Land south of Hartismere High School Eye, Suffolk EYE 083

Post-Excavation Assessment Report

SCCAS Report No. 2012/067

Suffolk County Council:

Jo Caruth and Richenda Goffin:

March/2012

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Author:Jo Caruth and Richenda Goffin

Contributions By: Mike Allen, Sue Anderson, Stephen Benfield, John Crowther, Val Fryer, Lorrain Higbee, Lynne Keyes, Richard MacPhail, Faye Minter, Sarah Percival, Ian Riddler and Philippa Ryan

Illustrator:Ellie Hillen

Editor:Richenda Goffin

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Prepared By: Jo Caruth
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Approved By: Richenda Goffin
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Signed: **********

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Abbreviations used in the text

EAS - Early Anglo-Saxon

EBA - Early bronze Age

EIA - Early Iron Age

ENeo - Early Neolithic

EVE - Estimated Vessel Equivalent

LBA - Late Bronze Age

LNeo - Late Neolithic

LOI - Loss on ignition

MNV - Minimum number of vessels

SCCAS - Suffolk County Council Archaeological Service

SFB - Sunken Featured Building

SUERC - Scottish Universities Environmental Research Centre

Summary

This post-excavation assessment report presents an assessment of the evidence from an archaeological excavation of 4.67ha in advance of the construction of a new playing field at Hartismere High School, Eye. The excavation, undertaken by SCCAS Field Team in 2007, identified previously unknown evidence of occupation from the Earlier Neolithic until the post-medieval periods, of which the most significant was evidence of an early Anglo-Saxon settlement.

This report provides a quantification and assessment of the site archive and considers the potential of that archive to answer specific research questions. The significance of the data is assessed and recommendations for analysis and dissemination of the results of the fieldwork are made, to secure the value of the archaeology for public, professional and academic audiences. The report has been prepared in accordance with the brief for the scheme of archaeological investigation, required by the condition attached to the planning permission for the playing field.

The site lies less than 1km west of the medieval fortified town of Eye on a south-facing slope alongside a tributary of the River Dove. The River Dove and its tributaries transect the clay plateau of north Suffolk linking the two important medieval settlements of Eye and Hoxne. These valleys provide light, fertile soils and are a focus for settlement of all periods. The putative location of a high status Roman site within or close to Eye, and the discovery of two late Roman coin hoards, suggests the possibility of a substantial Roman estate along the Dove valley, centred in or close to Eye.

Evidence from antiquarian excavations and recent metal detecting have identified wealthy early Anglo-Saxon cremation and inhumation cemeteries from the 5th century onwards, suggesting that this area continued to be occupied and important, during the early Anglo-Saxon period.

Excavations of early Anglo-Saxon settlements are still rare across the country and, in terms of area (although not in terms of building numbers), Hartismere School is one of the largest investigations of this period in the East of England, that is the historically-attested East Anglian Kingdom. It is still one of only a handful of such sites to be intensively excavated in the county, and the first in north-central Suffolk. The early

Anglo-Saxon settlement remains are, therefore, of regional and national importance, because of the rarity of opportunity for investigation, while aspects of the evidence are of international significance for improving our understanding of this period.

Evidence of dispersed early Anglo-Saxon settlement was found across the majority of the excavation area, consisting of two earth-fast posthole buildings and at least eighteen Sunken Featured Buildings (SFBs or *Grubenhäuser*). One of the former is of especial significance because it appears to be in the form of a continental long-house, a building type so far absent from the archaeological record in England. Assuming the detailed analysis confirms the preliminary dating, this discovery is of international importance for early medieval studies.

There are no other posthole buildings or halls of this period, which are typically found on other sites that have been intensively excavated. The absence of the typical pattern of small groups or clusters of SFBs associated with a single earth-fast posthole building or hall, as at West Stow for example, is notable.

The dispersed arrangement of the SFBs across the site makes it difficult, at this stage, to identify any sequence or pattern of replacement. The close proximity of some SFBs to one another could mean they were contemporary but, equally, it they could be sequential with one replacing the other. The evidence from Hartismere School does not seem to suggest intense occupation given that the site appears to have been used for *c*.150-200 years. At West Stow, for example, sixty nine SFBs and seven halls occupied an area of just 1.8ha, which was occupied for *c*.250-300 years. There was no evidence for property divisions or bounded space during this period, which is a characteristic feature of settlements of this early date; at West Stow, ditches did not appear within the settlement until the early 8th century.

The SFB's displayed different constructional elements. All were based on central ridge posts (indicate by ridge postholes), but the number of other postholes varied and four had internal structural slots around at least one part of the sunken feature. Their fills contained varying amounts and proportions of material culture which is typical of sunken features from other sites. In particular, high levels of animal bone were found in those located in the centre of the site. The environmental evidence identified different

characters to their fills, with some containing domestic debris, some that appeared to be derived from scattered refuse and some with evidence for craft or industrial activities. This evidence has the potential to help identify different craft and industrial activities carried out across the site.

The main dating evidence comes from the Anglo-Saxon small finds and pottery, often difficult to date accurately, which suggest occupation from the 5th to 7th centuries, but with the most intense activity in the 5th and 6th centuries. However, absolute dating techniques will be critical in determining the phasing and development of the Hartismere settlement.

Evidence of the activities being carried out on site is contained within the finds and environmental assemblages. The finds set includes a large assemblage of early Anglo-Saxon pottery (2.9kg), a small part of which was decorated. There are over 200 small finds including nineteen brooches, which is an unusually high number for a settlement, thirteen wrist clasps, pins and pendants. Also of significance was a rare Runic inscription on a strip of copper alloy; only *c*.20 Runic inscriptions survive for this period in England.

There was evidence of craft activities, such as antler and bone working and also textile working. There was, however, an unusually small number of clay loomweights, which are normally ubiquitous on settlements of this period, but there were needles, pin beaters and spindle whorls to indicate, if not weaving, textile production on the site. The recovery of part of a balance and a scale pan is the first of its kind from a settlement context in this country. This is highly suggestive of commercial activity on this site, which is also indicated by the high proportion of unpierced late Roman coins, brooches, copper alloy ingots or iron bloom. Among the seven woodworking tools from the site was an adze head which is also a relatively uncommon find in England.

Evidence for iron smelting is provided in the form of a large *in situ* deposit of drip slag (*c*.6.8kg) within a furnace pit, in the south-east corner of the site. Non ferrous metal working is demonstrated by a copper alloy ingot and fragments of copper alloy waste, as well as a lead alloy model for a florid cruciform brooch. The presence of fragments of earlier copper alloy objects, such as prehistoric axe fragments found across the site

may represent the collection of material for re-cycling. Collection and curation of earlier material is also evidenced by the presence of pierced Roman coins which would have been worn as pendants.

Environmental evidence may indicate the materials used in building construction, such as use of reeds on the roofs. One activity, however, not apparently taking place on site was cereal processing as only cleaned grains were identified suggesting that the cereal was being bought in ready to use rather than grown and processed on site. Assuming the assessment results can be substantiated by the detailed analysis proposed in this report, this is significant for our understanding of the organisation of activities within the settlement and for the organisation of the rural economy, if the settlement was provisioned with processed grain from elsewhere.

Sixteen shallow rectangular flint-burning pits, i.e. pits with charcoal in the base below burnt flints, were scattered across the entire site, although with several small clusters of two or more. Similar features have been identified on other contemporary sites in this region, for example at Kilverstone in Norfolk, but their function is currently unclear. This, and their date, will be a subject of the detailed analysis.

A narrow hollow bisected the centre of the site, north to south. Surface deposits – the survival of which are exceptionally rare on sites of this period – were preserved in the base of this feature, including a cobbled surface into which wheel ruts could be seen. The spacing of these shows an axle width of *c*.6'6'' for quite a substantial cart, and they are very similar to evidence from the Middle Saxon settlement at Brandon. Excavation to the north of the current site in 2011 identified primarily late Roman deposits, the latest of which were a gravel and cobbled surface and two ditches, which aligned with the trackway. The possibility that this trackway is late Roman cannot, therefore, be excluded at this stage. The base of the hollow, and the cobbled surface, was cut by a number of intercutting pits. Their place in the stratigraphic sequence suggests that, assuming they are Anglo-Saxon, they formed part of the earliest activity from this period on site. The upper deposits filling the hollow contained mixed debris, including pottery, fired clay and much animal bone.

Overall the site produced a vast quantity of animal bone (*c.*475kg), in a good state of preservation and possibly representative of the processing of animals on or near the site rather than simply consumption. Assessment of this suggests that most of this material is likely to be early Anglo-Saxon and not residual from earlier occupation. The assemblage, therefore, has good potential to investigate provisioning of the site, and the relative importance of different species to the cultural and economic life of the settlement. Based on the assessed sample, 47% of the assemblage is cattle, 28% pig and 25% sheep/goat. The species ratios, and mortality profiles, are more similar to Bloodmoor Hill than West Stow, which is significantly different. Variations across the site also offer potential for examining disposal patterning. For example, there was an unusually high proportion (51%) of horse bone, much of it butchered, in the upper deposit filling the central hollow. Semi-articulated young cattle remains were also recovered from this feature.

Assessment of the environmental evidence has provided evidence of both domestic and craft working/industrial activity and provides general landscape data, although in many cases the assemblages recovered from the samples was sparse.

The presence of a substantial colluvial deposit at the base of the slope revealed a high level of surface finds, which were recorded either by 2m grid square or by individual plotting. A sample of this deposit was also excavated in 2m squares. This evidence, along with comparison of the character of material within other feature types, will allow detailed investigation formation processes, and refuse disposal patterns and possibly spatial zoning of activities on the site.

The Anglo-Saxon evidence raises a number of questions that relate to regional research priorities particularly with regard to the characterisation of rural settlement forms and functions, the study of building types, production, provision, trade and the Anglo-Saxon economy and also the Roman-Saxon transition. The research objectives for the detailed analytical stage of investigation are proposed in the second part of this report, after the evidence has been assessed.

In addition to the early Anglo-Saxon occupation, a small number of features were dated, by pottery, to the Earlier Neolithic in the lower, southern half of the site. These included a single cremation and scattered pits.

Four Late Neolithic/Early Bronze Age cremations were found along the north edge of the site, and an undated crouched inhumation in the east half of the site is suspected to be of the same date. The location of these, just below the prow of a south facing slope overlooking a valley, is a favoured site for burials of this period. However, precise dating of the burials is necessary, so that they can be discussed in the context of other Late Neolithic Beaker burials and funerary practice in the region.

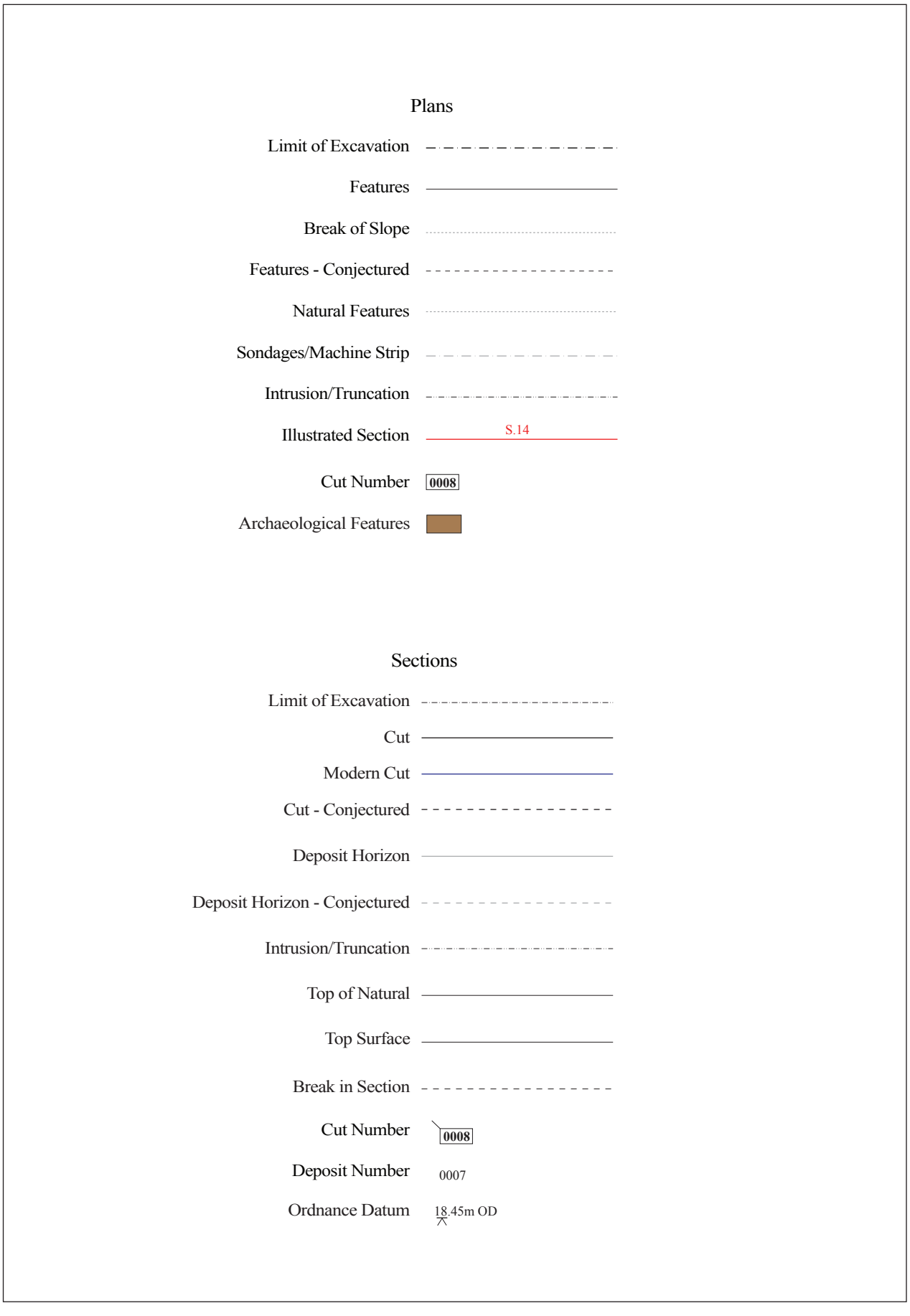
There were two groups of Later Bronze Age/Earlier Iron Age (LBA/EIA) pits and two round houses, probably of the same date. Large assemblages of LBA pottery (over 2kg) and EIA pottery (over 2kg) were recovered from the site. This evidence has the potential to address some key regional research questions for the period, such as the chronology of LBA-EIA pottery, the form of the buildings and the relationship between landscape and settlement during this period.

Evidence of Roman occupation on this site was restricted to stray finds and a single possible Roman feature. In contrast, excavations in 2011, also undertaken by SCCAS Field Team, on the plateau immediately north of the current site identified evidence of late Roman field systems but no Anglo-Saxon evidence.

Evidence post-dating the early Anglo-Saxon occupation is sparse. A later field system, which is largely undated, cuts across the site.

It is anticipated that the results of the analysis, proposed in this report, will make a significant contribution to our understanding of life in the Anglo-Saxon period, questioning and changing some current perceptions. It is recommended that the results are of sufficient importance to justify publication in the East Anglian Archaeology Series. It is also proposed that the evidence from the adjacent site, which is currently under assessment, should be examined with the current site because it makes a significant contribution to the understanding of the immediate context.

Drawing Conventions



1. Background

1.1. Introduction

Archaeological excavation of a 46,730m^2 area south of Hartismere High School, Eye, was undertaken between July and October 2007 in advance of the construction of new playing fields.

The archaeological fieldwork was funded by Suffolk County Council Schools Education Playing Fields Service and carried out by Suffolk County Council Archaeological Service Field Team.

1.2 Site location, Geology, Topography and Land-use

The site lies at TM1376 7395, less than 1km to the north-west of the medieval fortified town of Eye. It is situated on a south facing slope overlooking a tributary of the River Dove, between 38.5m and 31.3m OD. The underlying geology is Melford Till, overlain by deep, fine well drained loam over clay, but with some calcareous clayey subsoils. Within the excavation area, the natural was a mix of pockets of fine orange silt, a heavier clay and patches of stony silt with fragmented chalk towards the east and north ends of the site (although the north end was truncated by the railway line). Towards the bottom of the slope the natural was covered by deposits of colluvium up to 1.5m deep, above river gravels.

The tributary is within a narrow elongated valley, aligned west to east from Yaxley; at some point in the past, the tributary has been channelled. The tributary flows round the north side (and defines the north edge) of the historic settlement core of Eye before joining the River Dove to the east (Fig. 1). The Dove itself is a tributary of the River Waveney, meandering north-east in a broad valley towards the Waveney north-west of Hoxne.

Hartismere High School lies on the top of the slope, at 39.5m OD, beyond the north edge of the site and fronting onto Castleton Way (*c.*135m north of the site). The excavation was roughly subrectangular in shape, 335m long (east to west) x 170m wide (north to south) at the widest, west end narrowing to 90m at the east end.

The north edge of the development site is formed by the north edge of the former trackbed of the GER Mellis & Eye Railway (Fig. 2; see below), which went through a slight cutting at this point, curving gently west to east-south-east; the line was closed in 1964 and the trackbed has long since been removed; the north edge of the site has been completely destroyed as a result of this landscaping. Examination of the level data for the natural silt to the south and north of the railway line shows only a slight difference with the northern field, the site of EYE 094 about 0.5m higher than the northernmost points of EYE 083. This suggests that the railway line may have followed, at least in this area, the natural line of the top of the slope.

