally, the assemblage has the potential to be compared with other Neolithic pit assemblages from the area. Comparing with contemporary pit sites from West Sussex such as Oldlands Farm, Bognor Regis, North Bersted and Walberton as well as earlier Neolithic pit sites (for example Bishopstone or Peacehaven). The excavation at Bishopstone, situated c 4km to the west, revealed several Neolithic pits, one of which contained 43 microdenticulates and 153 sherds of pottery (Bell 1977). The pit produced Middle Neolithic C14 date of 3335-2940 cal BC / 3360-2920 cal BC (HAR-1662) (Jordan et al 1994).

Closer to the site, the excavation at Peacehaven has also produced Early and Middle Neolithic pits (Hart 2015).

6.2.3 The Prehistoric Pottery: Significance and Potential

6.2.3.1 Although the assemblage is small and relatively undiagnostic, the presence of earlier prehistoric pottery, especially the Grooved Ware, which has very rarely been recorded in East Sussex, is of clear local importance and arguably of some limited regional significance particularly given the associated radiocarbon dating evidence. However, there is limited potential for further analysis since the assemblage is very small and mostly lacking in diagnostic features.

6.2.4 The Post-Roman Pottery: Significance and Potential

6.2.4.1 The post-Roman pottery assemblage is small, mixed and of types well known of in the area. It is not considered to hold any potential for further analysis beyond that undertaken for this report and is not suitable for long-term curation in a museum.

6.2.5 The Ceramic Building Material: Significance and Potential

6.2.5.1 Due to the modernity of the one fragment and the lack of diagnostic features of the other fragments, the assemblage has little archaeological significance.

6.2.6 The Fired Clay: Significance and Potential

6.2.6.1 The probable daub from Rottingdean potentially provides rare evidence for a wattle and daub structure from the Middle Neolithic to Early Bronze Age. Whilst the assemblage is not as notable as the example from Durrington Walls it is still potentially material evidence rather than conjecture regarding daub from the period. The assemblage is also the earliest example of probable daub in Sussex, and as such it is of at least regional significance. The potential for further analysis includes examination of the clay to ascertain if other materials not immediately visible are included and comparing to other known examples.

6.2.7 The Geological Material: Significance and Potential

6.2.7.1 The stone assemblage is composed of types that are typical for the area during the periods represented. The Neolithic assemblage is all derived from local sources, either from the downs or the adjacent beach and is virtually devoid of worked pieces. Much larger assemblages containing diagnostic worked objects have previously been published from the general area (for example Barber 2015a and Barber 2015b). As such the assemblage is not considered to hold any potential for further analysis beyond that undertaken for the current assessment.

6.2.8 The Metallurgical Remains/Magnetic Material: Significance and Potential

6.2.8.1 The material probably represents a background scatter of domestic waste that correlates well with the late post-medieval pottery from the site. The slag assemblage is not considered to hold any potential for further analysis and has been discarded.

6.2.9 The Animal Bone

Significance

6.2.9.1 Although small and poorly preserved the assemblage's date and composition render it locally and regionally significant, particularly the material in context [119] <12>. Even small assemblages are significant for the Neolithic and Early Bronze Age as they may inform on deposition and the attitude of people to their animals (Serjeantson 2011, 102), and in addition this assemblage has implications for subsistence and consumption. However, confirmation of the archaeological dating and the species of suids present is crucial to fully realising that significance, as detailed below.

6.2.9.2 Although the taxa present needs further research, this small assemblage suggests at least some utilisation of both domestic and wild animals, which has implications for the contribution of farming and exploitation of wild resources in the Neolithic and Early Bronze Age (SERF). It is rare for a faunal assemblage of this date to have such an abundance of wild animals, if the suids are shown to be wild boar (Serjeantson 2011). Even if the suids are shown to be domestic, pigs are well known in prehistory as a prestigious feasting animal (Madgwick et al 2019; Serjeantson 2011) so their presence is still significant and has implications for the overall site narrative.

6.2.9.3 The skeletal part abundance of the suids suggests that the head and limbs were almost exclusively deposited in context [119] <12>, with scant evidence for vertebrae. This gives an insight into carcass portioning and possible transport of certain elements between sites or hunting episodes, and for food sharing and communal feasting. This may have also been the case for the red deer, with only left metatarsals deposited.

6.2.9.4 The evidence of burning may be indicative of cooking practices. During roasting, bone unprotected by flesh could have been scorched, in the case of the pig first phalanx and medium mammal long bone and cranial fragments. As roasting is not an efficient means of retaining nutrients from a carcass roasted pig bones can be seen as a mark of feasting (Serjeantson 2011, 62). Heat exposure evidence also suggests that some specimens were burnt at high temperatures (carbonised and calcined), which may have been a result of disposal in a domestic fire (Serjeantson 2011, 61).

Potential

6.2.9.5 To fully realise this assemblage's archaeological potential, confirmation of both the date and taxa composition is essential.

6.2.9.6 Archaeological dating could be performed on specimens within this context if no alternative suitable datable material can be found. Although no articulated specimens were present, the suid teeth from refitting mandibles would be prime specimens for radiocarbon dating following some further identification below.

6.2.9.7 Determining whether wild boar, domestic pigs or both were present in this pit is crucial to fully realising its archaeological significance. Further metrical analysis of the specimens as detailed in Mayer et al (1998), Rowley-Conwy et al (2012), and Albarella and Payne (2005) should contribute to a clearer understanding of the distribution of different suids. As suggested above, this will have

implications for subsistence in terms of hunting methods or animal husbandry, food preparation, sharing and transportation, and (structured?) deposition and site formation processes. It would inform our understanding of the adoption or intensification of farming in this period (Brown and Glazebrook 2000), and how people were using the landscape, including woodlands and clearings (SERF).

6.2.9.8 The suids represented have implications for animal husbandry or selective hunting as age-at-death analysis suggests the four individuals that contributed to this assemblage may have been of similar ages. Further refitting of mandibles and maxilla may result in more age-at-death data becoming available to answer this question.

6.2.9.9 Comparing the zooarchaeological data with similar sites detailed in Serjeantson (2011), once dated and identified to its full extent, has the potential to increase our understanding of this site's narrative and our understanding of the Neolithic in the region and beyond.

6.2.10 The Shell: Significance and Potential

6.2.10.1 The marine mollusc assemblage from this site appears to come entirely from a series of pits dated to the Middle Neolithic to Early Bronze Age period. The proximity of the site to the Channel coast means that the marine resource was relatively close to the site. Most of the species identified require a stony or sandy bottom within the littoral zone and this was presumably available at the time. In the case of the most prolific species at the site the mussel requires a hard surface to attach to and stone or rocky outcrops were probably to be found on the contemporary foreshore. The assemblage only produced a very small number of adult individuals suitable as an edible resource. Most of the shells, especially the mussel valves, were of infant or juvenile age (that is in the 0.5-1.5 cm length range) and the amount of food available from these would have been negligible. It is very unlikely they were originally handpicked specifically as an edible resource and therefore their presence cannot easily be explained. Of course, the number of fragments present may represent pieces from older individuals. However, the large number of umbones also present and clearly of infant/juvenile age suggests otherwise.

6.2.10.2 Much of the analysis has been undertaken at this the preliminary stage. Only one context contains more than a 100g of marine shells (context [119] <12>) and it is suggested that this context undergoes brief further study (see below). The evidence of the marine shells at this site indicates that a very low-level exploitation of the marine resource was undertaken.