The southern limit was formed by a boundary hedge defining the north edge of the tributary floodplain; there was again a significant difference in levels (c. 0.7m) between the two sides of this boundary which is the result of colluviation against a long-standing boundary (see below).

The west side of the development site was defined by a boundary hedge marked on the 1839 Tithe Map, although the excavation area stopped short of the boundary by c.25m. The east boundary was an arbitrary point, before the convergence of the old railway and the edge of the floodplain *c.*100m to the east.

The site lies on the edge of an area defined as Rolling Valley Claylands in the *Suffolk Landscape Character Assessment* (www.suffolklandscape.org.uk), the key characteristics of which are as follows:

- Gently sloping valleys on medium clay soils
- Occasional notable steeper slopes
- Fields often smaller than on surrounding plateaux
- Localised influence of landscape parks
- Focus of settlement
- Few large greens or commons
- Ancient woodland on the upper fringes of the valley sides

The recent Historic Landscape Characterisation project (Martin and Satchell 2008) identified the area as one of 'type 3 common fields'. This is typified by irregular patterns of land holdings, generally concentrated near the farmsteads rather than evenly

distributed across all the fields, and many of which were already enclosed before the 1850 enclosures act.

Immediately prior to excavation, the site was under arable cultivation.

1.3 The scope of the project

This report is produced by the Suffolk County Council Archaeological Service (SCCAS). It has been prepared in accordance with a Brief and Specification issued by Suffolk County Council Archaeological Service Conservation Team (Appendix 1), and in consistency with the principles of Management of Archaeological Projects 2 (MAP2), notably Appendices 4 and 5 (English Heritage 1991).

The objectives for this assessment are to:

- Summarise the results of the archaeological fieldwork.
- Quantify the site archive and review the post-excavation work that has been undertaken to date.
- Examine the potential for the results to address the original project aims.
- Identify and assess the potential of the site archive to answer new research questions arising from the fieldwork.
- Assess the potential of the site archive to address the research priorities as outlined in the revised Research Agenda for the Eastern Counties (Medleycott, 2011).
- Make recommendations for further analysis and publication of the results of the fieldwork.
- Identify appropriate vehicles for the dissemination of the results both to the archaeological and local community, in particular the school and its families.

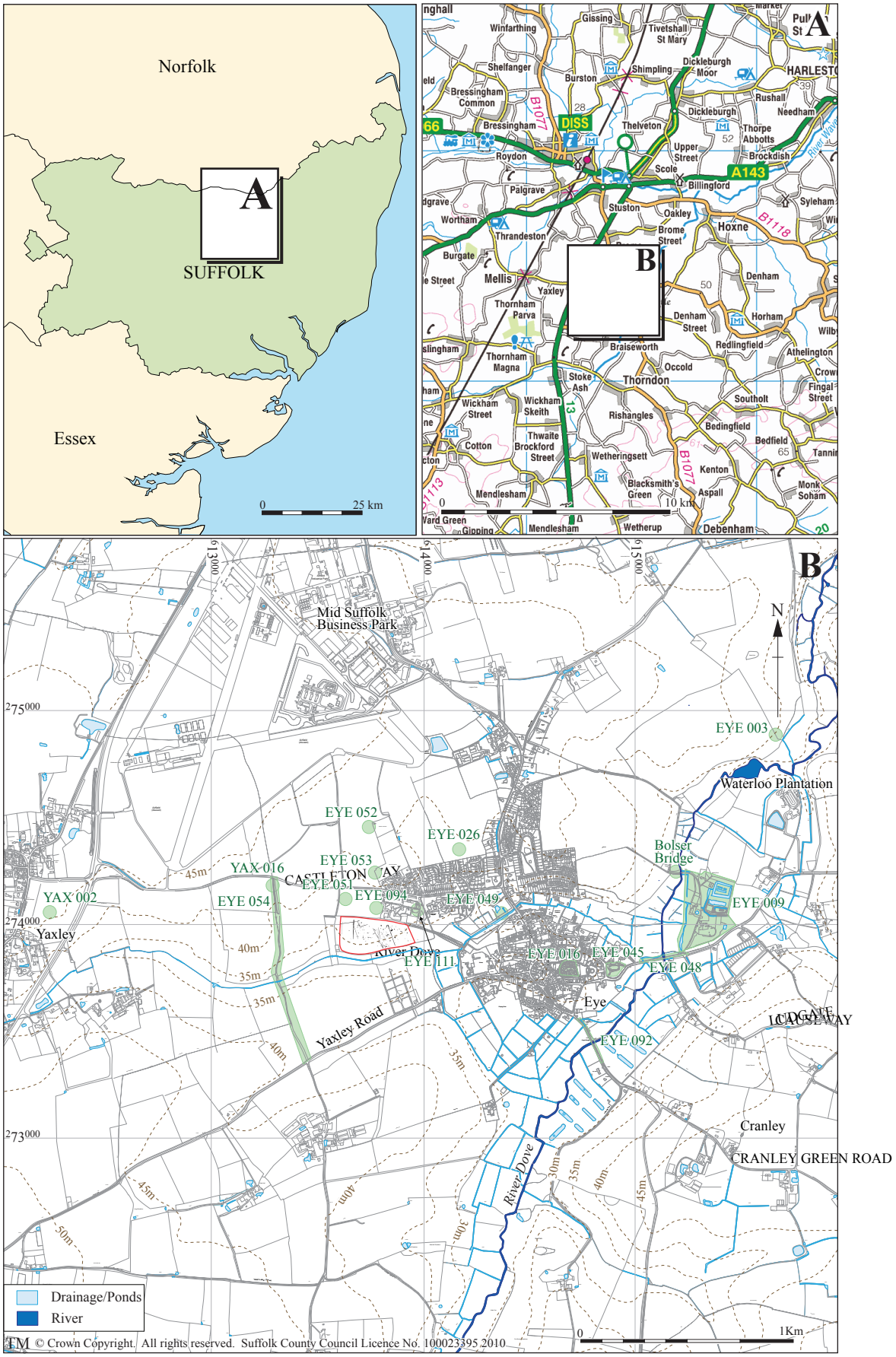


Figure 1. Site location showing Historic Environment Record entries mentioned in the text

1.4 Archaeological and Historical context

The site lies in an area of high archaeological importance, as defined in the County Historic Environment Record and is situated *c*.870m (centre to centre) south-west of the medieval borough of Eye (Fig. 1). The name, Eye, is derived from the Old English for 'island' and the town covers *c*.15ha of high ground (rising from *c*.28 to 35m OD) encircled by the River Dove to the east and south-east; its tributary to the north; and by low-lying land, part of which now forms the Town Moor, to the west and south-west (Fig. 1).

There have been Palaeolithic, Mesolithic, Neolithic and Bronze Age finds from the Eye area, although there have been few systematic archaeological investigations in and around the town, due to the lack of large developments within the historic core which is a designated Conservation Area. The earliest evidence on the Suffolk HER of settlement in the town dates from the Roman period and includes a building with hypocaust and coins dated *c*.AD365 (EYE 024), although the accuracy of the location is now in doubt (J Plouviez, pers comm.). However, two significant late Roman hoards, both in the Dove Valley – one from Hoxne, north-east of Eye and the second from Clint Farm, south of Eye – attest to the affluence of the area in the Roman period, and may suggest a large, wealthy estate centred on the Eye villa, wherever it may actually have been.

One of only two known, substantial early Anglo-Saxon cremation sites in Suffolk lies along the Dove valley north-east of Eye (EYE 003), which was found in a sandpit in 1818 *c*.2km to the north-east of the current site (West 1998, 35); the other site lies in the Lark valley at Lackford in the west of the County (LCK 001; Lethbridge 1951). It is likely that these cremation cemeteries represent the earliest burial sites to be established by the newly settled immigrant population. Evidence from metal detecting in recent years along the river valleys, and recorded in by the Portable Antiquities Scheme, has identified a number of likely early Anglo-Saxon inhumation cemeteries and a further possible cremation site (YAX 016) has been defined *c*.575m to the north-west of the current site (Fig. 1). The recovered objects indicate a 5th to 6th century date for the YAX 016 cemetery, contemporary with the date of the settlement remains defined at the current site (see below).

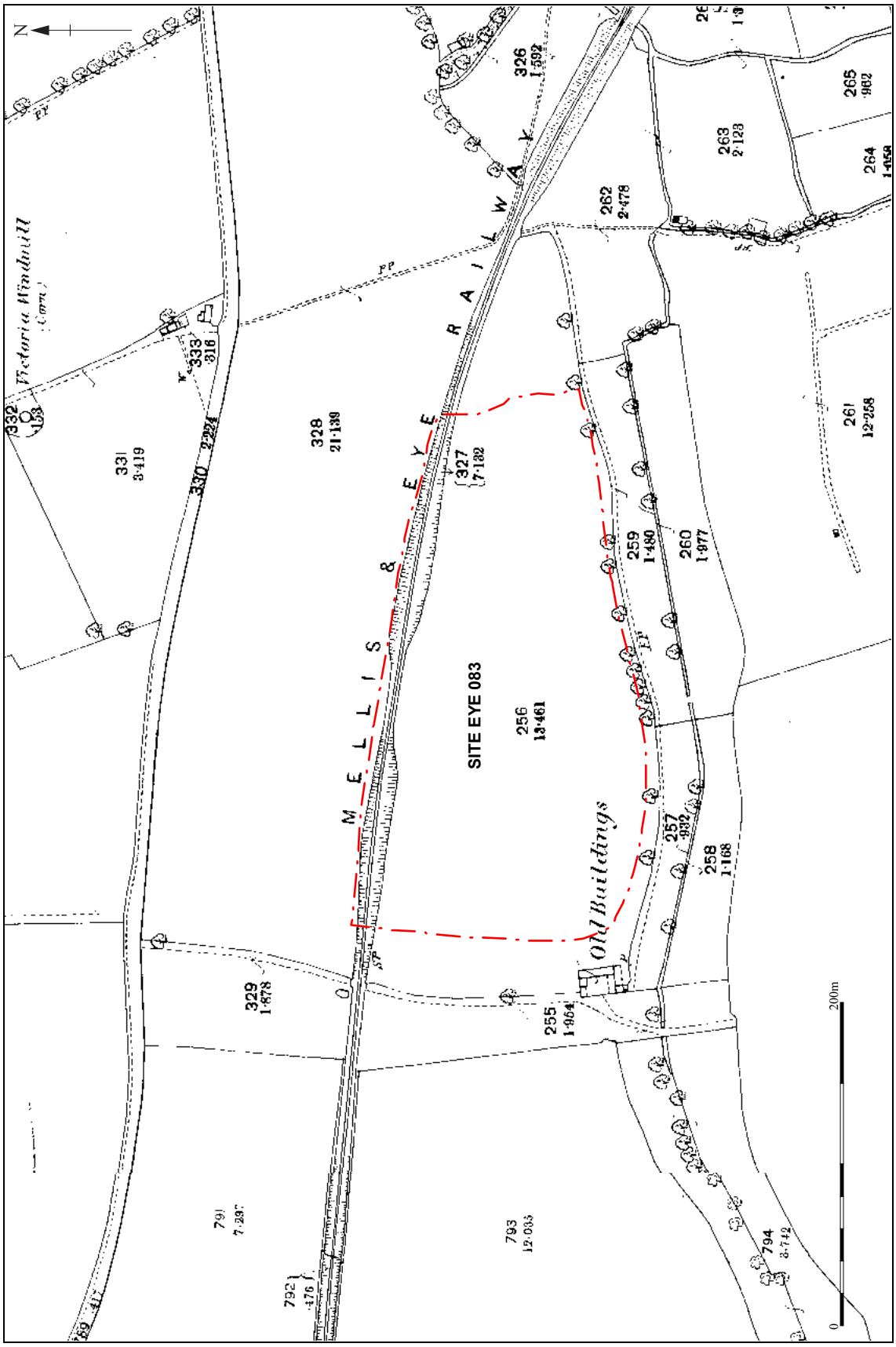


Figure 2. 1886 Ordnance Survey Map of the site

Approximately *c.*400m to the north, metal-detected finds suggest a probable inhumation cemetery (EYE 051, 052, 053 and EYE 108; including small-long and cruciform brooches) scattered across an area 200m wide, although undated metalworking evidence also suggests other activity (Fig. 1). Objects indicative of further early Anglo-Saxon occupation have been found *c.*1.5km to the west in Yaxley (YAX 002, a lead weight with a piece of decorated gilded copper alloy set in the top, probably from a saucer brooch, and also an 8th century caterpillar-type brooch) and to the east (EYE 049 - tweezers) within the historic core.

Recent archaeological evaluation in 2010, in the grounds of the former hospital to the east, yielded a small assemblage of pottery and a small-long brooch, contemporary with the Hartismere School site, as well as small assemblages of Later Bronze Age to Iron Age and also Roman pottery (EYE 111), which strongly indicates that the occupation continued eastwards from the Hartismere School site. Early Anglo-Saxon brooches and a silver *sceat* have also been found on the opposite side of the valley, immediately south of the site. Again, these are the results of piecemeal investigations and it is difficult to draw any firm conclusions from the dataset; it is difficult to estimate what proportion of known or recorded sites this represents. That said, the evidence suggests a densely occupied landscape along the river valleys by the 6th century, based on the number of cemeteries that have been identified by metal detecting. The site at Hartismere School represents the first settlement evidence to be defined in this area, providing insight into where and how they lived, which is notoriously difficult to establish through metal detecting alone.

In fact, it is likely that the river valleys were quite densely occupied throughout all early periods. In addition, there is a Neolithic flint scatter recorded immediately to the west (EYE 005) of the site and objects typical of those making up Bronze Age metal hoards have been recovered from across the parish of Eye and its neighbours. Again, much of this activity can be seen to be focussed along the Dove valley and its tributaries.

Prior to the Norman Conquest, Eye was one of the many land holdings of Edric of Laxfield, a wealthy and influential Saxon and the third largest land holder in Suffolk. No archaeological evidence has, as yet, been defined of either Middle or Late Saxon occupation within the town, but this is perhaps a reflection of the small number and small scale of archaeological interventions that have taken place.

After the Norman Conquest, the 'Honour of Eye' was granted to William Malet, a Norman Lord and ‘hero’ of the battle of Hastings; this continued to be held by royal or noble families until 1823. Eye Castle (EYE 018) was constructed between 1066 and 1071 by William Malet and a highly successful market resulted leading to the urbanisation of the settlement. Later in 1086-7, Robert Malet, William’s son, founded the Benedictine Priory of St Peter (EYE 009), a cell of the Abbey of Bernay in Normandy. Although the current church (EYE 045) dates from the 14th century, a church site existed in 1066 (as recorded in Domesday) and there is a curving churchyard which may be indicative of an early Christian site (Paine 1993).

The site lies outside the medieval urban area of Eye, off Castleton Way, in a district known as Hartismere. Hartismere was originally the name of the hundred which included the parish of Eye and was recorded in Domesday as Hertesmerel, meaning Hart's (a personal name) mere and would have derived from the name of the meeting place, a site that is now lost. Although not locatable as a place name anymore, it was used as the name of the hospital (closed in 2006) which was created out of the former Eye workhouse (which opened in 1779).

The current site lies 135m south-west of the former hospital. The school buildings lie on a plateau north of the excavation area, and the first school on the site was opened in 1935 (Paine 1993). After the Comprehensive reorganisation the school became Hartismere High in 1979 and a number of new buildings were constructed (Paine 1993). During SCCAS excavations in 2007 a member of the public reported the discovery of springs on the site of the new buildings. This evidence has not been corroborated.

A documentary study of the site was undertaken by A.M Breen (Appendix 2) which identified former owners of the site, and established a long history of arable farming and pasture in these fields. An arable field covering the east half of the site was named Mill Field on the 1839 Tithe Map, and a pasture field just south-west of the site, Spring Meadow. The Tithe Map shows a windmill, labelled as Victoria Windmill (corn), on the opposite, north side of Castleton Way and it is likely that this field belongs to the mill. Springs have been recently reported as being present on parts of the site, and in the second half of the 19th century lands to the east of the site were occupied by flax works, a highly water dependent operation. The land was owned by the Kerrisons and the

farm to which they belonged tenanted. The farm premises appear to have stood on the same site as the later flax works. A group of buildings, and access track, is recorded with the south-west corner of the site on the plan of the proposed railway, dating to 1864. These are not, however, shown on the Tithe Map. The 1886 Ordnance Survey Map records the same buildings as 'old buildings', although they are still marked as old buildings on the 1984 OS map; they had been demolished at some point before the excavation in 2007; they lie immediately outside the excavation area.

370m to the west of the current site there is a north to south aligned hollow way (EYE 054), known as Rapsy Tapsy Lane (now a track) on early maps, of unknown but possibly early medieval (or earlier) date. This forms the parish boundary between Eye and Yaxley.

However prior to the current work, nothing was recorded by the Suffolk HER within the development area.

1.5 Original project aims

The original aims of the project were defined in the Brief and Specification for the archaeological excavation (Tipper 2007) and were as follows:

- To identify and fully excavate and record all archaeological deposits which would otherwise be damaged or removed by development
- To investigate the potential for the site to produce, in particular, evidence for prehistoric and Anglo-Saxon occupation

1.6 Circumstances and dates of fieldwork

The archaeological investigation was carried out in response to Planning Condition 6 (standard PPG 16 Paragraph 30 condition) imposed by the Local Planning Authority (SCC), relating to a planning application submitted by SCC (Director for Children and Young People) for the construction of a new playing field.

Access to the site for archaeological evaluation – which would be routinely undertaken for a site with high archaeological potential, and also for a site of this size – prior to the start of the playing field construction was not possible, due to land ownership issues, and therefore the work was carried out as a strip and map excavation, in advance of

development, which started on 14th May 2007. This work quickly established the presence of significant archaeological features across the site, leading to a full open area excavation. The excavation, covering an area of 46,730m^2 in total, was undertaken by SCCAS, Field Team, directed by Stuart Nicholls from May until late July 2007 and by Jo Caruth from late July to October 2007. The fieldwork was carried out in accordance with a Brief and Specification issued by Jess Tipper, SCCAS Conservation Team (Tipper 2007; Appendix 1).

1.7 Excavation methodology

The site was stripped by the playing field contractor, Anglian Land Drainage, using a 360^0 tracked excavator and two 20T wheeled dumpers. The topsoil, *c*.0.3–0.4m deep, was removed under archaeological supervision to expose the top of the archaeological deposits. At the top, north end of the site, features were cut into the natural subsoil below topsoil. A finds-rich alluvial deposit was defined at the south end of the site. Feature fills were sealed by this upper deposit, although the presence of an SFB and a burnt flint pit could be determined by diffuse-edged changes to the characteristics of this material, reflecting the deposits underneath. All exposed archaeological features, deposits and surface finds, and also small finds, were recorded using Leica TCR 705 Total Station Theodolite (TST) as they were identified.

The features were excavated and recorded in accordance with standards laid down in Gurney 2003 and to at least the minimum requirements of the specification. Archaeological contexts were allocated unique context numbers and written descriptions made on *pro-forma* context sheets. All features were planned at a scale of 1:50, with detailed plans of structures at 1:20 and drawn in section at 1:10 or 1:20, as appropriate. The location of features and sections were recorded using the TST on completion, allowing a working site plan to be produced concurrently with the excavation. A topographic survey of machine-stripped surface was also undertaken at 5m intervals (Fig. 3). This reflects the top of the natural strata in all areas apart from the buried soil deposits at the base of the slope. The photographic record consisted of high-resolution digital images and monochrome prints.

Following hand-cleaning with hoe, shovel and trowel, a variety of excavation techniques were used. Metal detecting was routinely undertaken on all mechanically excavated

Figure 3. Complete site plan with main group or feature numbers marked and contours plotted

and hand-dug soils, and magnets were used in selected features to identify the presence of hammerscale.

Sunken features associated with buildings were hand-excavated by context, in four quadrants with finds recorded separately to give coarse horizontal spatial resolution. Baulks were left in between to record the longitudinal and coaxial sections, after which these were also removed. Bulk samples for macrobotanical remains, were taken from each context. Four of the pits were also sampled for micromorphology (SFBs 0221, 0713, 2503 and 3108). To provide greater vertical spatial resolution in an attempt to characterise the nature of their fills in more detail, their (otherwise uniform) deposits were dug in 10cm spi ts. Selected feature fills were passed through a 10mm sieve, but none of the fills of the buildings were sieved, these were all dug using only a trowel for the excavation work.

Discrete pits were 50% sampled and (at the very least) those which contained significant, or unusual, finds assemblages were fully excavated. The burnt flint pits were fully excavated, in two halves, some with axial and others with longitudinal sections. The possible furnace pit 0735 was also fully excavated. Again, bulk samples were taken from each context for macrobotanical remains. Likewise, postholes that could be related to buildings were half-sectioned and subsequently fully-excavated.

Ditches were base-planned, and variably sampled. In general, ditches were sampled every 10m with a 1m wide segment (i.e. 10% sample), with intersections with other features also sampled to provide stratigraphic relationships.

The extensive buried soil deposits along the south edge of the site were sampled (Fig. 4) using 2m grid squares covering 2.5% of the total area, but focused along linear axes, either by hand excavation with trowel or by shovel and sieve. These were individually numbered, and renumbered at defined spit levels or identifiable deposit changes, again to provide vertical and horizontal spatial control to the finds. Samples were taken from these deposits for macrobotanical remains, molluscs, phytoliths, pollen, phosphates and micromorphology. The majority of these deposits could be adequately preserved *in situ*, given the cut and fill construction methodology of the development. Consequently, only limited sample excavation took place in the central part of this deposit, in order to adequately characterise it, followed by surface collection of finds and metal-detecting in

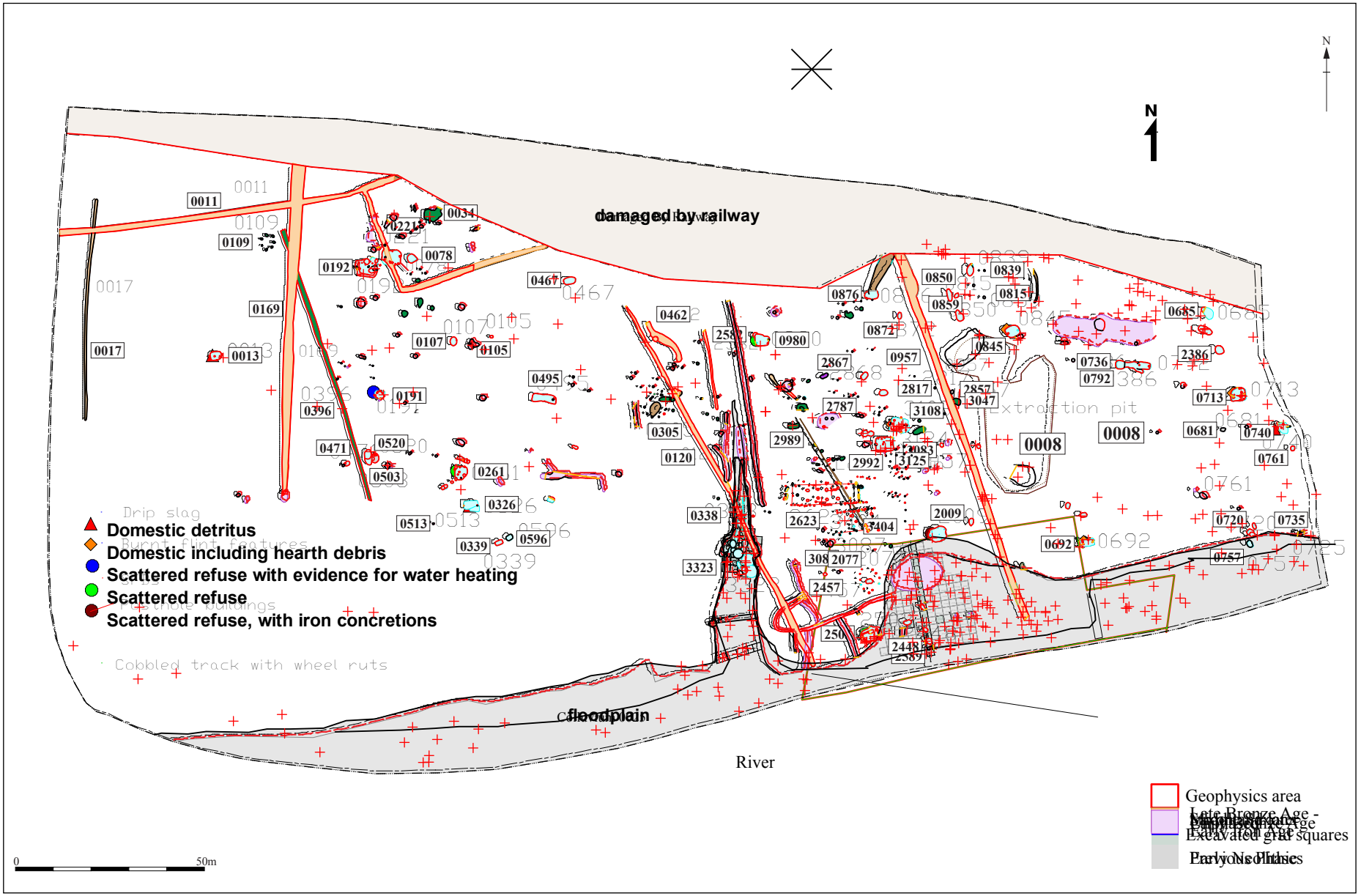


Figure 3 Plan of Late Bronze Age and Roman features

Figure 4 Phase plan, Late Bronze Age

Figure 5 Phase plan, Roman

Figure 6 Small finds plots, Late Bronze Age

the unexcavated part, spot located by TST or in 2m grid squares where there were dense finds. A magnetometer survey was undertaken across part of this area after topsoil stripping, which included that part subsequently excavated (Fig 4 – Appendix 3). This defined some of the archaeological features, subsequently confirmed by excavation, but not all (including at least one burnt flint pit); several magnetic anomalies indicative of possible archaeological features were disproved by excavation.

Towards the end of the excavation, several (apparently blank) areas of the site were further mechanically stripped, to check that features, especially further posthole buildings, had not been overlooked. The site was broadly excavated in defined chunks allowing areas to be handed back to the building contractor at regular intervals.

Visits by external specialists were made to offer advice on the retrieval of environmental and industrial evidence, these are noted in Table 1 below.

Name	Date of visit	Reason for visit
Richard McPhail	27/6/07 and 2/8/07	Soil micromorphology and scientific environmental sampling advice
Gill Cruise	2/8/07	Pollen sampling
Lynne Keys	29/8/07	Examination of slag pile
Ben Gearey and Tom Hills	8/8/07	Palaeoenvironmental sampling

Table 1. Visits by external specialists

1.8 Post-excavation review

The following post-excavation tasks have been completed for the stratigraphic, finds and environmental archives:

- Completion and checking of the primary (paper and digital) archive
- Microsoft Access database of the stratigraphic archive
- Microsoft Access database of the finds archive
- Microsoft Access database of the environmental archive
- Catalogue and archiving of digital colour images
- Catalogue and archiving of monochrome print images
- Section drawings scanned
- Contexts allocated to groups
- Survey data uploaded and converted to MapInfo format
- Plans digitised and integrated with survey data
- X-radiography of iron finds

- Processing, dating and assessment of finds
- Processing and assessment of environmental samples
- Evaluation of soil micromorphological samples
- Preliminary matrix compiled
- Provisional phasing and summary discussion
- Compilation of a report of the documentary evidence

The stratigraphic archive is quantified in Table 2, and the complete context data is in Appendix 5.

In the following Section 2, the preliminary results of the excavation are presented and the significance of the evidence is assessed. This is followed in Section 3 by the quantification and also assessment of the finds and environmental assemblages, category by category. The updated project design, which presents the detailed research objectives, for each archaeological period and each finds and environmental category, are specified in Section 4. This is followed by the preliminary publication synopsis (Section 5). The resources and programming for the full analysis, publication and archiving is itemised and costs attributed in Section 6 of this Post-Excavation Assessment Report.

Type	Quantity	Format
Context register sheets	62	A4 paper
Context recording sheets	2340	A4 paper
Environmental sample register sheets	24	A4 paper
Environmental bulk sample sheets	178	A4 paper
Environmental sample sheets, all except bulk	17	A4 paper
Small find register sheets, on site	36	A4 paper
Small find register sheets, post-ex	4	A4 paper
Section drawing register	18	A4 paper
Section drawing sheets (1:20, excavation)	15	A1 film
Plan register sheets	2	A4 paper
Plan drawing sheets (1:50, excavation)	35	A1 film
Plan drawing sheets (1:20, excavation)	11	A1 film
Interim, working TST plans	6	A3 paper
Photographic register notebooks	2	Narrow notebook
TST survey books	2	Chartwell books
Digital images	1558	2048 x 1536 pixel .jpg
B/W images (FSP-FSS, FSU-FSZ, FUA-K, FUN, FUR, (all 1-36), FYK 35, FYY 1-10)	850	Negatives and contact sheets
Documentary report	1	A4 paper and digital
Geophysics report	1	A4 paper and digital
Interim environmental reports	2	A4 paper and digital
Correspondence file	1	Paper
This PXA Report (SCCAS report no. 2009/297)	1	A4 wire-bound

Table 2. Quantification of the physical stratigraphic archive

Data Type	File type	Current location
All stratigraphic data	Microsoft Access database	T:\Arc\ALL_site\Eye\EYE 083
All finds data	Microsoft Access database	T:\Arc\ALL_site\Eye\EYE 083\Finds
Matrix	Excel spreadsheet	T:\Arc\ALL_site\Eye\EYE 083
Digital photographs	Jpeg	T:\Arc\ALL_site\Eye\EYE 083\Digital pictures
Original TST survey data	IDX and Raw files	T:\Arc\ALL_site\Eye\EYE 083\Survey\TST plans\originals
Processed TST survey data	Liscad FLD and MapInfo TAB files	T:\Arc\ALL_site\Eye\EYE 083\Survey\TST plans\Final_Plans
All individual assessment reports	Microsoft word	T:\Arc\ALL_site\Eye\EYE 083\Finds
Documentary report	Microsoft word	T:\Arc\ALL_site\Eye\EYE 083\documentary
Geophysics report	Adobe PDF	T:\Arc\ALL_site\Eye\EYE 083\geophysics
Site location plans, report graphics	Autocad DWG files and Adobe AI files	T:\Arc\ALL_site\Eye\EYE 083\Graphics
Assessment report	Adobe PDF	T:\Arc\ALL_site\Eye\EYE 083\Assessment

Table 3. Quantification of the digital archive

Feature type	Number
2x2M square	76
building	22
cobbles	1
cremation	5
ditch	18
feature	39
grave	1
gully	4
hearth	1
layer	28
linear feature	2
natural feature	1
pit	213
posthole	386
skeleton	1
Skull	2
slot	2
spread	10
surface	2
surface finds	48
wheel rut	2

Table 4 . Quantification of the of main context types

2. Results of the excavation fieldwork

2.1 Introduction

The excavations uncovered 707 features dating from the Earlier Neolithic to modern periods and where possible these have been allocated, provisionally, to one of eight phases based on a combination of finds dating, stratigraphic and spatial relationships and physical similarity for this assessment (see Table 5). The main periods of occupation defined on the site, occurred during the Later Bronze Age–Early Iron Age, (*c*.1000–600BC) and the early Anglo-Saxon (*c*.AD450–650) periods, but burials of both the Earlier Neolithic (cremation) and Early Bronze Age (cremation and inhumation) were also found. The provisional phasing will be subject to rigorous scrutiny and revision during the detailed analytical stage.

Phase	Period	Summary	Allocation criteria
1	Earlier Neolithic	A single cremation 0513, two pits and a gully	Pottery dating and stratigraphy
2	Late Neolithic-Early Bronze Age	Four cremations, inhumation, and pair of postholes	Pottery dating, spatial relationships and crouched inhumation.
3	Later Bronze Age-Earlier Iron Age	Two roundhouses, 40 pits/postholes, one ditch	Pottery dating, spatial relationships, stratigraphy
4	Iron Age	Two pits	Pottery dating
5	Roman	One pit	Pottery dating
6	Early Anglo-Saxon	Two posthole buildings, 18 Sunken Featured Buildings, 16 burnt flint filled pits, one slag pile, midden deposits, one possible fence line, 41 pits, 9 postholes additional to those associated with structures	Finds dating, feature types, stratigraphy, spatial relationships, fill similarities.
6+	Early Anglo-Saxon or later	Five ditches and gullies	Finds dating, stratigraphy

Table 5. Summary of phasing

Broad descriptions of each phase are presented in chronological order.

2.2 Site stratigraphy and site formation processes

2.2.1 Vertical stratigraphy

The archaeological deposits were plough-truncated over *c*.60% of the site, with topsoil from 0.3m up to 0.5m deep directly overlying natural silt/clay.

At the north, upper end of the site, archaeological deposits had been completely removed by the construction of the Mellis-Eye railway in the mid 19th century (Fig. 2).

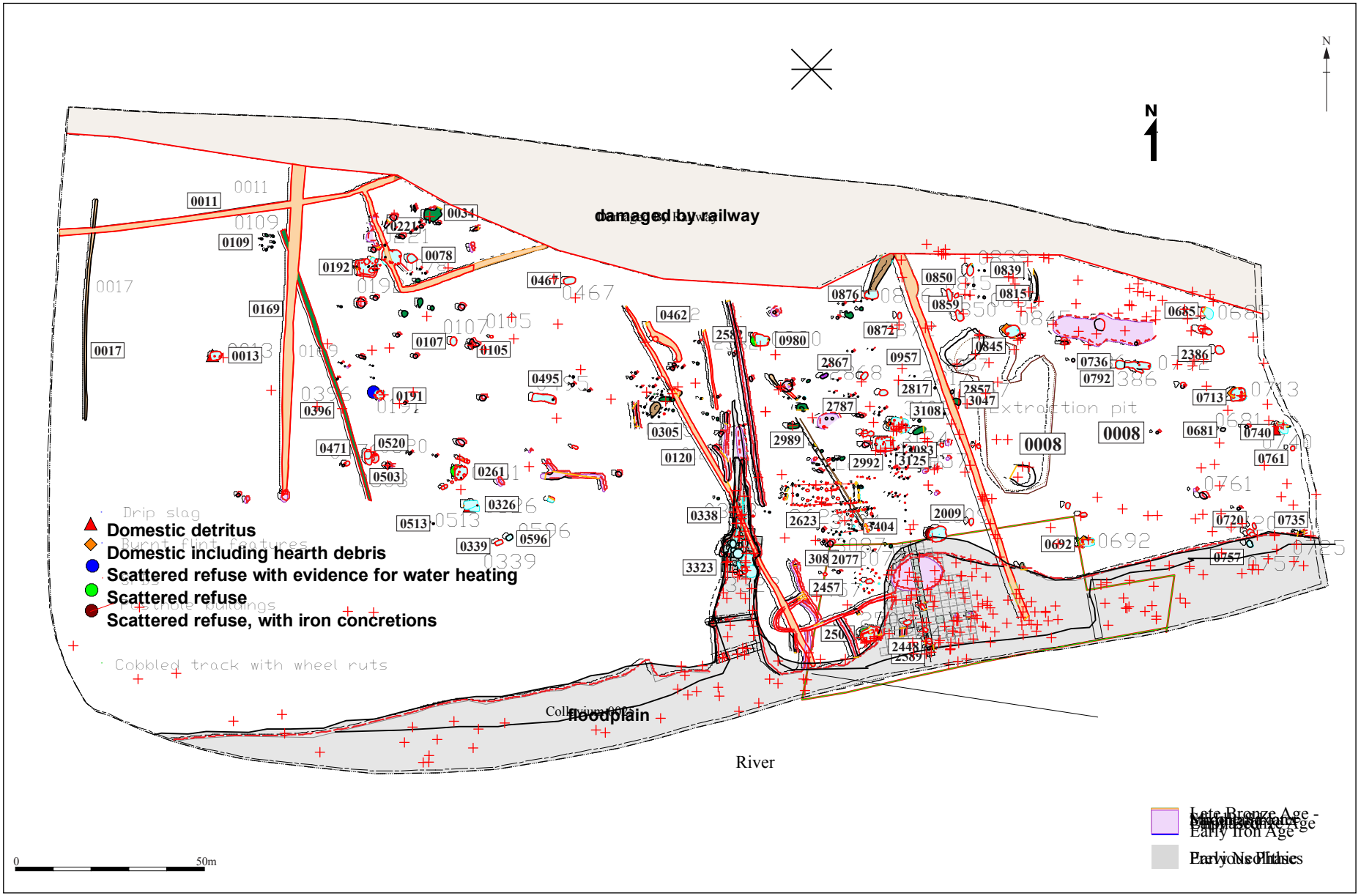


Figure 3 Figure 5 - Plot of small finds (all periods) - Bronze Age
Figure 4 Figure 6 - Phase plan, Iron Age and Roman

The north half of the site had also experienced the most severe plough truncation, with the shallowest topsoil towards the top of the slope.