6.2.11 The Registered Finds: Significance and Potential

6.2.11.1 The Registered Finds are of local and regional significance.

6.2.12 The Environmental Samples

Significance

6.2.12.1 These samples produced modest assemblages of charred plants remains, which provided a glimpse of crops, local vegetation and natural resources available. Results from the pit [29] confirmed the presence of hazel nut shell fragments at the site during the Early Neolithic period; it is likely that

hazel was collected for its edible nuts and additionally it indicates the presence of woodland margins. In comparison, samples from pits [32], [53], [79], [96] and [118] provided larger assemblages. They confirmed the presence of hazel and apple tree, which are both common in woodland margins and could have been collected for their edible nuts and fruits. Moreover, these samples confirmed the exploitation of naked wheat, wheat and unidentified cereals at the site during the Middle Neolithic to Early Bronze Age period.

6.2.12.3 These assemblages were consistent with background scatters of food wastes and through the time span, they confirmed the exploitation of the wild edibles species and the presence of the margin woodlands were recurrent. For each phases, the low density of plant remains could be explained by the taphonomy and the poor state of preservation of plant macrofossils. The paucity of charred plant remains cannot be linked with the scale of cereal processing or other activities.

6.2.12.4 However, these modest results from Rottingdean are consistent with larger assemblages retrieved from several Early Neolithic and Late Neolithic sites. Three sites at Lower Hoddern Farm, Keymer Avenue and Seaview Avenue located in Peacehaven revealed interesting assemblages from several Early Neolithic pits (Le H*é*garat 2015). The main crops were emmer/spelt and barley (grains from both hulled and naked varieties were recorded), while free-threshing bread-type wheat, flax, broad bean/Celtic bean and possibly garden pea were anecdotal. Moreover, hazelnut shell fragments were common (Le H*é*garat 2015). Early Neolithic pits from both periods at Kingsmead Quarry, Horton (Berkshire, Chaffey ***et al.*** 2012) yielded sparse grains of barley, indeterminate wheat, fragments of hazelnut shell and one glume base registered as emmer/spelt. Late Neolithic pits at Horton produced large quantities of hazelnut shell fragments and some occasional fruit remains, while the atypical pit 3370 yielded a larger amount of plant macrofossils, which mainly comprised stones of sloe, hazelnut shell fragments, hawthorn and midland hawthorn. This feature also revealed a number of complete or partially broken fruits of crab apple, and possibly service tree or wild pear (Chaffey ***et al.*** 2012).

Potential

6.2.12.5 For each phase, all charred plant remains were retrieved from the flots and the residues and then identified. These samples cannot reveal more remains, and the identifications cannot be refined either due to the poor state of preservation preventing identifications to genus or species levels. These assemblages are unlikely to provide further information, even though they yielded data that tie in with what is already known on crops and exploitation of natural resources for these periods (Chaffey ***et al.*** 2012; Le H*é*garat 2015). These modest results should be included in regional synthesis as qualitative data.

7.0 PUBLICATION PROJECT

7.1 Revised research agenda: Aims and Objectives

7.1.1 This section combines those original research aims that the site archive has the potential to address with any new research aims identified in the assessment process by stratigraphic, finds and environmental specialists to produce a set of revised research aims that will form the basis of any future research agenda. Original research aims (OR's) are referred to where there is any synthesis of subject matter to form a new set of revised research aims (RRA's) posed as objectives below.

RRA 1: Can the archaeological evidence from the site inform our understanding of Early and Later Neolithic pit sites?

7.1.2 RRO 1: Is there consistency in the dispersal of Early and Later Neolithic pit sites in East Sussex? What does this tell us about their relationship to the landscape and how can this inform our understanding of society in Sussex throughout the Neolithic?

7.1.3 RRO 2: Can a program of radiocarbon dating clarify the extent of Early Neolithic activity, Later Neolithic activity, and the periods of abandonment in between?

7.1.4 RRO 3: Can further analysis clarify the nature, extent and mode of deposition of the possible placed deposits within the pit alignment?

7.1.5 RRO 4: Can further analysis determine whether all features within the pit or posthole cluster G3 are structural or otherwise? Can further radiocarbon dating determine whether they comprise Neolithic pitting, a Neolithic structure or otherwise?

7.1.6 RRO 5: Can further analysis phase any of the currently undated features? How does this effect our understanding of the extent and density of pitting on the site in the Neolithic?

7.1.7 RRO 6: When undertaking further research it will be important to consider recent findings from Lower Hoddern Farm, Peacehaven where Early Neolithic features (dated by pottery and flintwork) have recently been identified. These findings add to those made by ASE on the adjacent Peacehaven water treatment works site (Hart 2015).

RRA 2: Can the archaeological evidence from the site inform our understanding of the character of the Middle to Late Neolithic transition?

7.1.8 RRO 7: Is there consistency across pit sites in the transitional period in Sussex, in their location, form, character and extent? How do they relate to the causewayed enclosures in the South Downs?

7.1.9 RRO 8: Why do Neolithic pit sites in Sussex tend not to reflect the well-defined boundary between the Middle and Later Neolithic seen elsewhere?

7.1.10 RRO 9: Can a program of radiocarbon dating and modelling clarify the use of this site across the transition and beyond?

7.1.11 RRO 10: Can further use-wear analysis on the worked flint provide information on the types of activities undertaken at the site?

7.1.12 RRO 11: Can flint refitting exercises help to characterise depositional practice within any of the pits?

7.1.13 RRO 12: Does the flint assemblage compare with any other Neolithic pit assemblages from the local/regional area?

7.1.14 RRO 13: What other possible uses/applications (pottery temper, dress accessories etc) could there be for the infant marine mollusc shell assemblage which is considered too small for consumption? Are there any parallels for this at similarly dated sites?

7.2 Preliminary Publication Synopsis

7.2.1 This is an important site well worthy of further analysis and publication. It is therefore proposed that following the further work outlined below the results of the work should be published as an article in the journal *Proceedings of the Prehistoric Society,* or in the county journal, *Sussex Archaeological Collections* should it not be deemed suitable for *PPS.*

7.2.2 The article should seek to address the revised research questions identified in the post-excavation assessment and updated project design report and should be presented within a chronological framework.

7.2.3 It is suggested that the publication would take the following structure.

Chapter 1: Introduction
Project background
Archaeological background etc
The Quaternary sedimentary context of the site

Chapter 2: The Neolithic
Early Neolithic pit sites
Pit sites in Sussex in the Middle to Late Neolithic transition
Structures
Tree throws, boundaries and the landscape
Pitting in the Late Neolithic to Early Bronze Age transition

Chapter 3: Specialist reports
Artefact reports
Environmental reports

Chapter 4: Conclusions

Bibliography

7.3 Publication project

Stratigraphic Method Statement

7.3.1 Once subgrouping is finalised, those subgroups not already grouped will be grouped. One linear feature, four groups of pits and one group of pits or postholes have already been assigned to provisional groups at the assessment stage. These groups will be assigned to broader land-use elements such as open areas and structures. This process will provide a land-use led chronological framework for the full analysis and reporting of the site.

7.3.2 After completion of the specialist analysis and reporting, an integrated period-driven narrative of the site sequence will be prepared. This will draw on specialist information and on further background research in order to address the revised research aims. The narrative will include a relevant selection of period/phase plans, sections, photographs and finds illustrations.

The Flintwork

7.3.3 It is proposed that a specialist report should be prepared focusing on the Late Neolithic pits

7.3.4 Metrical and technological attribute analysis on the flints from pits [79], [118], [96] and [53] should be carried out.

7.3.5 Refitting exercise should be carried out on the flints from pits [79], [118], [96] and [53] as this might shed light on deposition practice. Refitting between pits should also be undertaken.

7.3.6 The tools and the cores have been broadly classified; however, they should be further characterised typologically.

7.3.7 The results should be compared with results from other contemporary sites (Grooved ware pits from the south-east and beyond)

7.3.8 A report should be prepared with hopefully more C14 dates, with discussion of the assemblage in its regional context, discussion on the depositional practices, in association with other finds, as well as on sedentarism.