Archaeological deposits were, however, preserved in the south half of the north to south hollow down the centre of the site, protected in the hollow from plough truncation. They represent the only area of well-preserved stratified deposits on the site, with rubbish deposits, surfaces and cut features, indicating how much of the site has been damaged by later agriculture.

At the south end of the site, however, natural was masked by deposits of silt and loam up to 1.5m deep and containing archaeological finds (Pl. 1). These were mostly visible as up to three distinct but homogeneous layers. These deposits were not fully excavated as they lay well below formation levels for the pitches, but one part was gridded and test pits were excavated to sample them and to provide a profile north to south across the deposit. The deposits are provisionally interpreted as colluviation, natural soil redeposition from the top to the bottom of the hill, that accumulated against a physical barrier on the edge of the flood plain; they were separated from the flood plain by an intermittent hedge and there was a sharp drop of *c*.0.7m-1m in ground level to the south. This suggests the hedge-line at the south end of the site might be longstanding.

All finds, deposits and interventions into this material were recorded under a group number 0025. The deposit could be seen to be present filling the top of an elongated north-south aligned hollow leading from 0025 up the slope to the north however within this hollow deposits were grouped under the number 2160 to distinguish them from the colluviation and to allow comparison of the environmental and artefactual contents of each to be made. Two north-south aligned 2m wide trenches were excavated through 0025 situated to the east and west of the hollow and finds from each were recorded by 2m square. Thirteen alternate 2m squares were initially excavated by hand along north-south and east-west axes into the central area, just to the east of the linear hollow. The intermediate squares were subsequently carefully excavated by machine and the upcast spoil sorted for finds in corresponding spits and layers to those used in the hand-digging in order to provide a complete soil profile through the material. The limited work on this deposit 0025 (excavated and surface finds combined) produced a range of finds as indicated in the table below:

	0025	Ave. sherd size	% of Total	2160	Ave. sherd size	% of Total	SFBs	Ave. sherd size	% of total	Total	Ave. sherd size
Pottery no	322		7.37	498		11.4	751		17.19	4368	
Pottery wt	4932	15.32	8.4	9243	18.56	15.74	12263	16.33	20.89	58708	13.44
Worked flint no	750		38	139		7.05	129		6.54	1973	
Worked flint wt	17388	23.18	37.3	2468	17.76	5.29	1785		3.82	46672	
Burnt flint no	529		33.7	59		3.76	18		1.15	1570	
Burnt flint wt	21492	40.63	34.5	3961	67.14	6.36	866		1.39	62270	
Animal bone wt	81047		17.1	210212		44.36	79121		16.7	473900	

Table 6. Finds from 0025, 2160 and the SFBs against the total finds assemblage.

This is a crude representation of the finds from 0025 and does not distinguish between Early Saxon and prehistoric pottery, although a scan of the data shows that only thirty nine sherds are prehistoric, none Roman, and three post-Roman. The pottery is slightly more fragmented from 0025 than 2160 and the Sunken Featured Buildings, but less so than the whole assemblage - half of which is prehistoric and would be expected to be more fragmentary than the Early Saxon.

It is interesting to note the high proportion of worked and burnt flint from this deposit. What does this signify? Does it shows that the colluvium was accumulating before and during the Anglo-Saxon period, picking up material from the prehistoric features and redepositing it, with the fragile pottery evidence being lost? Or does it indicate flint working activities against the river edge - do we know where the river edge might have been in the prehistoric period? Or does it indicate prehistoric features under the colluvium? Is the flint contemporary with the main period of prehistoric activity or is it earlier?

The make-up of the material in 0025 seems to reflect that of 2160, bearing in mind how much less of this than 2160 was excavated, but further examination of this is necessary to establish whether it is debris accumulating from deliberate dumps in 2160, sunken featured buildings and elsewhere as it moved down the hill or deliberately dumped deposits. This will require further consideration and detailed plotting of the material types and condition.

Features could not be identified clearly cutting 0025, although the presence of features could be identified as darker more finds rich areas within it. Further consideration will

be needed to decide whether this represents cutting features or the integration of darker fills into upper layers as a result of bioturbation.

2.2.2 Stratigraphic relationships between and within features

Few of the cut features related stratigraphically to each other, with the exception of the area within the north to south hollow. Some of the ditches cut across other features, and some of the pit clusters had intercutting pits. The majority of features were discrete and, at this stage, they are dependent primarily on finds information, spatial or physical relationships or physical similarity for phasing and dating.

2.2.3 Stratigraphic integrity

Modern activity had disturbed the site in a number of places. At the upper, north end the site had been destroyed by the railway. There were several large areas of post-medieval disturbance in the east part of the site, probably also relating to the construction of the railway (a rail chair was recovered from one). These have destroyed any archaeological remains that might have been present in these areas.

Across the north and central part of the site, features were plough truncated. There were no surviving surface deposits in this area, and it is quite likely that the upper parts of cut features have been significantly truncated. The slope of the site has led to soil erosion in the upper half and redeposition or colluviation over the lower half, over many centuries, moving archaeological finds with it. A proportion of the bulk finds (2.5-5%) were recovered as surface finds in the lower, southern half of the site, lying either in the top fill of features or within or on the surface of the colluvium. A large number of the small finds recovered through metal detecting came from this deposit (Fig. 5). Further analysis needs to be done to identify whether the location of these finds is indicative of foci of activity on the site; examination of their distribution may inform interpretation of varying functions carried out in different parts of the site.

Other than the issues raised above, there was no significant small-scale disturbance, either modern, or archaeological, to interfere with the confidence of finds provenance and dating of feature fills. Confidence in the stratigraphic integrity of the site is, therefore, generally high.

2.3 Phase 1, Earlier Neolithic: 4000BC to 3000 BC

Features are provisionally attributed to this phase on the basis of pottery dating (Fig. 6).

A single feature, cremation 0513 consisting of thirty-five sherds of Earlier Neolithic pottery and 40g of cremated human bone, has been confidently assigned to the Earlier Neolithic phase. This lay at the south-west limit of the archaeological activity on the site. Gully 2457 also contained only Earlier Neolithic pottery and is provisionally phased here, as is pit 0520 which was the earliest of a group of pits; one, 0503, contained both Earlier Neolithic and Anglo-Saxon pottery. Pit 0736 may also be of this date.

Further work is required to establish whether these can attributed to this period with certainty. Residual Earlier Neolithic pottery was recovered from later features, predominantly from the lower end of the slope nearer the watercourse; the four features identified all lie below 37m OD. It remains unclear whether the material is a result of soil movement down the slope or an indication of the focus of the Early Neolithic activity.

2.4 Phase 2, Late Neolithic-Early Bronze Age: 2800-2200 BC

This phase is comprised largely of funerary features (Fig. 6).

Four cremations, 0815, 0839, 0850 and 0859, were defined at the top of the slope on the north edge of the site (Pls. 2 and 3). These varied in shape from oval (e.g. 0859 which was 0.80m x 0.30m in size) to circular (0815 was 0.60m x 0.50m in area), and from 0.15m (0850) to 0.50m (0815) deep. All were filled with dense charcoal rich silt. 0815 contained a complete small Late Neolithic/Early Bronze Age vessel, and 0850 six sherds of undecorated earlier Bronze Age pottery. Both were probably accessory vessels. A pair of postholes, 2817 and 2857, both containing Grooved-Ware pottery, was defined *c*.25m down-slope (south) of the cremations.

A crouched inhumation burial, 0681 (Pl. 4), was found c.73m south-east of the cremations and is currently undated. The human remains were of an old man and displayed some evidence of violence or trauma. The burial has been provisionally attributed to this phase due to the style of burial, although there is a possibility this could be Anglo-Saxon (a crouched child burial at Brandon Road, Thetford, was shown to be early Anglo-Saxon by radiocarbon analysis; Atkins and Connor, 2010, 21).

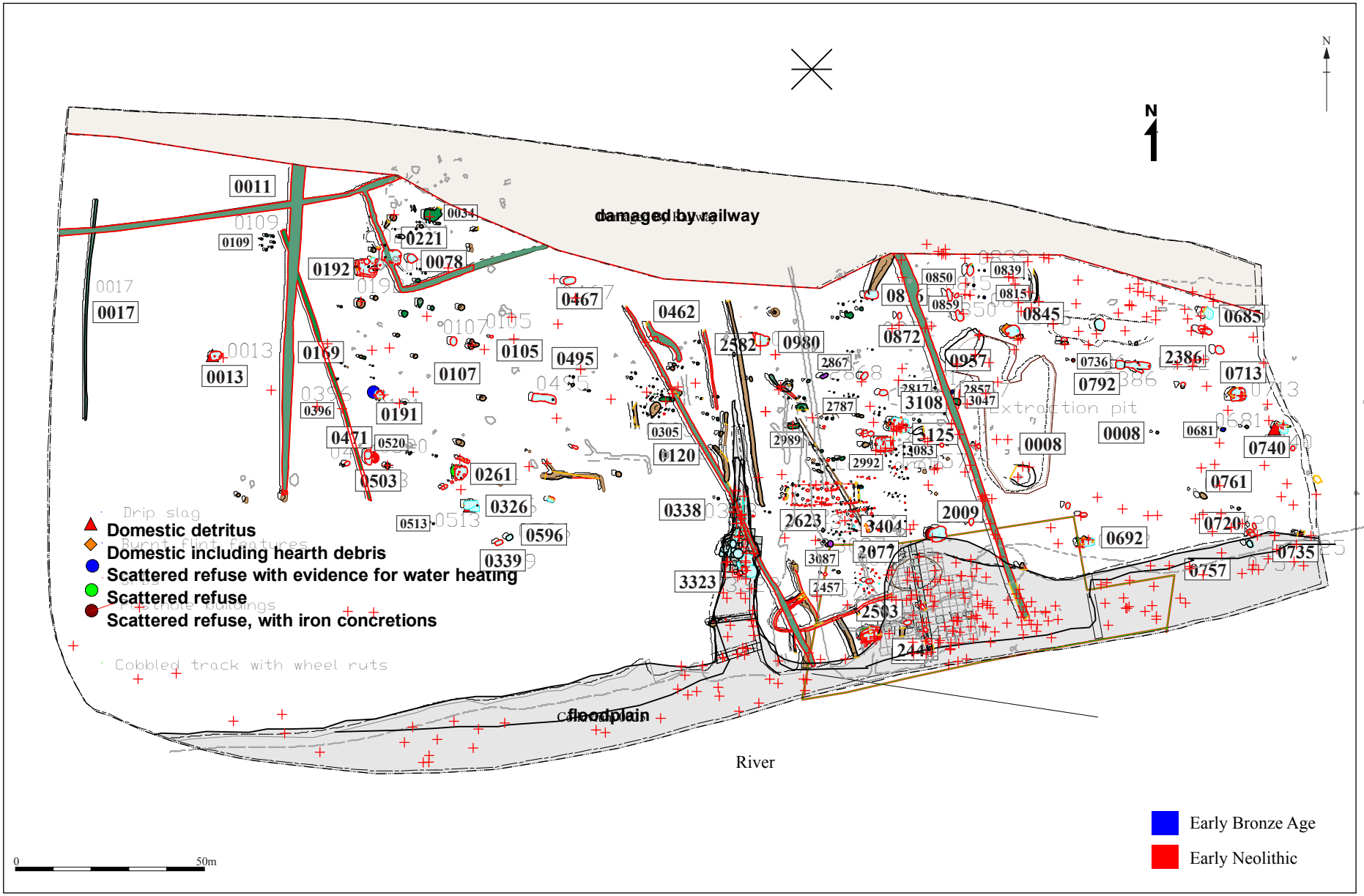


Figure 6 Phase 1 Early Bronze Age

Figure 5 Phase 1 Early Neolithic

2.4.1 Significance of the evidence

The Earlier Neolithic and Early Bronze Age occupation consists primarily of funerary features. This evidence has the potential to address questions about the nature of the Earlier Neolithic and Later Neolithic/Early Bronze Age activity, specifically questions relating to the extent of the Neolithic occupation, the absolute dating of the burials (both cremation and inhumation), the topographic siting of the burials and prehistoric rituals around death and burial. Further analysis of this evidence has some potential to contribute to the larger body of evidence from the across the county relating to population studies, the relevance of topographic location of burials, the use of varying burial rites and the use of ceramics in burials. If the other features identified as Earlier Neolithic can be confirmed as such this provides data that may indicate a relationship between burials and other features. However this potential is limited in both cases by the small size of the sample.

2.5 Phase 3, Later Bronze Age- Earlier Iron Age: 1150–600 BC

Significant domestic settlement activity was defined during the Later Bronze Age-Earlier Iron Age (Fig. 7), comprising two possible roundhouses (Fig. 8), two dispersed groups of pits, each lying south-east of a building, a ditch and occasional scattered features. Although the pottery can be identified as being either Later Bronze Age or Earlier Iron Age, these have been grouped together in a single phase at this stage.

Building 0109 which lies in the north-west corner of the site, is made up of seven large (but shallow) oval or circular postholes filled with grey to mid-dark brown silt, between 0.48-0.85m long x 0.23 -0.80m wide x 0.06-0.22m deep. These formed a roughly concentric circle measuring *c*.3.60m in diameter (Fig. 8). One (0022) contained ten sherds of Later Bronze Age pottery.

A second possible building 0305, in the central part of the site, is less clearcut. It was defined by six postholes forming a semi circle on its south side and another eight on the north side, *c*.5.80m in diameter. Five postholes contained Later Bronze Age-Earlier Iron Age pottery, although one (0411) had an early Anglo-Saxon spotdate; this pottery could be intrusive or the posthole could relate to the later settlement.

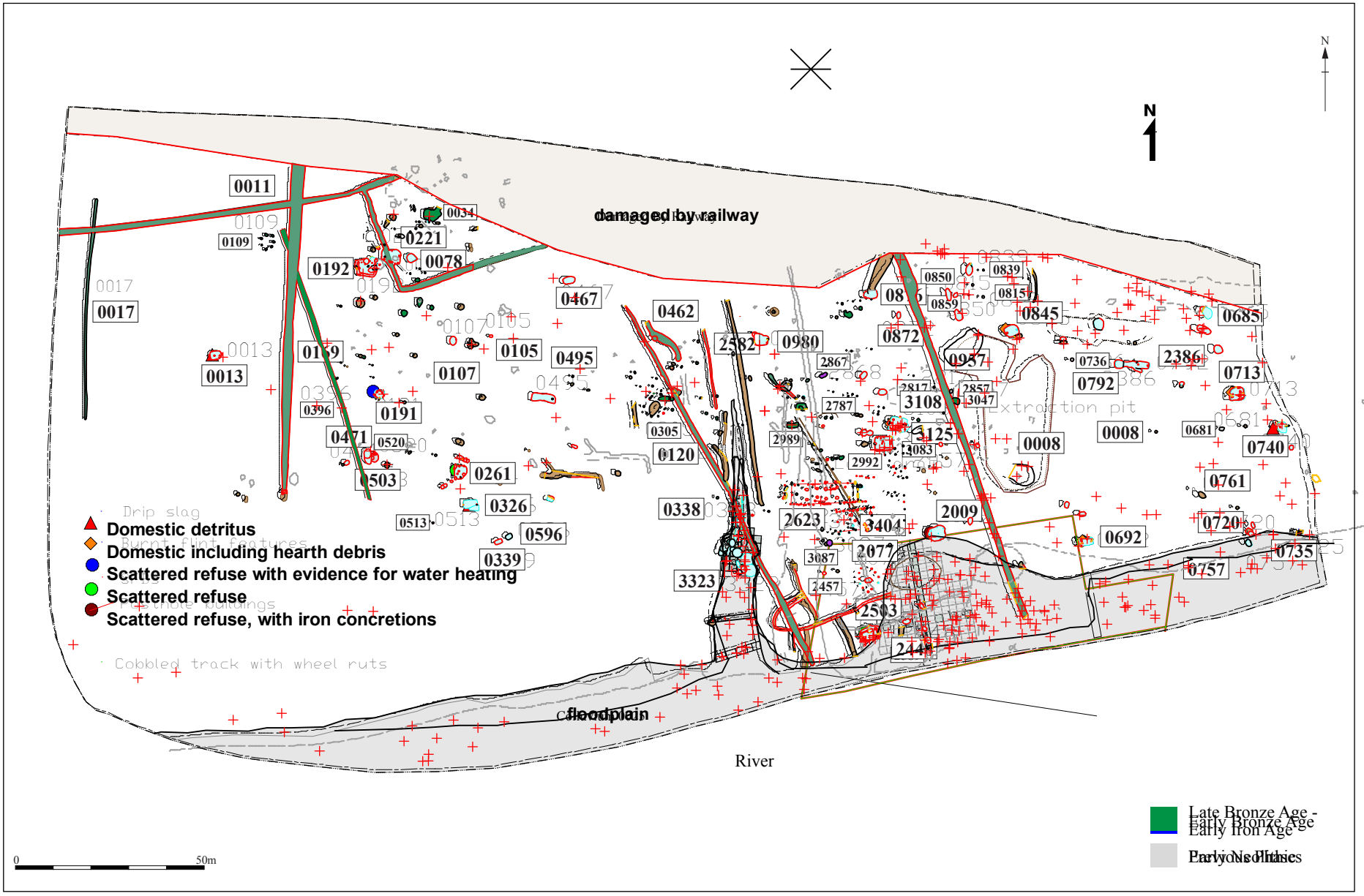


Figure 3 Phased plots: Early Bronze Age

Figure 10 Small finds plots: Late Bronze Age - Early Iron Age

Four pits and four postholes/small pits in a loose group *c*.35m south-west of Building 0109 which have been grouped together (Pit group 3406) are all attributed to this phase from the pottery within their fills. North of these, LBA-EIA pottery was also recovered from a slightly irregular pit, 0034, 4.00m across and 0.44m deep. This is provisionally assigned to the same phase, but further investigation is required to establish that the pottery is neither intrusive within a natural solution hole, nor residual within an early Anglo-Saxon feature.

The majority of features (thirty-two pits and postholes) phased to this period were scattered across the area to the east of building 0305 (Fig. 7). Some contained considerable amounts of pottery. Pit 2989 contained 3.60kg of later Bronze Age pottery, pit 3083 1.40kg of later Bronze Age pottery, and pit 2992 contained 1.20kg. Pit 3047 appeared to have a lining of broken later Bronze Age pot-sherds weighing 5.30kg. Pit 2787 contained 2.20kg of earlier Iron Age pottery.

2.5.1 Significance of the evidence

The later Bronze Age/Early Iron Age has evidence for both buildings and the frequent occurrence of pits. This evidence raises questions about the form of the buildings, the relationship between the buildings and the activity indicated by the pit groups, the form and function of the pits and the significance of the pottery assemblages (and apparent pottery lining in one pit), whether the later Bronze Age and Early Iron Age features represent continuous activity and whether this forms part of a wider dispersed pattern of occupation.

It is probable, with detailed analysis, that the form of the buildings would be better defined, and the nature of the domestic activity connected to them better understood. That one of the buildings shows as a semi-circle is interesting, and is a structural form that has been also defined on other sites, e.g. at Flixton (S Boulter pers. comm.). Further examination and comparison, will be required to explore the idea that this is a structural form in its own right, rather than part of a truncated roundhouse. The site also offers opportunities to examine the environmental data from a different topographic location than normal; most data from this period has so far come from sandy sites whereas this lies in a clay valley.

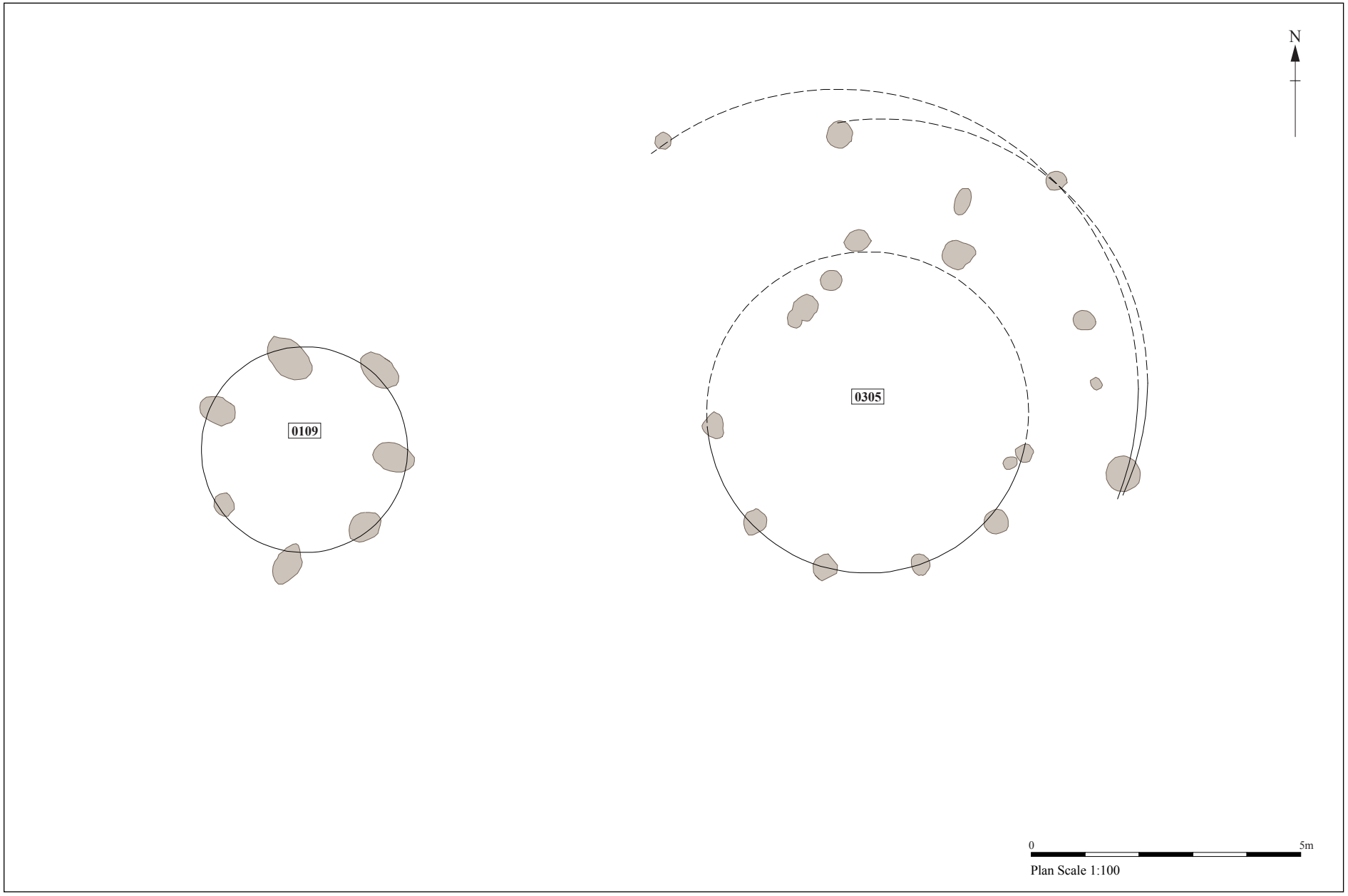


Figure 8. Plans of roundhouses

Pottery dated to both the later Bronze Age and Early Iron Age has been identified and this has the potential to contribute to ceramic studies for this period, and in particular to new research concerned with establishing cultural groupings from particular pottery forms and chronological typologies.

The development and use of flint tools in the Iron Age has been identified as a regional research priority not least because current ideas are changing and the presence of flint and pottery together, even where residual in contexts demonstrates that these are likely to be contemporary and offers the potential to further explore these ideas.

Examination of this site in relation to other similar sites across the county has good potential for helping to establish local and regional site types for this period. The nature of the later Bronze Age/Early Iron Age transition has been identified as a regional research priority (Medleycott 2011), as has the nature of settlement in this period, particularly the relationship between earlier funerary monuments and later settlement, and the changing settlement layout as it moves from unenclosed (as this one is) to enclosed and the implications of this on farming practices.

2.6 Phase 4, later Iron Age 800BC to AD43

A single pit (3087), 2.30m x 0.80m in area x 0.50m deep and filled with grey-brown silt, has been attributed to the later Iron Age period (Fig. 9). This contained ninety sherds of later Iron Age pottery from a minimum of four vessels. Two small sherds of early Anglo-Saxon pottery were also recovered from this pit, which are considered to be intrusive.

2.6.1 Significance of the evidence

Only limited evidence for Iron Age activity on the site has been identified, in the form of a single pit containing a relatively large assemblage of pottery that is unlikely to be residual.

2.7 Phase 5, Roman AD43 to 410

Three pits might be Roman (Fig. 9). 0733 and 3104 contained small quantities of Roman pottery (two and four sherds respectively) and 2115 contained Roman CBM. Pit 3104 also contained a small assemblage of burnt cereal processing or storage waste which is characteristic of the Iron Age and Roman periods. This suggests a low level of activity of this date on the site.

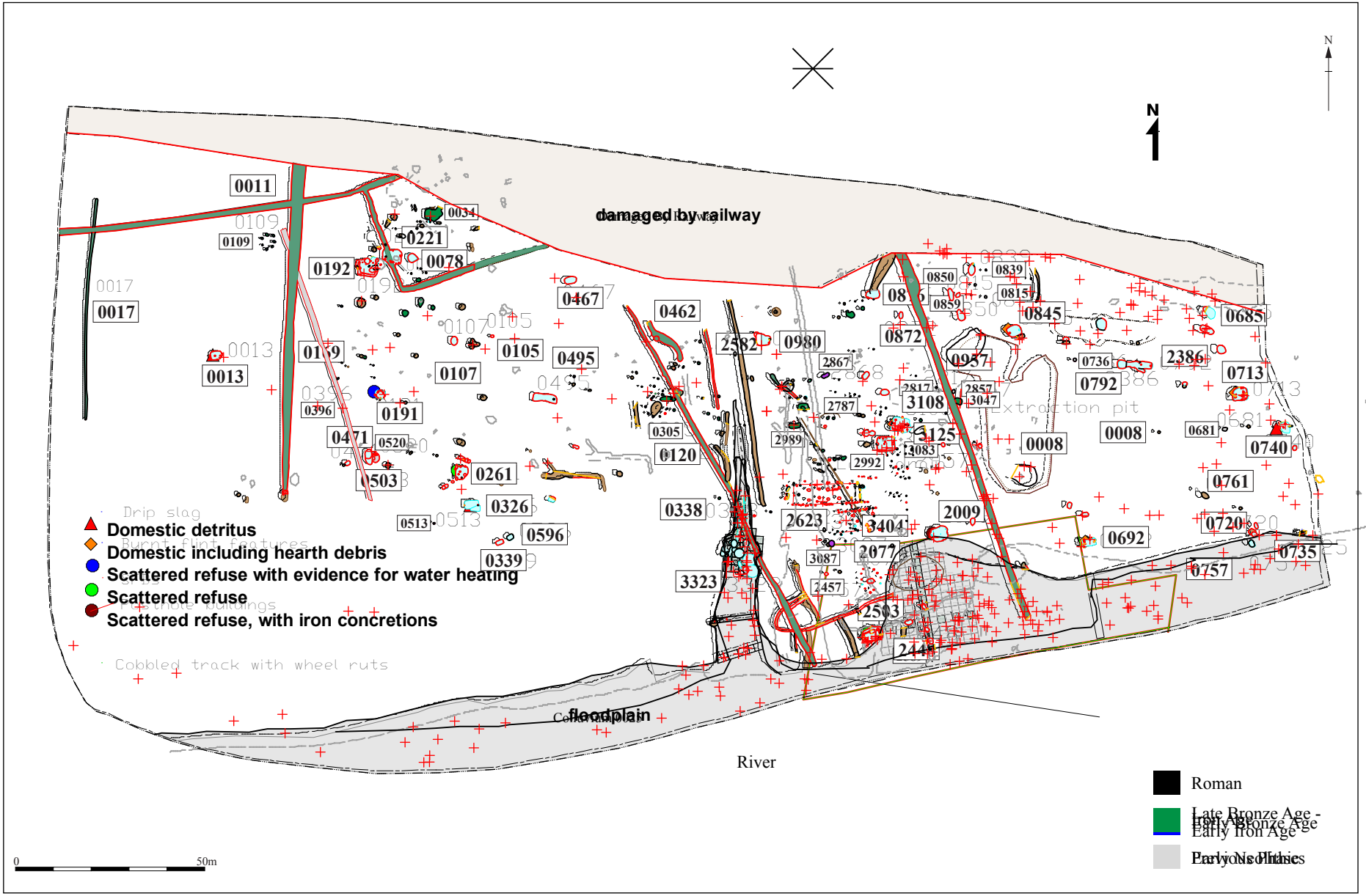


Figure 3 Phase plan, Late Bronze Age - Early Iron Age and Roman

Figure 10 Small finds plots, Early Bronze Age

2.7.1 Significance of the evidence

Only a single cut feature is attributed to the Roman phase but a small quantity of pottery, CBM and metal finds from this period were found across the site. All groups of finds were fragmented and dispersed suggesting a high level of residuality. However, the presence of an unusually high percentage of late Roman coins and the presence of some pierced coins suggests re-use in the Anglo-Saxon period, raising questions about what the Anglo-Saxons were using the material for and how they acquired it.

The excavation to the north in 2011 (EYE 094) gives a provenance for the Roman finds, but it is notable that the Roman occupation does not extend into the current site nor, apparently, does the Anglo-Saxon occupation extend northwards into that site. Analysis of these two sites together has the potential to address questions about the site choices made by the people of each period and to examine how close the chronological gap is between the two periods of occupation. It offers significant potential to contribute to discussions on the Roman Saxon transition and the beginnings of the early Anglo-Saxon occupation.

2.8 Phase 6, Early Anglo-Saxon AD450 to 650

The most significant period of archaeological activity identified at Hartismere School dates to the early Anglo-Saxon period (Fig. 10). This comprises settlement evidence, in the form of building remains extending across the whole site, a possible metalled trackway or hollow way, as well as pits and postholes relating to, probably varied, craft and industrial activities and also rubbish disposal. There was also a large material culture assemblage relating to this occupation.

The finds indicate the site probably started in the mid to late 5th century. While there was still a presence in the 7th century, occupation had ceased altogether by the beginning of the 8th century.

The features found comprise: two earthfast posthole buildings, eighteen Sunken Featured Buildings (SFBs), sixteen burnt flint pits, and other features possibly with an industrial function including a probable furnace pit containing a large *in situ* deposit of drip slag, a metalled trackway in a hollow way and thirty-three other pits.

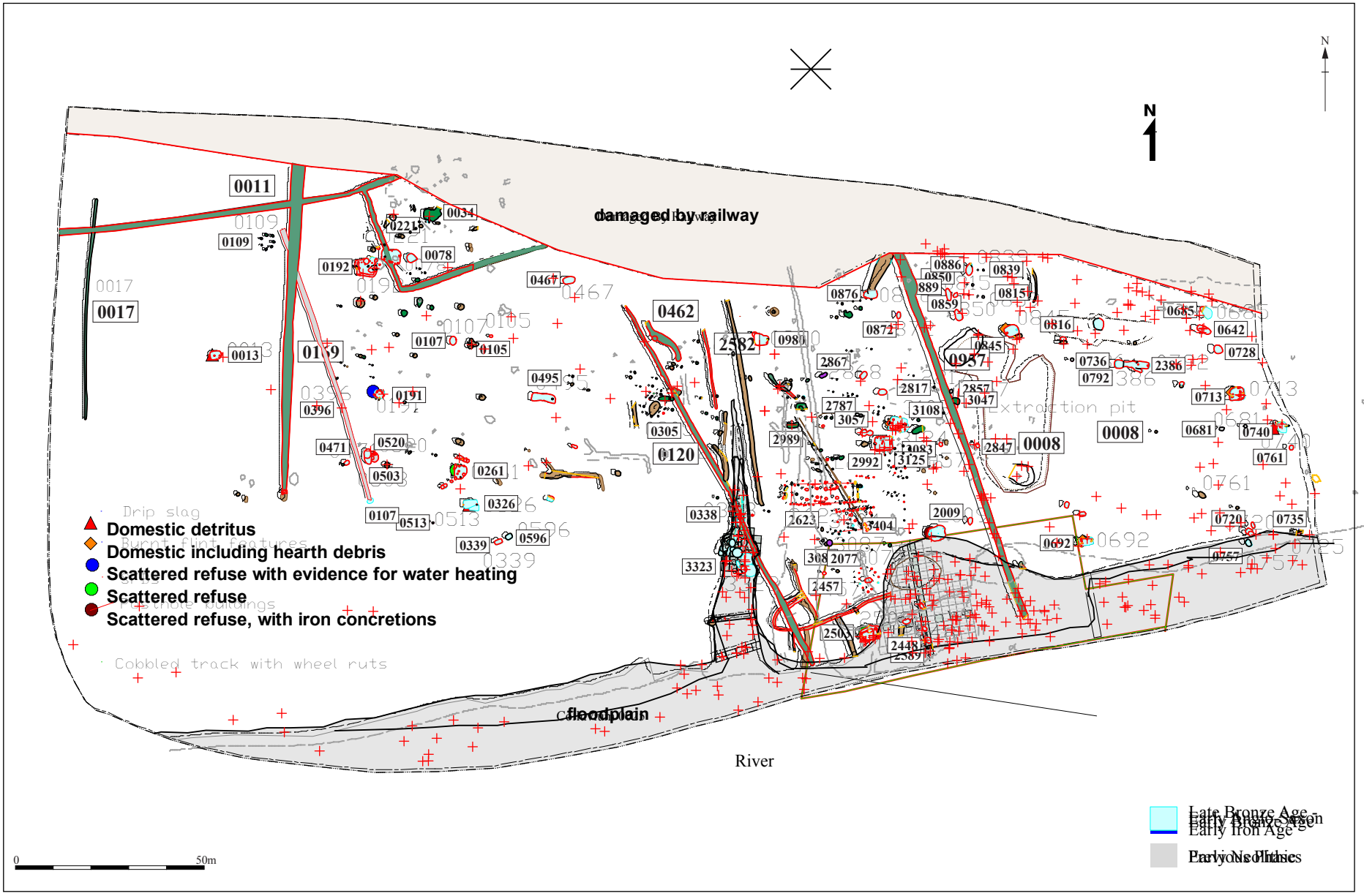


Figure 3 – Phase plan, Early Bronze Age

Figure 10 – Small finds plots, Early Bronze Age

Figure 11. Posthole buildings

2.8.1 Earthfast posthole buildings

The foundations of two earthfast posthole buildings, or halls, were defined at Eye, close to each other in the central part of the site (Figs. 10 and 11).