7.3.9 Use-wear analysis should be undertaken on selected pieces from different pits

Updating the data with new phasing and contextual information	0.5 day
Metrical and technological analysis (c 750 pieces)	8 days
Refitting analysis (c 750 pieces)	2.5 days
Further classification of the tools and cores	0.5 days
Research and comparison of the Neolithic / early Bronze Age assemblage with contemporary assemblages in the south-east and beyond	1 day

Research on parallels for pit depositions	1 day
Use-wear analysis by external specialist	Fee
Preparation of publication text	5 days
Preparation of illustration catalogue	1 day
Extracting / reintegrating illustrated flints and checking illustrations	0.5 day

It is proposed that c 25 pieces should be illustrated

Total **20 days plus fee**

The Prehistoric Pottery

7.3.10 It is suggested that a brief specialist report should be prepared largely based on the above text, with a brief literature search on Grooved Ware from the South-East to be undertaken for comparative purposes.

Undertake a brief literature search on Grooved Ware for the South-East	0.75 day
Prepare publication report	0.5 day
Extract sherd for illustration, prepare catalogue	0.25 day

It is proposed that one sherd be illustrated

The Post-Roman Pottery

7.3.11 No further work is proposed for the post-Roman pottery.

The Ceramic Building Material

7.3.12 No further work is recommended.

The Fired Clay

7.3.13 Further research on other fired clay assemblages from the same period in Sussex to identify if similar finds have been made but not published fully (evaluation reports, PXAs, and other grey literature). Additionally, this research will ascertain the rarity of pre-Middle Bronze Age daub in Sussex.
0.5 day

7.3.14 Further research on contemporary structures in the UK to identify any other examples of daub for comparison. Finding detailed analysis of the Durrington Walls daub for comparison. Additionally, this research will ascertain the rarity of pre-Middle Bronze Age daub in UK
0.5 day

Writing report to include information based upon further research.	0.75 day
Preparing illustrations catalogue	0.25 day

Up to four fragments can be illustrated and photographed	
Total	**2 days**

The Geological Material

7.3.15 No further work is proposed, and no separate report is required for publication.

The Metallurgical Remains/Magnetic Material

7.3.16 No further work is proposed.

The Animal Bone

Sample selection and C14 dating	0.25 days + fee
Further measurement of suid teeth	1 day
Refitting suid dentitia for age-at-death analysis	0.5 day
Comparison with other assemblages	1 day
Composition of summary report	1 day
Total	**3.75 days**

The Shell

7.3.17 It is proposed that context [119] be looked at in more depth to ensure that further species have not been missed and to verify those identified. It may also be necessary to consider further why the age/size ratio of the marine resource at this site appears to suggest that their collection was for something other than food.

7.3.18 Detailed examination as outlined above and publication report 1 day

The Registered Finds:

7.3.19 It is recommended that both artefacts are cleaned by a conservator. The chalk block is recommended for 3D recording in order to elucidate the marks/ decoration and record them before the surface deteriorates further. A report on the Registered Finds should be included in any future publication, and thought given to a standalone article on the chalk block and its wider context. Both are suitable for illustration.

Conservation	2 days
Publication report	1.5 days
Photography and 3D recording	
Total	**3.5 days**

Radiocarbon Dating of Archaeological Deposits

7.3.20 It is proposed that a program of radiocarbon dating will be undertaken, to include up to 10 samples from 5 contexts. These samples will be chosen in close communication with the relevant specialist regarding viable material.

Sample selections, lab liaison and admin	1 day
c. 10 C14 samples	Fees
Total	**1 day + Fees**

Environmental material

Research	1 day
A summary of results and discussion for publication	1 day
Total	**2 days**

Geoarchaeology

Assess the implication of the OSL dating results	2 days
Review of local colluviation literature	1 day
Geoarchaeological publication text	1 day
Total	**4 days**

Illustration

Up to 2-3 illustrations may accompany the stratigraphic narrative, including a site location figure.	1 day
C 25 worked flints illustrate	5 days
1 pottery sherd to illustrate Four fired clay fragments	1 day
Registered finds	1 day
Total	**8 days**

Stratigraphic Tasks	
Finalise subgroups and groups and complete group register and descriptions. Define landuses and periods.	1 day
Describe landuse	3 days
Describe periods. A textual summary, built from the landuse and group texts where appropriate, will be formed for each period. Plots of each period will be produced using Auto-Cad, GIS and/or hand-annotated plans, these will include feature conjecture.	1.5 days
Documentary research	4 days
Authorship of article	3 days
Prepare discussion section and finalise article	2 days
Post referee edits	1 day
Total	**15.5 days**
Specialist Analysis	
The Flintwork	20 days
External flint specialist – use wear analysis	Fee
Prehistoric and Roman pottery	1.5 days
The Fired Clay	2 days
Animal Bone	3.75 days
Marine Shell	1 day
Registered finds	1.5 days
Conservation	2 days
Environmental Material	2 days
Geoarchaeology	4 days
Specialist Dating	
C14 lab liaison	1 day
C14 dating of 10 samples	£3500
Illustrations	**8 days**
Production	
Editing of the period-driven narrative	2 days
Project Management	2 days
Page setting	1 day
Journal fees	Fee

Table 19: Resource for publication

7.4 Artefacts and Archive Deposition

7.4.1 The site archive is currently held at the offices of ASE. Following completion of all post-excavation work, including any publication work, the site archive will be deposited with Brighton Museum.

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Appendix 1: Context Register

Context	Type	Interpretation	SubGroup	Group	LandUse	Period
1	Fill	Fill, single	1			
2	Cut	Pit	1			
3	Fill	Fill, single	2			
4	Cut	Pit	2			
5	Fill	Fill, single	3			
6	Cut	Pit	3			
7	Fill	Fill, single	4			
8	Cut	Pit	4			
9	Fill	Fill, single	5			
10	Cut	Pit	5			
11	Fill	Fill, single	6			
12	Cut	Pit	6			
13	Fill	Fill, single	7			
14	Cut	Pit	7			
15	Fill	Fill, single	8			
16	Cut	Pit	8			
17	Cut	Ditch	9	5	D1	2
18	Fill	Fill, single	9	5	D1	2
19	Cut	Ditch	10	5	D1	2
20	Fill	Fill, single	10	5	D1	2
21	Cut	Ditch	11	5	D1	2
22	Fill	Fill, single	11	5	D1	2
23	Cut	Pit	12	2		
24	Fill	Fill, single	12	2		
25	Layer	Topsoil				
26	Layer	Subsoil				
27	Layer	Natural				
28	Cut	Pit	13		OA1	1
29	Fill	Fill, single	13		OA1	1
30	Layer	Buried soil horizon				
31	Cut	Pit	14	3	OA2	2
32	Fill	Fill, single	14	3	OA2	2
33	Cut	Pit	15	3	OA2	2
34	Fill	Fill, single	15	3	OA2	2
35	Cut	Pit	16	3	OA2	2
36	Fill	Fill, single	16	3	OA2	2
37	Cut	Pit	17	6	FS1	3
38	Fill	Fill, single	17	6	FS1	3
39	Cut	Pit	18			
40	Fill	Fill, single	18			