The larger of these buildings (2623) was aligned east to west, 19.40m long x 5.40m wide (Pl. 5). It had a central aisle *c*.2.30-2.80m wide x 8.00m long, formed by eight aisle posts (2630, 2648, 2624, 2665, 2606, 3093, 2620 and 2651) each *c*.2.30-3.00m apart east to west, in the central part of the building; the aisle posts do not extend along the entire length of the building, finishing *c*.5.50–6.00m from each end. The posts were irregularly positioned in relation to each other suggesting tie beams across the building rather than wall plates along the aisle. The eight aisle posts are substantial compared to those defining the walls, 0.50-0.80m in diameter x 0.45-0.70m deep. Five had clear postpipes and two had possible post-pipes.

The outer, long walls were made up of smaller, generally closely spaced (although with several large gaps between some), postholes - fourteen on the south side and twenty on the north – possibly forming a slight bow-shape. These were generally *c*.0.35m in diameter and between 0.06m and 0.35m deep. The end walls were less well defined, with some features being difficult to distinguish from the natural silt hollows encountered across the site.

In terms of dating, three of the aisle postholes (2630, 2624 and 2665) each contained a single small sherd of early Anglo-Saxon pottery. Assessment of the environmental content of the fills of some of the postholes shows low levels of burnt clay, stone and vitreous concretions (nine posthole fills were assessed, of which five were aisle postholes). It is possible that this, and other, material was filtering into the postholes during the life of the building, as the posts decayed.

Surface deposits had been entirely destroyed in both buildings hence the paucity of artefactual remains. However, the entire floor area of this building was intensively sampled for phosphates and it is anticipated that analysis of these will contribute towards the understanding, and interpretation of, the use of space within the building. In particular, the stalling of cattle could have resulted in heightened phosphate levels that might be detected in the subsoil (as the occupation surfaces had been destroyed).

The second building (3404) measured *c.*10.30m (9.10m min.) long x 5.10m wide and lay immediately south of, but at a slight angle to, the first. The ground plan of this building was less complete, comprising a line of up to fifteen postholes on the north side and only three or four along the south side. It might also have had a central aisle formed of four aisle posts (2668, 2670, 2686 and 3232), 2.60m apart north to south x 5.00m east to west. Neither the east nor west ends of this building were clearly defined. Two of the postholes (2686 and 2764) contained early Anglo-Saxon pottery.

Additional postholes within both buildings might indicate structural elements or internal features. A row of postholes extended from the south-east corner of building 2623 and these, in conjunction with other postholes in the immediate area, may represent fence lines and/or fenced enclosures.

In terms of building 2623, nowhere in England has this type of building footprint or plan been identified, until now. However, this type of building is found throughout continental northwest Europe from the 3rd century onwards, where it is the main type of dwelling of this period, in which cattle byre and living room lay under one massive roof, with the capacity to stall large numbers of livestock (primarily cattle).

The typical building of this period in England was a smaller, simpler type of building, in which the weight of the roof was borne by the walls rather than internal rows of roof supporting posts (i.e. aisle posts). No buildings of this type were discovered at Eye and although this could be due to conditions of preservation, it is notable that earlier posthole buildings and other individual postholes were present across the site, possibly suggesting that the absence of Anglo-Saxon posthole buildings is genuine.

2.8.2 Sunken featured buildings (SFBs)

Eighteen possible SFBs were found, spread across the entire site (Fig. 10). They appeared in a wide range of styles, a sample of which are illustrated in Fig. 12 and Pls. 5-19. Like the two posthole buildings, all the SFBs were aligned (roughly) east to west, parallel with the topography. There were no intercutting SFBs. There were several

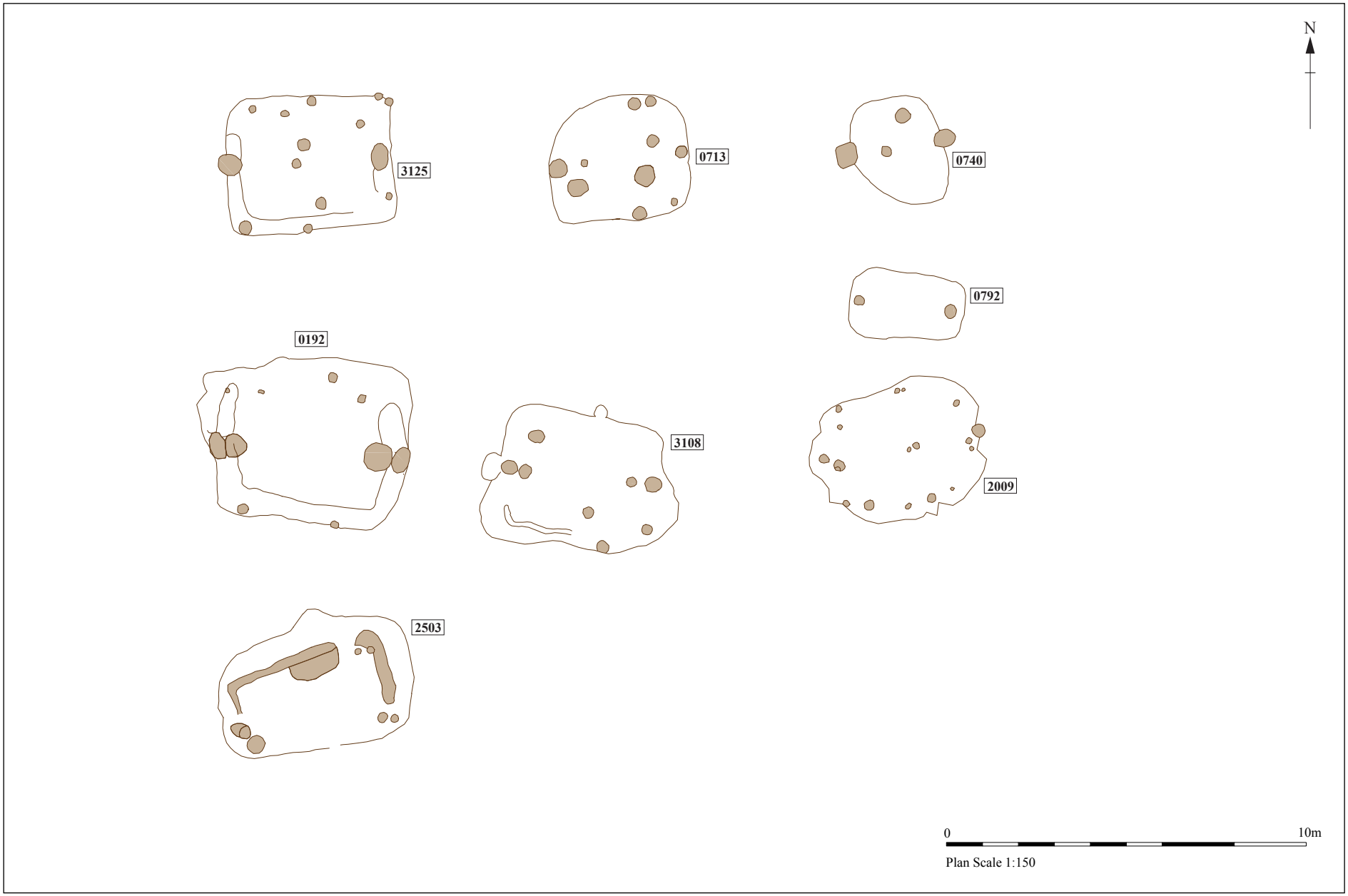


Figure 12. Selected plans of SFBs

instances where they are closely spaced (0192 and 0221, and 3108 and 3125) but, in general, they were widely scattered. Therefore, their phasing, and development, can be only established by detailed analysis of the material culture assemblages within each sunken feature, which will provide a *terminus post quem* for infilling, and also by absolute dating of any primary disposals that are identified (articulated animal bone groups or charred residues on potsherds from a single vessel).

SFB	Length (m)	Breadth (m)	Depth (m)	Post/ stake holes	Postholes	Other Struct-ural evidence	Fills	No. of cont-exts	Pottery all periods (sherd count)	Animal Bone (wt in g)
0013	3.2	2.1	0.2	4?	2-posthole derivative		Uniform	26	1793	3340
0191	2.8	2.2	0.14	14?	2-posthole derivative		Uniform	46	909	383
0192	5.7	4.7	NA	10?	2-posthole derivative	Slot	Uniform ?	48	145	2366
0221	4.9	3.9	0.22	9?	2-posthole derivative		Uniform	22	176	2621
0261	3.6	3.4	0.06	10?	6-post derivative		Uniform	51	127	1192
0326	4	2.7	0.24	2	2-post	Ledge	Uniform	17	694	773
0692	3.1	2	0.1	10?	2-post derivative ?		Uniform	29	102	654
0713	3.96	3.9	0.22	10?	2-post hole derivative ?		Uniform	25	245	2658
0740	3.2	2.6	0.12	14?	2-posthole derivative		Uniform	21	411	2399
0792	2.4	2.1	0.24	2	2-posthole		Uniform		25	583
0845	3.2	2.1	0.2	2	2-posthole		Uniform	7	827	2786
0876	3.8	2	0.22	2	1-posthole derivative ?		Uniform	9	332	2148
0980	3.8	2.4	0.24	3	2posthole derivative		Two fills	17	11	677
2009	4.6	3.9	0.32	17	2-posthole derivative ?	Post/ stakes?	Uniform	44	3768	23510
2386	3/3.9	1.9	0.3	0?	posthole-less?		Uniform		393	1497
2503	5.7	3.9	0.2	6	2-posthole derivative ?	Slot + hollow/ pit	Uniform	28	513	7619
3108	5.2	3.86	0.32	8	2-posthole derivative	Slot	Uniform	37	1531	22242
3125	4.5	4	0.2	14	2-posthole derivative ?	Slot	Uniform	40	261	1673

Table 7. Sunken Featured Buildings

There was some variation in shape, ranging from sub-rectangular, subcircular/ovate and irregular, and size of the SFBs at Hartismere. All were relatively small and shallow. In

terms of size (i.e. surface area), SFBs across the country show a strong central tendency for 4.00 x 3.00m. The majority at Eye were below this with the largest (0192) measuring 5.20 x 4.70m. Fourteen were under 0.30m in depth and the deepest was only 0.32m. In comparison, the depth of most SFBs across the country lies between 0.30-0.50m (Tipper 2004, 65). It seems likely that many have been truncated, given their shallowness, especially upslope. In the case of 0740, the postholes straddle the side of the upper edge of the sunken feature, which is possibly due to truncation of the upper part of the feature. In the case of 0013, the east ridge posthole was outside the sunken feature.

There was variation in the structural evidence which consisted of considerable disparity in the number of postholes, and many have ridge postholes and additional postholes around the sides of and/or across/within the base of the sunken features. There was also evidence for double/additional ridge postholes (e.g. 0192 and 3108), which indicates replacement and repair, to prolong the lifespan of these buildings. There was, however, no clear examples of six-post SFBs at Hartismere, which have been defined at other sites in this region (e.g. at West Stow and Bloodmoor Hill; West 1985, Lucy *et al.* 2009). Several sunken features possessed evidence of slots around (part of) the base of the sunken feature (SFBs 0192, 2503, 3108 and 3125), possibly evidence for lining. They all had roughly flat, irregular or concave bases.

In every case but one (0980), all the sunken features contained uniform fills or deposits (Table 7), in contrast to the distinctive and characteristic pattern of many other SFBs across the country, which often have two or three deposits, and in some cases more complex fill sequences (Tipper 2004, chap. 5). This is possibly the result of severe truncation, and subsequent destruction, of upper deposits, but this will need to be the subject of further analysis. There was little obvious evidence of prepared floor surfaces or eroded and worn floors, and no evidence of primary accumulation deposits on the base of any sunken features. It is preliminarily suggested that the SFBs should be reconstructed with suspended floors following the model put forward at West Stow (West 1985). That said, there was also no evidence on the base of any sunken features to indicate the accumulation of material below suspended floors. It is therefore suggested that most, if not all, the material within the sunken features was deposited after buildings went out of use. However, these issues will be the subject of detailed analysis.

The fills of the SFBs contained varied, in terms of type and size of, material culture assemblages (Fig. 13). Most noticeably, three sunken features (SFBs 0013, 2009 and 3108) contained a high concentration of finds of most types. The fills of SFBs 0013 and 2009 contained exceptionally large assemblages of early Anglo-Saxon pottery, with 183 sherds (*c*.1800g) and 158 sherds (*c*.3600g) respectively. Two of the more significant small finds, a silver pendant and part of a copper alloy axe, were found in the fill of the same SFB (3108) in the centre of the site.

Animal bone, in particular, was concentrated within sunken features in the central part of the site (Fig. 14); animal bone was also concentrated in other deposits in this part of the site, particularly within the hollow way (group 2160), colluvial deposits (group 0025) and two pit fills (3001 and 3057). Two sunken features (3108 and 2009) both contained over 20kg of bone, while 2503 contained 7.60kg. At this stage, it is not clear whether these distributions indicate variations in actual activities in different parts of the site and, therefore, rubbish disposal within features in this part of the site. They were also three of the closest SFBs to the hollow way, which also produced very large deposits of animal bone. A subject for further investigation will be to establish if these (and the activities that produced them) might be contemporary and relate to a particular activity in this part of the site.

The environmental evidence shows variations that might reflect specific activities either within or close to the buildings. The westernmost SFB on the site, 0013, contained a range of domestic debris whereas 2009, in the central part of the site, had only a low density of macrofossils and a high proportion of charcoal. There is a suggestion that the latter fill derived from scattered or windblown debris. The assemblages from 0692, 0713, 0845 and 3108 all contained low densities of possible hearth debris, whereas the remaining sunken features contained low density assemblages of domestic and non-domestic (Fig. 15). Variations in the degree of organic matter within the fills of four SFBs sampled for chemistry and magnetic susceptibility was also noted, with SFB 3108 having a high organic content. Evidence from the assessment of phytoliths identified the presence of sedges and wetland grasses that might indicate craft or construction activities. It might even provide evidence for the roof material of the buildings.

Whether or not the material within their sunken features is material from activities that took place in the immediate vicinity, or of material that has been re-deposited from surface rubbish heaps – and therefore possibly a mixture of material from activities across the settlement, and not necessarily contemporary activities – will be the subject of further analysis. A key to this will be the detailed study of Anglo-Saxon pottery fragmentation, to try and establish vessel links (i.e. pot sherds from the same vessel) within and between features.

Of the eighteen SFBs, ten were located close to each other. Three pairs were within 2m of each other, one *c*.6m apart and the other *c*.10m apart. However, there were no close groupings of three or more, which is often seen on settlements of this period and, of the remaining eight SFBs, most were between 25m and 35m apart. At West Stow, for example, there appeared to be a regular relationship between SFB's and posthole buildings or halls, with a group of SFBs around a hall. This pattern is not seen at Hartismere School. There were only two posthole buildings, close together, one of which was exceptionally large and atypical. In addition, the SFBs were, in general, more dispersed compared to those at, for example, both West Stow and Bloodmoor Hill. It is not clear at the moment whether this is due to a different pattern of activity, or due to length of occupation resulting in less (re-)building within the settlement area and this will need to be the subject of further investigation.

Accurate dating for the infilling of the sunken features and consequently disuse and abandonment, and by implication use, of SFBs across the site, will be critical for understanding site development where there are no intercutting SFBs. There are some typologically distinctive artefacts but, generally, the finds from this period are difficult to closely date. The detailed study of the early Anglo-Saxon pottery assemblages (for example, variations in proportions of different fabric types) within sunken features might present variations across the site that can be attributed to differences in date. Absolute dating of deposits, using carbonised residues on pottery sherds, articulated animal bone and/or carbonised macrofossils will also help, by association, to refine the dating of finds more closely. Clearly, features will be dated with more confidence where different types of evidence produce consistent dates.