Context	Type	Interpretation	SubGroup	Group	LandUse	Period
41	Cut	Pit	19			
42	Fill	Fill, single	19			
43	Cut	Pit	20	6	FS1	3
44	Fill	Fill, single	20	6	FS1	3
45	Cut	Pit	21	3	OA2	2
46	Fill	Fill, single	21	3	OA2	2
47	Cut	Pit	22	3	OA2	2
48	Fill	Fill, single	22	3	OA2	2
49	Cut	Posthole	23			
50	Fill	Fill, single	23			
51	Cut	Posthole	24	3	OA2	2
52	Fill	Fill, single	24	3	OA2	2
53	Cut	Pit	25		OA2	2
54	Fill	Fill, basal	25		OA2	2
55	Fill	Fill, intermediate	26		OA2	2
56	Cut	Pit	28	3	OA2	2
57	Fill	Fill, single	28	3	OA2	2
58	Cut	Pit	29	3	OA2	2
59	Fill	Fill, single	29	3	OA2	2
60	Cut	Posthole	30	3	OA2	2
61	Fill	Fill, single	30	3	OA2	2
62	Cut	Pit	31	3	OA2	2
63	Fill	Fill, single	31	3	OA2	2
64	Cut	Pit	32	3	OA2	2
65	Fill	Fill, single	32	3	OA2	2
66	Cut	Pit	33	4		
67	Fill	Fill, single	33	4		
68	Cut	Pit	34	4		
69	Fill	Fill, single	34	4		
70	Cut	Pit	35	3	OA2	2
71	Fill	Fill, single	35	3	OA2	2
72	Void					
73	Fill	Fill, upper	41	1	OA2	2
74	Fill	Fill, intermediate	41	1	OA2	2
75	Fill	Fill, intermediate	40	1	OA2	2
76	Fill	Fill, intermediate	38	1	OA2	2
77	Fill	Fill, secondary	37	1	OA2	2
78	Fill	Fill, basal	36	1	OA2	2
79	Cut	Pit	36	1	OA2	2
80	Cut	Pit	42	4		
81	Fill	Fill, single	42	4		

Context	Type	Interpretation	SubGroup	Group	LandUse	Period
82	Cut	Pit	43	4		
83	Fill	Fill, single	43	4		
84	Cut	Pit	44			
85	Fill	Fill, single	44			
86	Cut	Pit	45			
87	Fill	Fill, single	45			
88	Cut	Posthole	46	6	FS1	3
89	Fill	Fill, single	46	6	FS1	3
90	Cut	Posthole	47	6	FS1	3
91	Fill	Fill, single	47	6	FS1	3
92	Cut	Posthole	48	6	FS1	3
93	Fill	Fill, single	48	6	FS1	3
94	Cut	Posthole	49	6	FS1	3
95	Fill	Fill, single	49	6	FS1	3
96	Cut	Pit	51	1	OA2	2
97	Fill	Fill, basal	51	1	OA2	2
98	Fill	Fill, intermediate	52	1	OA2	2
99	Fill	Fill, upper	53	1	OA2	2
100	Cut	Posthole	54			
101	Fill	Fill, single	54			
102	Cut	Posthole	55	6		3
103	Fill	Fill, single	55	6		3
104	Cut	Posthole	56	6		3
105	Fill	Fill, single	56	6		3
106	Cut	Posthole				
107	Fill	Fill, single				
108	Cut	Posthole	57			
109	Fill	Fill, single	57			
110	Fill	Fill, upper	27		OA2	2
111	Cut	Pit	50			
112	Fill	Fill, single	50			
113	Fill	Fill, tertiary	39	1	OA2	2
114	Cut	Posthole	58			
115	Fill	Fill, single	58			
116	Cut	Posthole	59			
117	Fill	Fill, single	59			
118	Cut	Pit	60	1	OA2	2
119	Fill	Fill, single	60	1	OA2	2
120	Cut	Pit	61			
121	Fill	Fill, single	61			
122	Cut	Pit	62	2		
123	Fill	Fill, single	62	2		

Context	Type	Interpretation	SubGroup	Group	LandUse	Period
124	Cut	Pit	63	4		
125	Fill	Fill, single	63	4		
10/004	Cut	Ditch	64	5		
10/005	Fill	Fill, single	64	5		
15/004	Cut	Pit				3
15/005	Fill	Fill, single				3

Appendix 2: Quantification of hand-collected bulk finds

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Stone	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Fire Cracked Flint	Weight (g)	Fired Clay or Daub	Weight (g)	Shell	Weight (g)
25			1	46											1	9		
29	13	166	30	450														
38					2	171			20	348								
40							7	568										
48																		
54	9	280					1	21					1	4				
55	22	299	4	13			1	15					3	7				
58																		
60																		
63	2	18																
71													2	60				
73	49	531					15	3414			9	25	1	6	1	17		
74	16	105									4	23			2	21		
75			32	188			1	13					1	1			1	2
76	5	45									14	5						
77	74	988	6	37			1	905			1	7	2	21	33	278		
78	19	428					2	212									12	3
85	1	1											1	8				
87	1	1																

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Stone	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Fire Cracked Flint	Weight (g)	Fired Clay or Daub	Weight (g)	Shell	Weight (g)
91			1	1			1	19	13	23								
97	83	9064					26	4117			1	59					9	46
98	22	1351					27	2555									2	2
99	25	2273					12	7884					2	4			7	2
us	21	442																
101							1	17										
103									1	1								
105							2	2										
110	6	88					2	41	1	2			1	4				
112	1	18															15	4
119	240	2475	3	43			11	1384			198	864	8	40			70	70
123	3	160																
125			1	2			1	175										
15/004			2	23														
Total	**612**	**18733**	**77**	**734**	**2**	**171**	**111**	**15032**	**35**	**374**	**227**	**983**	**22**	**155**	**36**	**316**	**116**	**129**

Appendix 3: Environmental Tables

Overview of the environmental residues (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and weights in grams. Preservation (+ = poor, ++ = moderate, +++ = good). Key: V = vitrified, RC = radial cracks, PDS = post-depositional sediment, D = distorted, RW = roundwood, TW: twig wood, KW: knotwood

Sample Number	Context	Context / Deposit Type	Sample Volume (L)	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Charcoal Identifications	Charred Botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Burnt Bone >8mm	Weight (g)	Burnt Bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Marine Molluscs	Weight (g)	Land Snail Shells	Weight (g)	Other (eg. pot, cbm, etc.) (quantity/ weight)
1	029	Pit Fill	40	**	2	**	3		**	1									***	6	*	<1	Flint (*/1g) Mag. Mat. <2mm (**/1g); Pottery (*14g)
2	032	Pit Fill	40			**	1		*	<1											*	<1	Fired Clay (*/7g); Mag. Mat. >2mm (*/<1g); Mag. Mat. <2mm (*/<1g); Pottery (*/2g); Slag (*/2g)
3	97	Pit Fill	40	**	4	***	7		*	<1									**	19	*	<1	Flint (**70g); Mag. Mat. >2mm (**/<1g; Mag. Mat. <2mm (***/1g)
4	98	Pit Fill	40	*	2	**	3		*	<1									*	3	*	<1	Flint (*/48g); Mag. Mat. >2mm (*<1g); Mag. Mat. (*/<1g)
5	99	Pit Fill	40	*	<1	**	1												*	2	**	<1	Flint (*/7g); Mag. Mat. >2mm (*/<1g); Mag. Mat. <2mm (**/1g)
6	73	Pit Fill	40	*	<1	*	<1														*	<1	FCF (*/13g); Flint (*/12g); Mag. Mat. >2mm (*/<1g); Mag. Mat. <2mm (**/1g)
7	75	Pit Fill	20	*	<1	**	1												**	2	**	<1	Flint (*/1g); Mag. Mat. >2mm (*/<1g); Mag. Mat. <2mm (**/<1g)
8	77	Pit Fill	40	**	2	**	3												***	62	*	<1	Flint (*/8g); Mag. Mat. <2mm (**/<1g)
9	78	Pit Fill	40	**	1	**	2												*	2	*	<1	Flint (*/16g); Mag. Mat. >2mm (*/<1g); Mag. Mat. <2mm (*/1g); Pottery (**/19g)
10	54	Pit Fill	40	*	<1	**	1												*	1	*	1	Flint (*/11g); Mag. Mat. >2mm (*/<1g)
11	55	Pit Fill	40	*	<1	**	1												*	<1	*	1	Flint (*/22g); Mag. Mat. <2mm (*/1g)
12	119	Pit Fill	40	**	4	***	8		*	<1	***	237	*	18	**	9	**	3	***	98	**	2	Flint (**/387g); Mag. Mat. >2mm (**/1g); Mag. Mat. <2mm (*/1g_Pottery (*/22g)