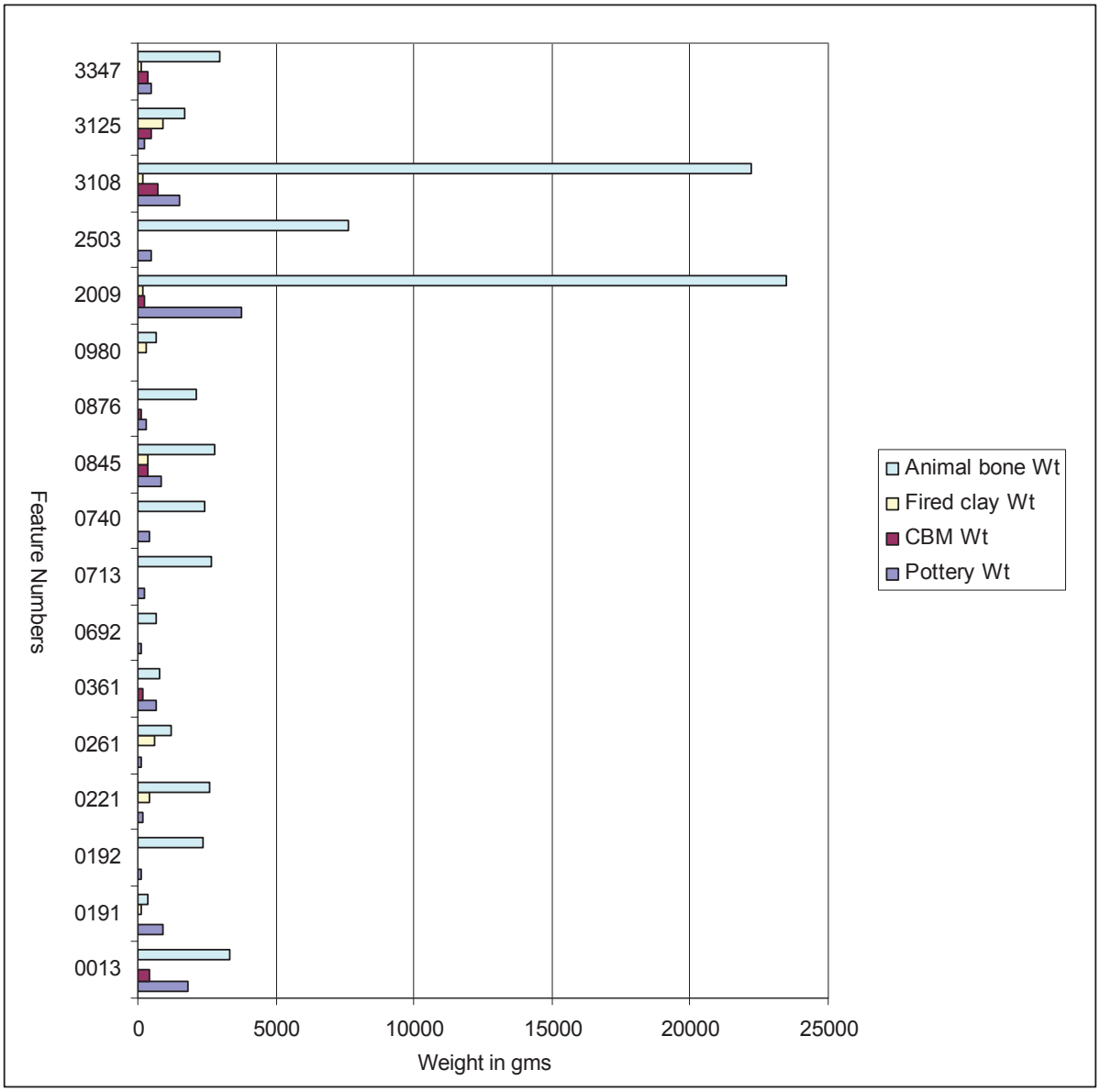


Figure 13. Chart showing bulk finds weights by SFB

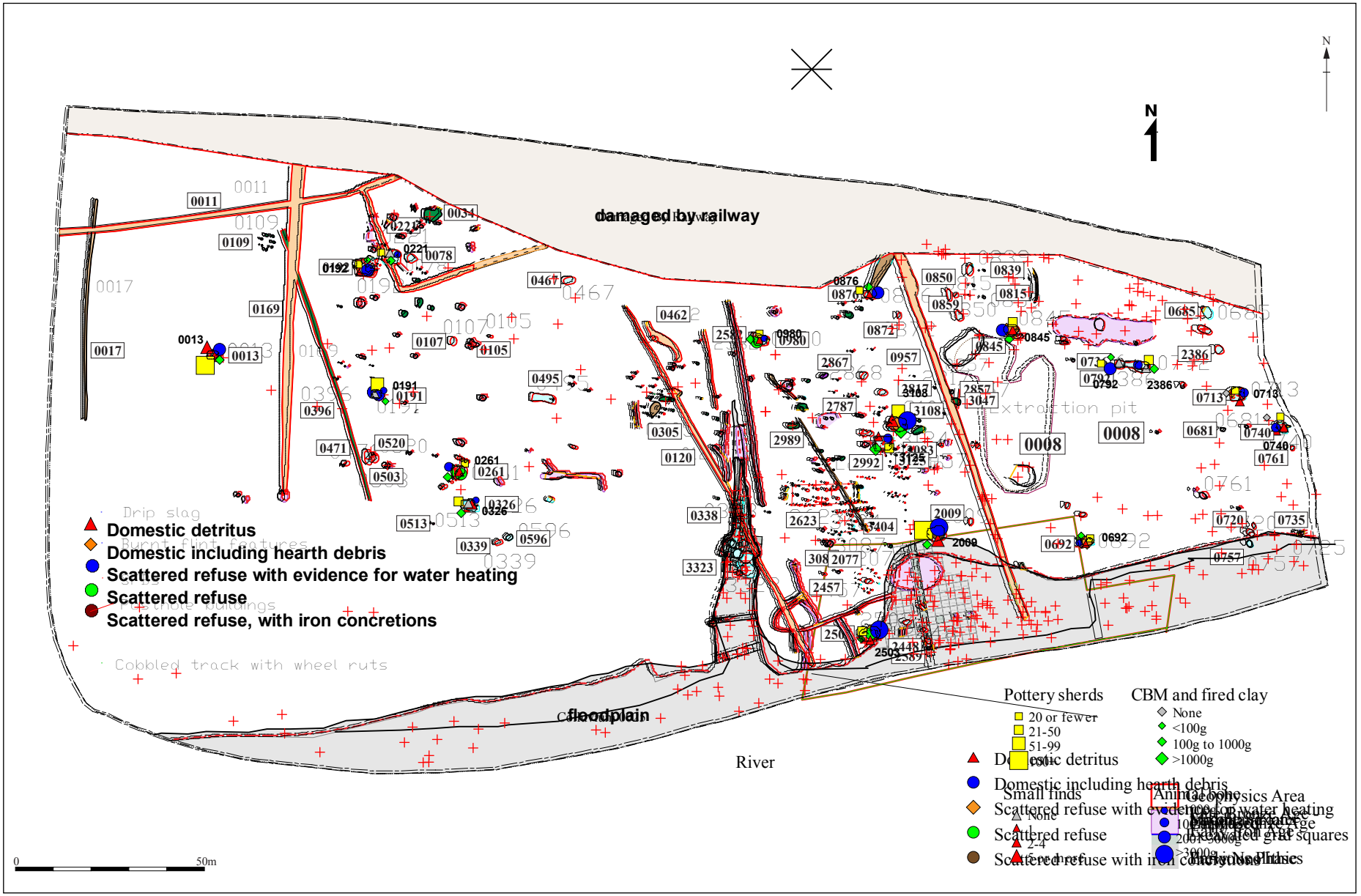


Figure 9: Small finds plots, Bronze Age features

Figure 15. Plot of Macrofossils from Sunken Featured Buildings

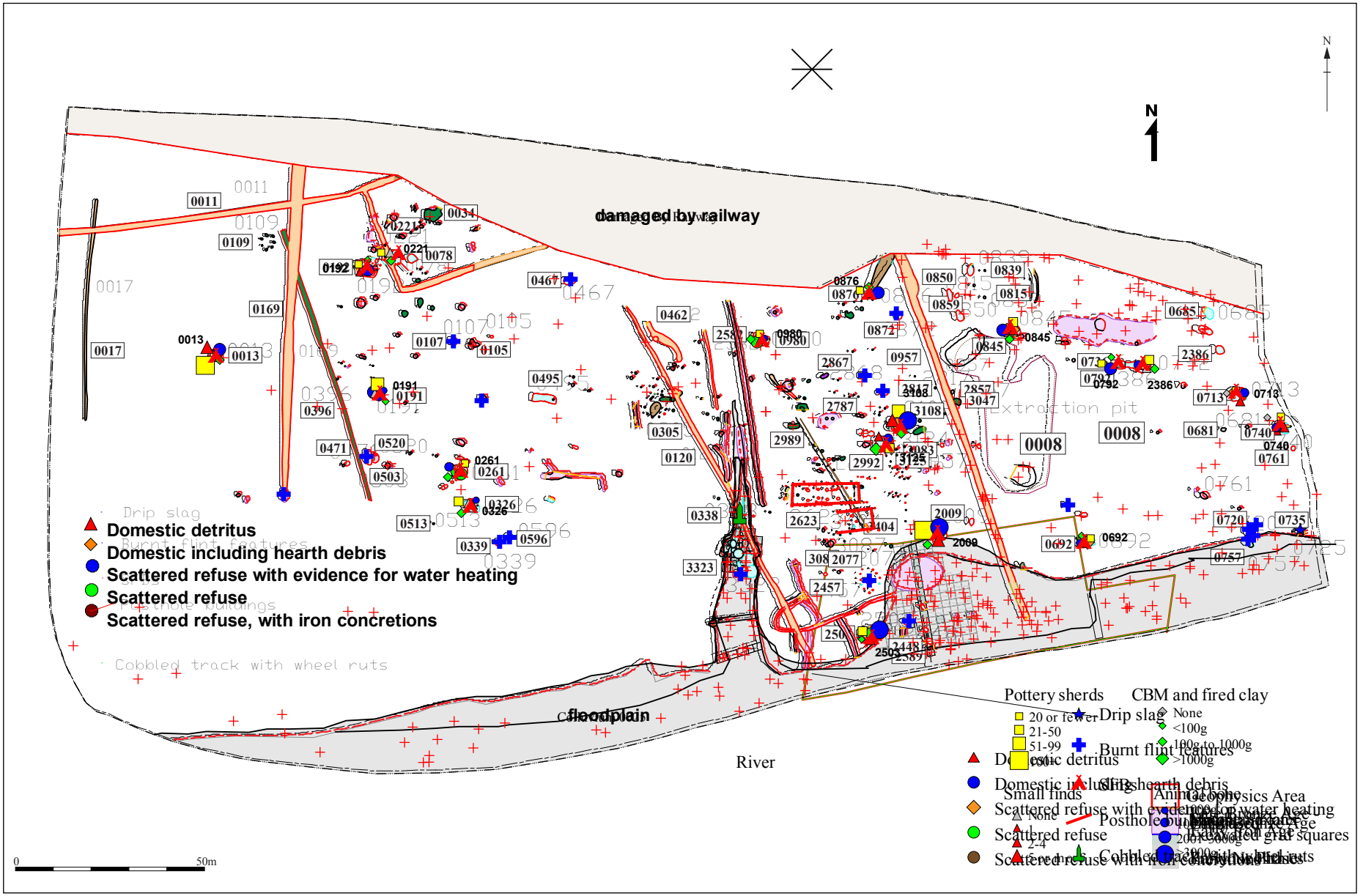


Figure 9: Small finds plots, Bronze Age

2.8.3 Burnt flint pits

Seventeen rectangular pits filled with burnt flints were found, scattered across the entire site but with several small clusters (Pls. 20-23 and Fig. 16). These were fairly uniform in size, with the majority 1.50-2.20m long x 0.80-1.50m wide (Table 8). Two were larger than the norm (0503, 4.2m x 1.70m and 0467, 3m x 1.8m, although 0503 appeared to have a second related cut, 0630 which is included in the dimensions above) and another very small (1.30m x 0.30m) and one (3323) had incomplete dimensions. All were between 0.12m and 0.54m deep. A single pit (2077) had an oval arrangement of nine (possibly eleven) postholes around it, suggestive of a superstructure. 0695, 0720, 0757 and 0842 were clustered together near slag pile 0735 in the south-east corner of the site.

Pit no.	width in m	length in m	depth in m
0107	0.7	1.8	0.2
0148	0.32	1.3	0.25
0339	1.2	2.03	0.2
0467	1.8	3	0.3
0503	1.7	4.2	0.54
0596	1.34	2.04	0.34
0695	0.8	1.7	0.37
0720	1.8	1.9	0.3
0757	1.4	1.9	0.12
0842	1.1	1.6	0.4
0872	1.08	1.83	0.23
0895	0.8	1.5	0.12
2077	1.2	1.9	0.32
2178	1.5	2.1	0.18
2181	0.8	2.2	0.27
2448	1.3	2	0.25
3323	0.9	>1	0.2

Table 8. List of burnt flint pits

All these pits had very similar fills with a thin charcoal layer across the base below fire-cracked flint. The flint was generally sealed below a brown silt layer, interpreted as the topsoil/ploughsoil slumped, or possibly redeposited, into the top of the features. Two of the pits (0695 and 0720) had substantial lumps of charcoal in the base which seemed to indicate that the flints may have been placed on a lattice of wood which was then set alight. It seems probable that there would only be a limited supply of oxygen for these fires, as once the lattice burnt through presumably the flints would slump down and the fire would be extinguished, which may suggest that the function that they serve requires either high heat for a short time or a low heat for a longer time (more likely), using the

latent heat within the flints once the fire was out. It is also worth noting that heated flints are extremely volatile and when they shatter the pieces can fly a considerable distance.

Currently, the pits are largely undated but two have been spot-dated from the finds recovered from the fills. They are strikingly similar to features found at Kilverstone, Norfolk, which were also undated but were thought to be related to the early Anglo-Saxon occupation (Garrow *et al* 2006, 184-6). Their function was also unclear at Kilverstone, and they were described as relating to an 'as yet unidentified industrial process'. The locations of these roughly mirror that of the SFB's, although none were found in the north-east corner of the site and a small cluster of four in the south-east corner. Most lay between 10m and 25m from a building, although there were several notable exceptions to this; one (0467) was located over 40m from the nearest building. However, it was also located close to the north edge of the site and it is possible that further buildings had either been destroyed by the construction of the railway or were located beyond the edge of the excavation area.

2.8.4 Other industrial features

A small subcircular shaped furnace pit 0735, *c*.0.70m in diameter x 0.40m deep, was defined in the south-east corner of the site. This contained a deposit of *in-situ* drip-slag weighing 6.79kg (Pl. 24). The slag demonstrates that iron smelting took place on the site. Presumably, it would have dripped from a superstructure into the pit, although no evidence of the furnace or superstructure was found. The dating of this, however, is still unclear because no datable finds were recovered from the fill. It is possible that the furnace pit is earlier and Iron Age in date. The establishment of an absolute date for this feature, and slag assemblage, and also the investigation and discussion of the furnace pit (reconstruction and comparative evidence), will be an important aim of the analysis.

Hammerscale and slag was also recovered, in small quantities, from the fills of other pits and features across the site.