Overview of the environmental flots (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) Preservation (+ = poor, ++ = moderate, +++ = good)

Sample Number	Context	Period	Context / Deposit Type	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation	Insects, Fly Pupae etc.	Land Snail Shells	Marine Molluscs	Potential	Further work	notes
1	029	1	Pit Fill	5.2	32	100	100	40	*Chenopodiaceae* (*), *Fumaria officinalis* (*), *Sambucus* sp. (*)			***							**	*Corylus avellana* (30)	+		****		CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; no material suitable for C14
2	032	3	Pit Fill	4.9	15	100	10	60	*Sambucus* sp. (*)		*	**	*	*Cerealia* (7), wheat (1)	+				*	*Corylus avellana* (2)	+		***		CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; material may be suitable for C14, to be confirmed
3	97	2	Pit Fill	6.9	10	100	0	80				***	*	cf *Hordeum* (1), *Cerealia* (1)	+				*	*Corylus avellana* (1)	+		**	*	CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; no material suitable for C14
4	98	2	Pit Fill	3.2	20	100	100	40	*Fumaria officinalis* (*)			*	*	*Cerealia* (5)	+				*	*Corylus avellana* (1)	+		****		CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; no material suitable for C14
5	99	2	Pit Fill	12	35	100	0	60			*	**	*	*Triticum* sp. (3), Cerealia (1)	+	*	small *Apiaceae* (1)	+					***		CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; no material suitable for C14

Sample Number	Context	Period	Context / Deposit Type	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation	Insects, Fly Pupae etc.	Land Snail Shells	Marine Molluscs	Potential	Further work	notes
6	73	2	Pit Fill	2.1	12	100	20	60	*Sambucus* sp. (*), *Fumaria officinalis* (*)			**	*	*Cerealia* (4)	+								***		CPR: very low density; Charcoal: very low density	No further work recommended	common rootlets; no material suitable for C14
7	75	2	Pit Fill	1.8	10	100	10	10	*Chenopodiaceae* (*)	*	*	***											***		CPR: no remains; Charcoal: low density	No further work recommended	common rootlets; material suitable for C14
8	77	2	Pit Fill	3.5	17	100	10	25	*Fumaria officinalis* (*)	*	**	***	*	*Cerealia* (1)	+								****		CPR: very low density; Charcoal: low to moderate density	No further work recommended	common rootlets; material suitable for C14
9	78	2	Pit Fill	3.4	14	100	0	40		**	***	***							*	*Corylus avellana* (1)	+		**		CPR: very low density; Charcoal: low density	No further work recommended	common rootlets; material suitable for C14
10	54	2	Pit Fill	9.5	42	100	20	40	Chenopodiaceae (*), Fumaria officinalis (*)	*	*	**	*	Naked wheat (2), Oat (1), *Cerealia* (2)	+							*	****		CPR: very low density; Charcoal: low to moderate density	No further work recommended	common rootlets; material may suitable for C14

Sample Number	Context	Period	Context / Deposit Type	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Seeds Uncharred	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Botanical Charred	Identifications	Preservation	Insects, Fly Pupae etc.	Land Snail Shells	Marine Molluscs	Potential	Further work	notes
11	55	2	Pit Fill	19	70	100	80	40	*Fumaria officinalis* (*)	*	*	**	*	*Cerealia* (2)	+				*	*Corylus avellana* (2)	+		****		CPR: very low density; Charcoal: low density	No further work recommended	common rootlets; no material suitable for C14
12	119	2	Pit Fill	6.9	19	100	10	30	*Sambucus* sp. (*)	**	***	****	**	Naked wheat (1), wheat (3), *Cerealia* (14)	+				*	*Malus sylvestris* (1), *Corylus avellana* (9)	+		****		CPR: very low density; Charcoal: low to moderate density	No further work recommended	common rootlets; material may suitable for C14

Appendix 4: Radiocarbon Dating Report (SUERC)

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

03 August 2021

Laboratory Code	SUERC-99023 (GU58445)
Submitter	Lucy Allott Archaeology South-East Units 1 & 2, 2 Chapel Place Portslade BN41 1DR
Site Reference	SAU17, Project No. 200513
Context Reference	[78], <9>
Sample Reference	ASE_DS_839
Material	Charred Plant Remain : Corylus avellana nutshell frag
$\delta^{13}C$ relative to VPDB	-23.2 ‰
Radiocarbon Age BP	4289 ± 24

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

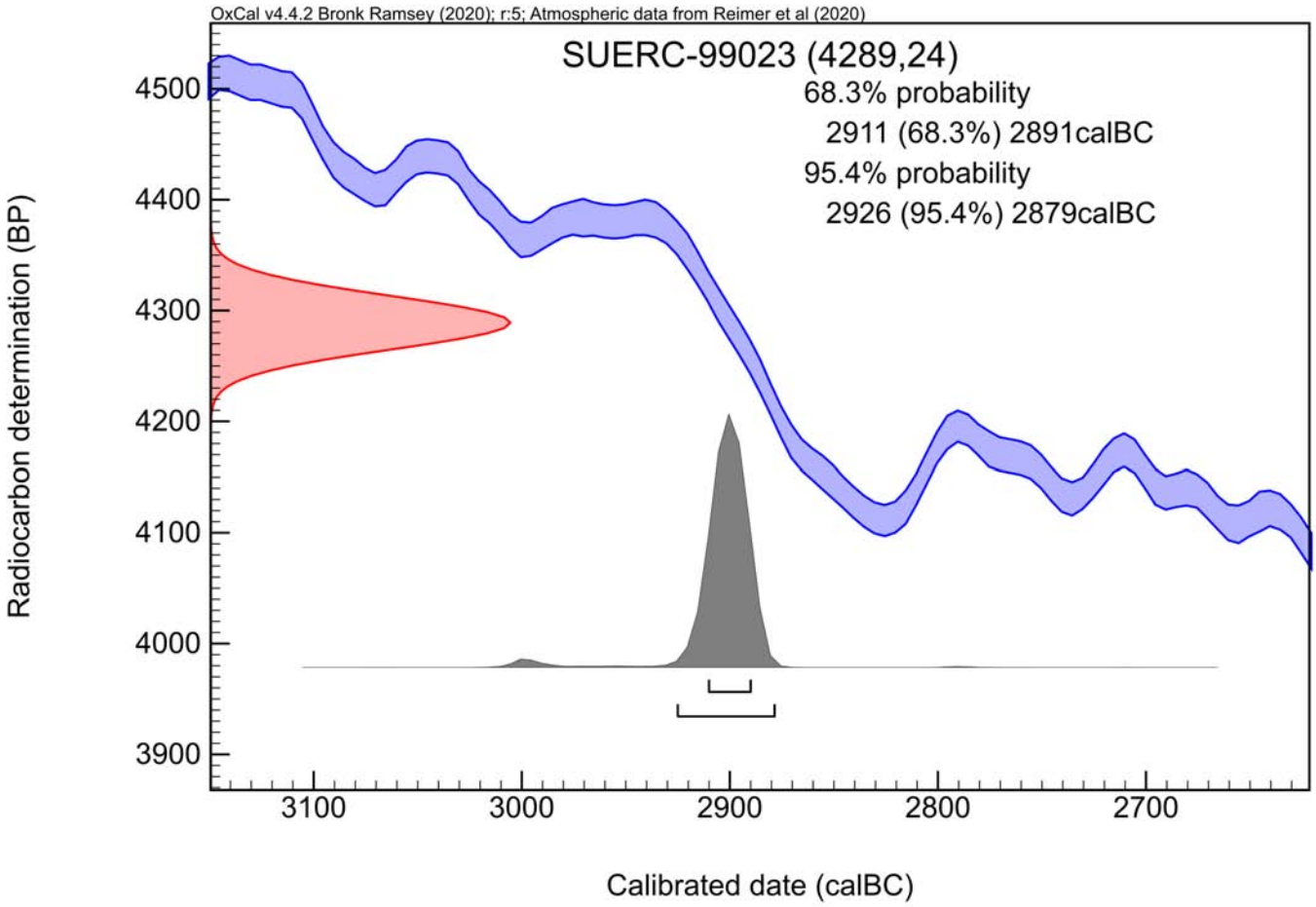
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Nayont



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*

† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

03 August 2021

Laboratory Code	SUERC-99024 (GU58446)
Submitter	Lucy Allott Archaeology South-East Units 1 & 2, 2 Chapel Place Portslade BN41 1DR
Site Reference	SAU17, Project No. 200513
Context Reference	[78], <9>
Sample Reference	ASE_DS_840
Material	Charcoal : Corylus/Alnus sp.
$\delta^{13}C$ relative to VPDB	-25.0 ‰
Radiocarbon Age BP	4394 ± 24

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

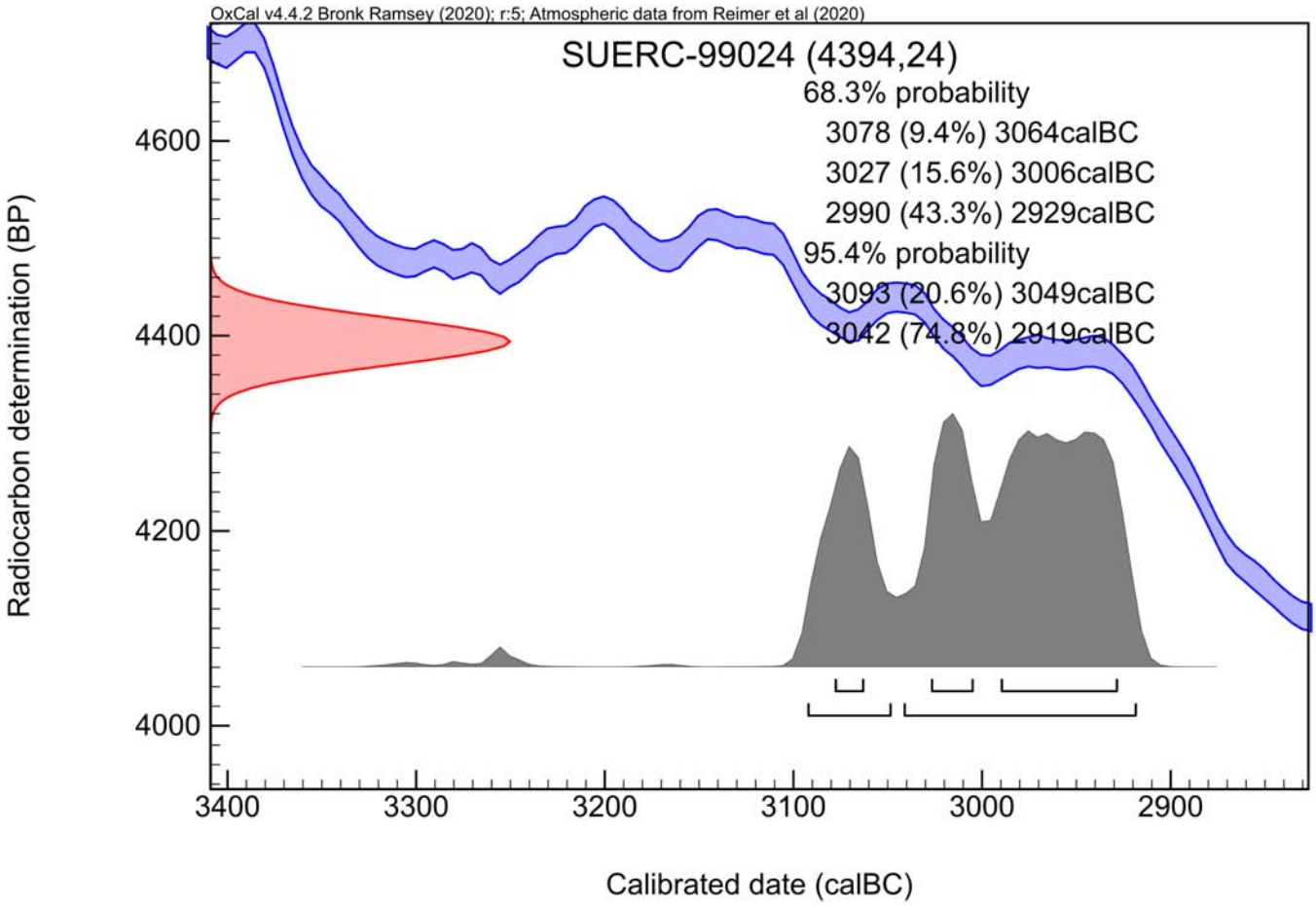
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Nayont



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*

† Reimer et al. (2020) *Radiocarbon 62(4) pp.725-57*

Appendix 5: HER Summary

Site code	SAU17					
Project code	200513					
Planning reference	BH2017/02680					
Site address	Land at the former St Aubyns School, Newlands Road, Rottingdean					
District/Borough	East Sussex County Council					
NGR (12 figures)	537096 102361					
Geology	Chalk					
Fieldwork type		Exc				
Date of fieldwork	7th and 27th January 2021					
Sponsor/client	Fairfax Properties					
Project manager	Jon Sygrave					
Project supervisor	Hayley Nicholls					
Period summary			**Neolithic**	**Bronze Age**		
				Post-Medieval	**Undated**	
Project summary	*The earliest visible occupation of the site most likely occurred during the Early Neolithic with a single pit of this date, associated with a small assemblage of pottery in the Early Neolithic Plain Bowl tradition and flintwork.* *Use of the site certainly increased sometime between the Middle Neolithic and Early Bronze Age with evidence of a pit alignment with structured deposits likely dating to the Middle Neolithic to Late Neolithic transition. Further evidence included a tree throw, a cluster of pits or postholes which may have been associated with a structure, and a single ditch attesting to limited landscape division at some point in this period. A significant assemblage of flintwork and animal bone was recovered from features of this period along with small assemblages of pottery predominantly identified as Grooved Ware, marine molluscs, registered finds and environmental remains.* *Numerous undated pits and postholes, considered most likely of a similar prehistoric date, were also identified. Many shared a similar orientation to the Neolithic pit alignment.* *A small cluster of 19th to 20th centuries pits and postholes were identified, containing clinker and coal. They were considered most likely of an agricultural or domestic nature.* *It is proposed that the results of the work should be published as an article in the journals Proceedings of the Prehistoric Society or Sussex Archaeological Collections.*					

Appendix 6: OASIS Summary

OASIS ID (UID): archaeol6-502317
Project Name: Post Excavation Assessment, Open Area Excavation at LAND AT THE FORMER ST AUBYNS SCHOOL NEWLANDS ROAD, ROTTINGDEAN EAST SUSSEX
Activity type: Post Excavation Assessment, Open Area Excavation
Project Identifier(s): 200513
Planning Id: BH2017/02680
Reason for Investigation: Planning: Post determination
Organisation Responsible for work: Archaeology South-East
Project Dates: 07-Jan-2021 - 27-Jan-2021
HER: East Sussex HER

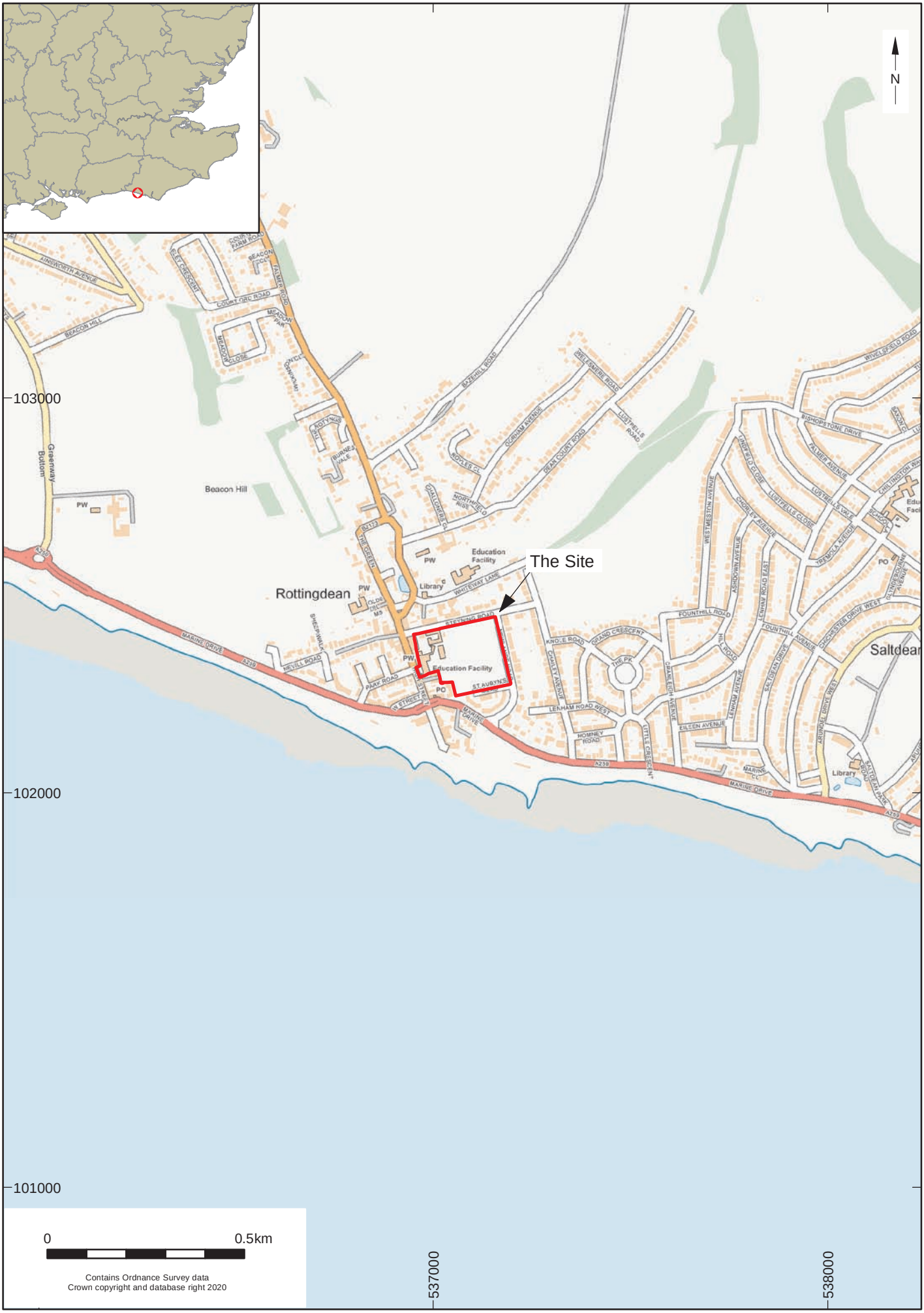
Project Methodology: The archaeological excavation area was sited in its intended location, and to its intended extent, totalling 0.4 hectares. A small extension, measuring 7m by 3.7m was excavated close to the south-west corner of the area, immediately beyond the intended southern limit of excavation. Four Geoarchaeological Test Pits (GTPs 1 -4) were undertaken located at the corners of the excavation area.

Project Results: The earliest visible occupation of the site most likely occurred during the Early Neolithic with a single pit of this date, associated with a small assemblage of pottery in the Early Neolithic Plain Bowl tradition and flintwork. Use of the site certainly increased sometime between the Middle Neolithic and Early Bronze Age with evidence of a pit alignment with structured deposits likely dating to the Middle Neolithic to Late Neolithic transition. Further evidence included a tree throw, a cluster of pits or postholes which may have been associated with a structure, and a single ditch attesting to limited landscape division at some point in this period. A significant assemblage of flintwork and animal bone was recovered from features of this period along with small assemblages of pottery predominantly identified as Grooved Ware, marine molluscs, registered finds and environmental remains. Numerous undated pits and postholes, considered most likely of a similar prehistoric date, were also identified. Many shared a similar orientation to the Neolithic pit alignment. A small cluster of 19th to 20th centuries pits and postholes were identified, containing clinker and coal. They were considered most likely of an agricultural or domestic nature.

Keywords:
Subject/Period: Rubbish Pit: LATER PREHISTORIC
FISH Thesaurus of Monument Types
Subject/Period: Post Hole: LATER PREHISTORIC
FISH Thesaurus of Monument Types
Subject/Period: Boundary Ditch: LATER PREHISTORIC
FISH Thesaurus of Monument Types
Archive:
Physical Archive, Documentary Archive, Digital Archive - to be deposited with Brighton Museum and Art Gallery (including Brighton History Centre)

Reports in OASIS:

Nicholls, H., (2021). *Post Excavation Assessment, Open Area Excavation at LAND AT THE FORMER ST AUBYNS SCHOOL NEWLANDS ROAD, ROTTINGDEAN EAST SUSSEX*. Portslade: Archaeology South-East.



© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 1
Project Ref: 200513	Sept 2021	Site location	
Report Ref: 2021101	Drawn by: FG		

Photograph of the excavation area looking south west

© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 2
Project Ref: 200513	Sept 2021	Site Plan	
Report Ref: 2021101	Drawn by: FG		

537082, 102361

537170, 102361

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18/006
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100a
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537082, 102315
28
Section 1
0
5m
537170, 102315

Period 1 Early Neolithic

Features from other periods

Photograph of [028] looking north east

Section 1

N S 23.60m AOD

029

028

<1>

0 0.5m

© **Archaeology South-East**		Land at former St Aubyns School, Rottingdean	Fig. 3
Project Ref: 2005132	Sept 2021	Period 1 plan, selected section and photograph	
Report Ref: 2021101	Drawn by: FG		

537082, 102361

537170, 102361

N

Section 6

96 G1 124

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18/006 18/004

Section 2

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79 G1

Section 5

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Section 3

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31 G3

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G3 70

Section 4

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35 58 60

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G1

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Section 7

108

1003

537082, 102315

28

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120

19

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15/004

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16

14

537170, 102315

0 5m

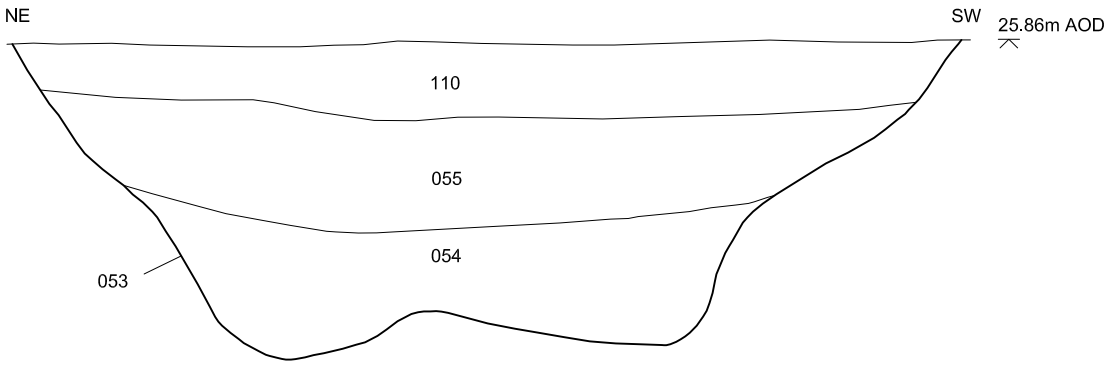
Period 2 Middle Neolithic - Early Bronze Age

Undated features

Features from other periods

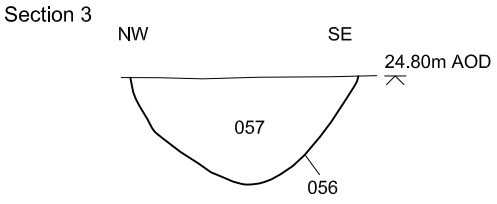
© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 4
Project Ref: 2005132	Sept 2021	Period 2 plan	
Report Ref: 2021101	Drawn by: FG		

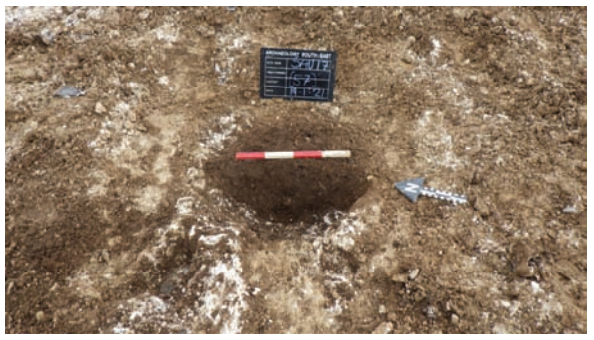
Section 2



Photograph of [053] looking east

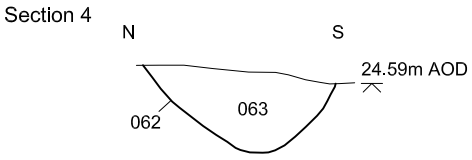
Section 3





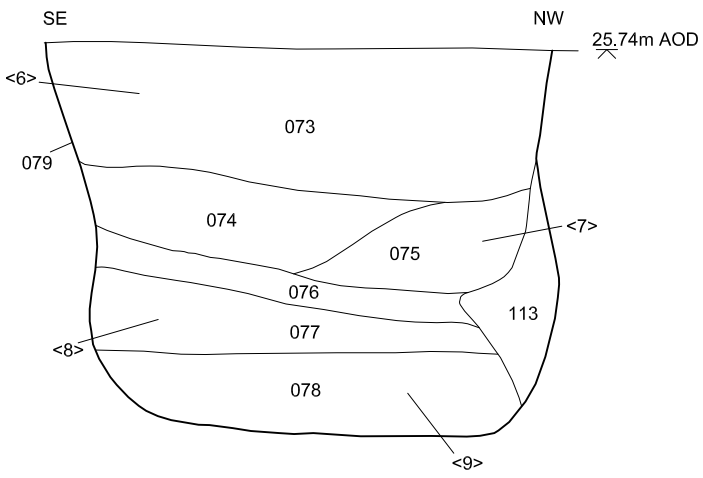
Photograph of [057] looking east

Section 4



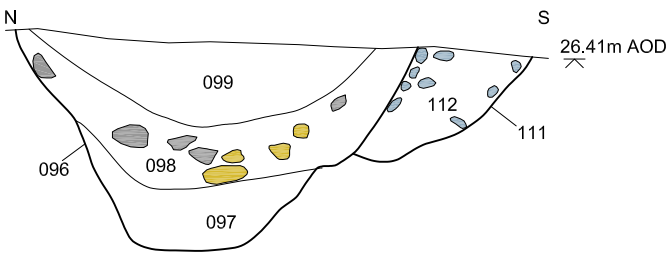
Photograph of [062] looking east

Section 5



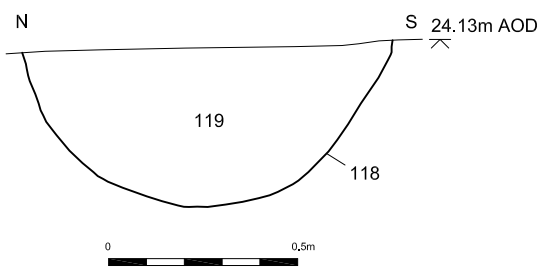
Photograph of [079] looking south

Section 6



Photograph of [096] looking east

Section 7



Flint
Chalk
Sandstone

Photograph of [118] looking east

© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 5
Project Ref: 200153	Sept 2021	Period 2-Selected sections and photographs	
Report Ref: 2021101	Drawn by: FG		

537082, 102361

537170, 102361

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Section 8
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G6
Section 9
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102
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1004
1003
537082, 102315
28

0 5m

Period 3 Post medieval-Modern
Undated features
Features from other periods

Section 8

S N

25.32m AOD

038

037

Section 9

S N

25.24m AOD

044

043

0 0.5m

Sandstone

Photograph of [037] and [043] looking north west

© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 6
Project Ref: 2005132	Sept 2021	Period 3 plan, selected section and photograph	
Report Ref: 2021101	Drawn by: FG		

537082, 102361

537170, 102361

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G4
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Section 10
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104
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118
108
100a
100b
28
537082, 102315
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537170, 102315
Undated features
Features from other periods
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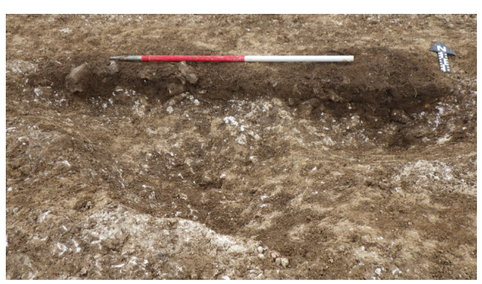

Photograph of [066] and [068] looking north

Section 10

24.49m AOD

SW

NE

069

067

066

068

0

0.5m

© Archaeology South-East		Land at former St Aubyns School, Rottingdean	Fig. 7
Project Ref: 2005132	Sept 2021	Undated features plan, selected section and photograph	
Report Ref: 2021101	Drawn by: FG		

537082, 102361

537170, 102361

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537082, 102315

537170, 102315

Period 1 Early Neolithic
Period 2 Middle Neolithic - Early Bronze Age
Period 3 Post medieval-Modern
Undated features

Moderate positive anomaly
Magnetic debris
Dipolar / Bipolar anomalies

0 5m

© **Archaeology South-East**		Land at former St Aubyns School, Rottingdean	Fig. 8
Project Ref: 2005132	Sept 2021	Phased Plan with Geophysical Survey Data	
Report Ref: 2021101	Drawn by: FG		

GTP1 Section

GTP2 Section

GTP3 Section

View across site showing involutions

© **Archaeology South-East**		Land at former St Aubyns School, Rottingdean	Fig.9
Project Ref: 200513	October 2021	Photographs: Geoarchaeological test pits and view across site showing involutions	
Report Ref: 2021101	Drawn by: LG		

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