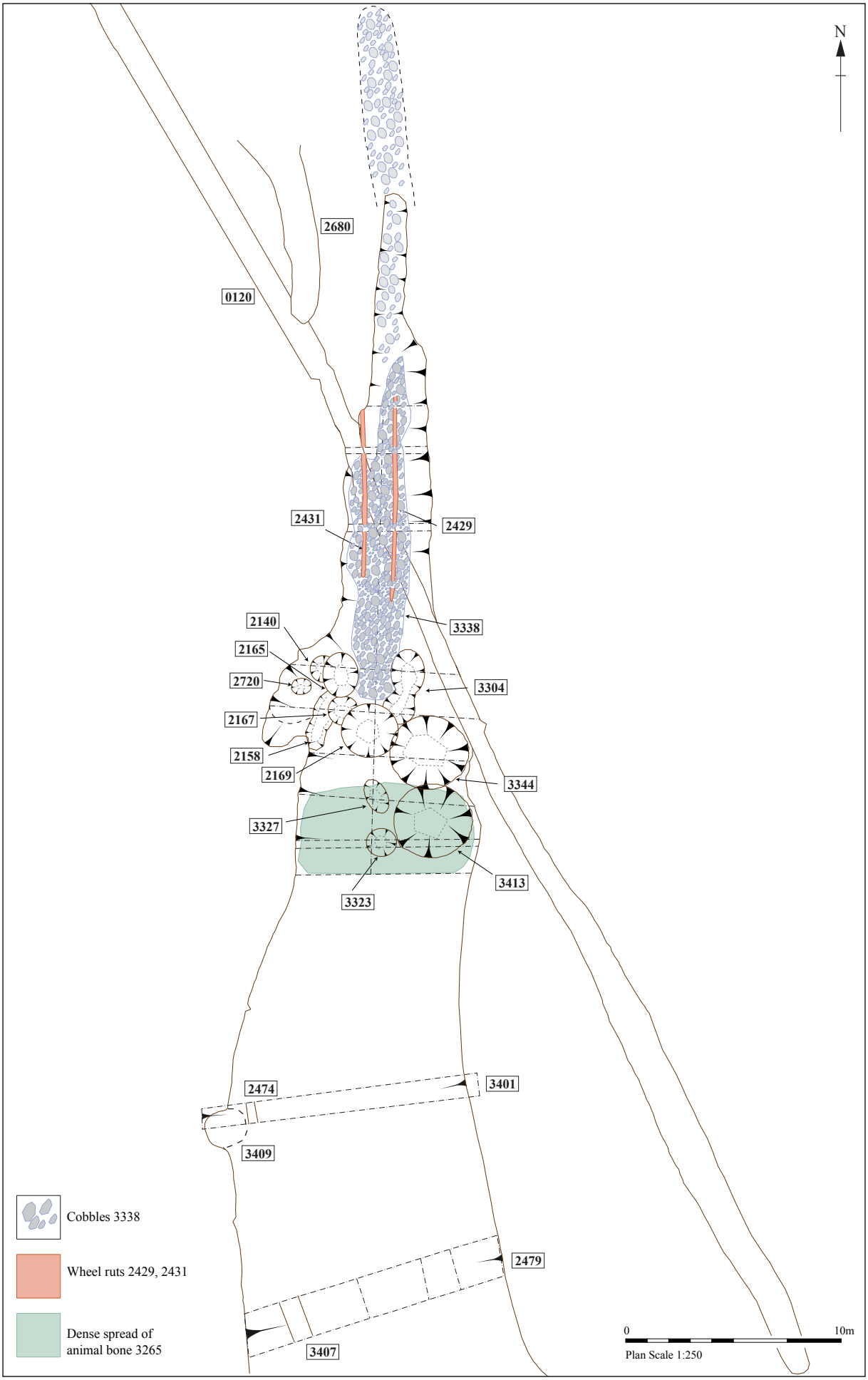


Figure 17. Plan of Holloway 2160

2.8.5 Utilisation of hollow way/trackway 2160

A north-south aligned hollow down the central-south part of the site, *c*.52m long x 12m wide max., is interpreted as a hollow way or sunken trackway, and has been also provisionally attributed to the early Anglo-Saxon period (Pl. 25). However, the earliest features (a group of eight pits) cutting the trackway, presumably after it went out of use, are not currently securely dated, although they are assumed, for now, to be Anglo-Saxon (Figs. 10 and 18). At its deepest recorded point, in section 2479, the natural geology is found 1.8m below the surface deposits filling the hollow, c.31.0mOD. The top of these deposits is recorded at 35.6mOD at the first point at which they can be determined in the north end of the hollow and at 32.8mOD at section 2479. Where the natural geology was seen against the south edge of the site (in section 0583 and 2m square 2226) it lay at 31.06mOD and 31.7m OD respectively.

On the base of the hollow, directly above the natural subsoil, a narrow metalled surface (3338) was defined. It is unclear whether this is the remains of a prepared surface, i.e. deliberately laid, or one that simply formed through compaction and use. The surface, interpreted as a track, was defined for *c*.22m along the base of the hollow; at the north, the hollow and the surface petered out, probably as a result of later truncation. The south end of surface, within the hollow, appeared to have been cut by a group of undercutting pits. A pair of shallow parallel linear features (2429 and 2431) in the base of the hollow and cutting the metalled surface, each *c*.20cm (7.5" to 8") wide x 7cm deep and *c*.1.40m (65.6") apart , are interpreted as wheel ruts. Neither contained any finds.

To the north of the sunken section, two parallel ditches (2486 and 2582), *c*.8m apart, appear to be spatially related with it and possibly define the line of this trackway beyond the sunken part. The east ditch (2486) contained no datable material while the west ditch (2582) contained five sherds (26g) of Later Bronze Age pottery. The excavations (EYE 094) to the north, on the plateau above this site, defined parallel ditches on the same NNW to SSE alignment, and further flinted surfaces, in line with trackway ditches. These are almost certainly a continuation of the same feature, over 100m to the north. The ditches are currently tentatively phased within that site sequence to the prehistoric period, as they are early in the stratigraphic sequence and contain prehistoric pottery (Craven in prep), however the flinted surfaces form part of a sequence of features

currently phased to the very late Roman period. The relationship of the hollow way, its ditches and metalled surface with the similar features from EYE 094 needs careful consideration. If these do represent the end point of a formal route, this raises questions about its function and from where it originates, .i.e. where is it going (the river?), who is using it, for what, when, and where did they come from.

Eight pits (in addition to burnt flint pit 3323) were found within a 9.5m length of the hollow (Pls. 26-29), the southern end of which was 26m from the point where the hollow way appeared to meet the edge of the valley bottom. These were all quite a regular circular or oval shape, and cut between 0.4m and 0.6m below the base of the hollow. The pits contained no datable material, and no finds indicative of a function. Their location at the end of the cobbled track might show that they lay at the junction where dry land met water, if the cobbles were naturally formed. It would seem that these were extraction pits, given the lack of material within their fills, but it is possible that they had some otherwise as yet unidentified craft/industrial function. Rather than being cut by the pits, it is just possible that the track could have related to, and been used as access for, the excavation (or use) of the pits. There was no further evidence of the continuation of the metalled surface in the two sections, 2479 and 3401 further down the slope and no conclusive evidence of the surface was seen between the pits, except between the northernmost ones.

Overlying the track and the pits were extensive deposits of dark brown silt and rubbish (group numbers 3308 and 3309), consisting of more than 235kg of animal bone, 11.5kg of pottery, mostly Anglo-Saxon but some earlier, daub, fired clay and twenty-two small finds (more finds were recovered during surface collection and these need integrating into the hollow way data). One deposit of daub seemed to be filling a shallow pit (2954) which was cut into deposit 3309 (Fig. 18) This became deeper, up to 0.75m in section 2479 towards the bottom of the hollow way. The finds concentration increased in the southern end of the area excavated in 2m squares (Fig. 4), where partially articulated animal remains were apparently dumped. Fewer finds were recovered from the corresponding deposits in sections 3401 and 2479, but that in 2479, at the southernmost end of the hollow way still contained over 5kg of animal bone, although only four sherds of pottery. The animal bone assemblage comprised a high proportion of horse remains, which had evidence of butchering, as well as cow, pig sheep and other animals. There was also evidence of worked antler waste. The animal bone

assessment suggests that there is little difference in the composition of this deposit to the colluvium in general, and the appearance of the deposits across the hollow way and colluvium suggests that they represent the same material, but this requires further work to confirm, and closer examination of all the long sections and 2m squares.

Soil micromorphology assessment through the cobbled surface upwards showed evidence of trample and compaction with the flints embedded in a muddy surface. Macrofossil assessment from the deposit above the surface shows that the material in the hollow way reflects the macrofossil assemblage of the site as a whole and is not indicative of a specific function different from that of the site.

2.8.6 Pits

Thirty-three pits (in addition to those mentioned above) could be provisionally assigned to the early Anglo-Saxon phase. These were largely circular or oval and ranged in size from 0.41m to 4.10m in length, 0.32m to 2.36m in width and 0.10m to 0.94m in depth. The fills varied from orange-brown to dark brown silts and all contained either at least a small amount of early Anglo-Saxon pottery or were stratigraphically or spatially likely to be Early Saxon. Whilst these require further detailed examination a few stood out either because of their form or finds recovered. Brief details of these pits can be found in Table 9 below.

Pit no.	description	w. in m	l. in m	d. in m	Pot No	Pot Wt	FC No	FC Wt	Animal bone Wt
0097	Circular pit with steep sides in NW corner of the site filled with dark silt, pottery, fired clay and animal bone rubbish. .	2.8	2.1	0	11	9	19	60	1362
0394	Irregular oval pit filled with dark brown/black silty sand.	0.8	1.7	0	9	82			200
0464	Circular pit with dark-brown orange silt fill and a lot of animal bone as well as 21 pieces of mortar/plaster	1.5	0	0	2	9	1	16	2080
0516	Oval pit filled with dark brown silty clay and bone and pot finds	1.8	1.4	0	5	60			564
0642	Oval pit filled with mid brown silty sand.	4.1	1.7	0	2	18	4	43	979
0728	Large circular pit with steep sides and flat base. Numerous fills but only central fill dated. Animal bone from central fills	0	0	0	4	45			2260
0856	Shallow oval pit with dark brown charcoal rich sandy silt fill. Occasional lumps of heath altered stone, but lies near BA cremations….	1.6	2.6	0	7	55			637
0889	Large oval pit filled with orange-brown silty sand.	1.3	3.2	0	15	246			324
2847	Roughly circular pit filled with fairly dense grey-brown sandy silt.	1.1	1.2	0	30	183			
3001	Oval pit with mid grey-brown fill and finds of burnt animal bone and pottery	1.1	0.4	0	2	3			968
3057	Large oval filled with mid grey silty sand with pottery, animal bone and fired clay rubbish and including an animal skull horse or cow?	0	1.7	0	8	38	6	48	2560

Table 9. Summary of selected Early Saxon phased pits

The distribution of these eleven more 'interesting' features is notable, with seven (0516, 0642, 0728, 0856, 0889, 2847 and 3057) located in the north-east corner of the site, where the burnt flint pits were absent which could indicate some zoning of activity. One of these, 0728 was steep-sided with numerous fills and possibly recut, and not typical of the pits found on the site, so could represent a specific function. 0728 contained over 2kg of animal bone. Pit 3057 contained Early Anglo-Saxon pottery, animal bone and the skull of a large mammal, which could represent a placed deposit.

It is probable that with further examination more of the undated pits will also be attributed to this period.

A large broad shallow hollow, 2578, c.13 x 9m containing Early Anglo-Saxon finds and up to 0.5m deep cut colluvial deposit 2586 in section 2518 through 0025. It was filled with a dark grey silt, similar to but distinguishable from the colluvium by a finer matrix. On site this was interpreted as a possible pond, but this seems unlikely as it doesn't cut into the natural geology.

2.8.7 Postholes

Nine postholes, in addition to those attributed to buildings have been provisionally assigned to the Anglo-Saxon phase. These range in size from 0.24m to 0.72m in diameter and 0.19m and 0.56m deep. As with the pits it is probable that on further examination some of the undated postholes can be phased with these.

2.9 Features allocated to early Anglo-Saxon period or later

2.9.1 Ditches and Gullies

The main ditches and gullies on the site have been phased as Anglo-Saxon or later (Fig. 18) as they certainly cut some of the early Anglo-Saxon features, but for most there is little or no dating evidence for a later Saxon or medieval date. These consist of east to west ditch 0011, north to south ditch 0017, NW to SE aligned ditches 0120, 0396 and 0957 and what appears to be the southwest corner of a small enclosure towards

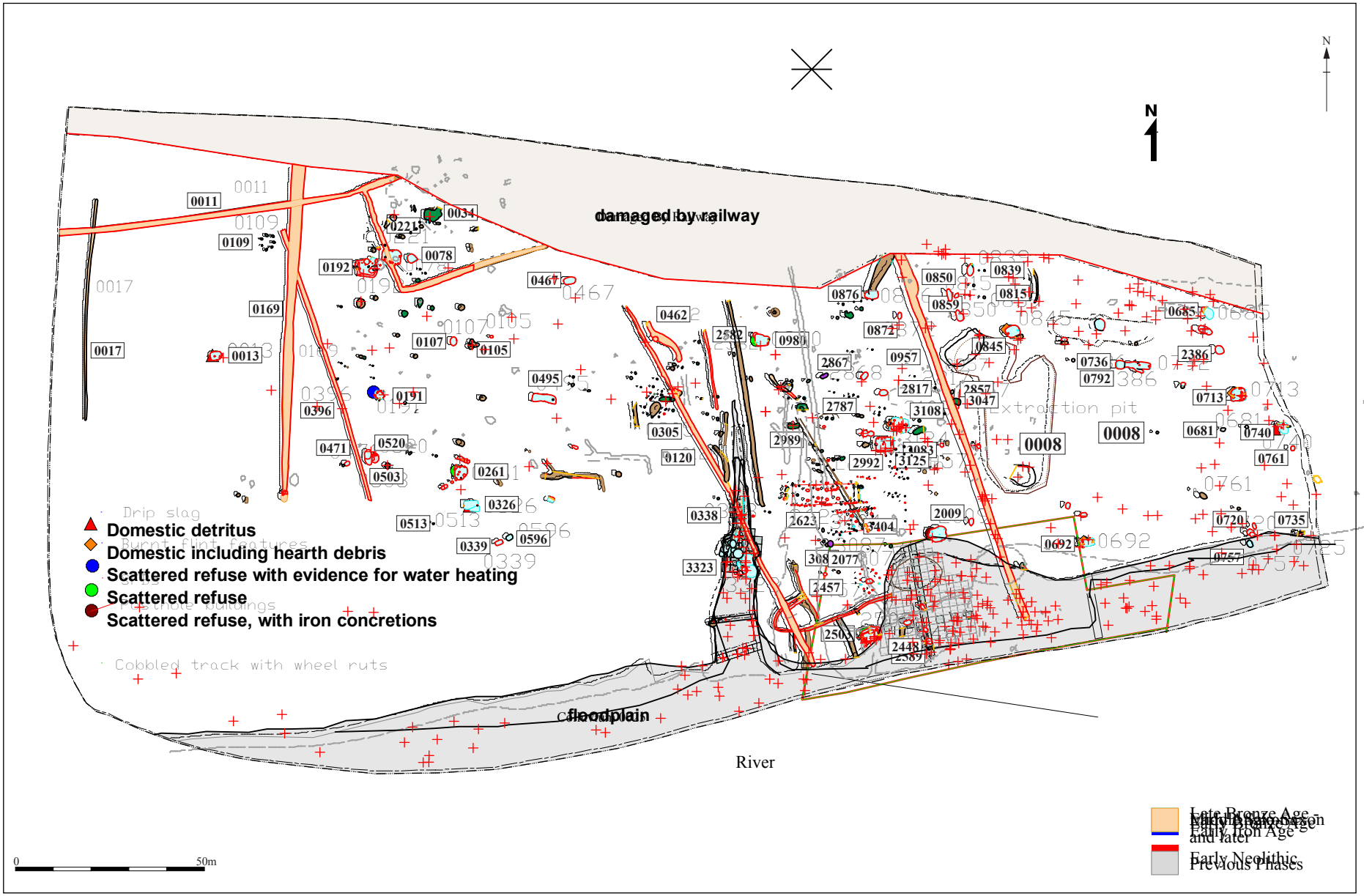


Figure 2 Phase plan, Late Bronze Age and Roman

Figure 10 Small finds plots, Early Bronze Age

the top (north end) of the hill. Six late medieval skillet sherds were recovered from the fill of ditch 0011, and a sherd of LMT from 0396. It is probable that these all represent medieval field systems, but further work is required to examine the possibility that they belong to the Anglo-Saxon occupation before this can be confirmed.

There are other fragments of gullies within this phase which need some limited further assessment of their context and form in relation to the Anglo-Saxon activity but which are unlikely to contribute much to the understanding of the activity of any period.

2.10 Significance of the evidence

The early Anglo-Saxon occupation is the most extensive and significant period of activity. Preliminary examination of this phase has highlighted important elements that have the potential to provide evidence of national importance.

Possibly the most important of these, in terms of period studies, is the presence of a building type previously unknown in England but common in north-west Europe from the 3rd century AD. Indeed, the absence of the longhouse on settlements of this period excavated in England (for example at West Stow and Mucking) led to 'a questioning of the ethnic affinities of the 'Anglo-Saxon' house in a series of papers published in the 1980s' (Hamerow 1997, 37).

The dating of the two posthole buildings, and especially the long house, however, needs to be established with confidence. Several of the aisle postholes contained sherds of early Anglo-Saxon pottery, which provides a *terminus post quem* for their infilling, and by extension for the date of the building. However, these small sherds could be either intrusive or residual. A key objective will be to determine if there are charred macrofossils in any of the postholes to allow radiocarbon dating, preferably of duplicate samples (after Johnson and Waddington 2008, 166-74). The dating of the posthole buildings, and the temporal relationship between the posthole buildings, and between these and the SFBs, is crucial to understanding the development of the settlement.

Assuming the dating is confirmed, the exceptional nature of this discovery raises questions not only about its detailed form and construction, e.g. evidence for entrance and partitions, reconstruction of superstructure, function (agricultural and/or domestic) and also about the social and economic structure and organisation that led to the

construction of this building. Clearly, its relationship with the other features on the site is also important, given that there were only two posthole buildings, adjacent to each other, and eighteen SFBs dispersed across the site.

Initial phosphate testing does not show particularly elevated readings suggestive of the housing of animals, but only two samples were assessed, whereas the entire floor plan was sampled. Detailed examination of the fills and spatial arrangements of the postholes has the potential to address these questions. Chemical analysis of further samples may show differing patterns from one part of the building to the other, and whilst there are no contemporary parallels in England, there are plenty of continental examples for comparison. The evidence from the macrofossil assessment shows a different composition of the fills to the SFBs which presumably reflects the background material in the area when the postholes were backfilled after the posts had been inserted. The presence of visible postpipes suggests that the posts were not pulled out and therefore comparison of this evidence with that from the SFBs may both help refine the site sequence and demonstrate how activity on the site developed. Study of this building has the potential to inform not just regional but national research priorities for the period. The environmental and soil micromorphological evidence from the posthole fills can be compared across the site and has the potential to contribute to the critical dating of the building.

An important part of the detailed study will be to investigate continental parallels for this type of building, both spatially and temporally, and to investigate the spatial arrangements of buildings, and also the social and economic structures, on sites where this type of building is present. Comparisons will be made between the continental evidence and the settlement at Hartismere School.

The eighteen SFBs display a range of construction types but most are based around the basic two post form with a variety of internal postholes, although some have internal slots. This evidence offers good potential for contributing to the discussion of Anglo-Saxon building forms and uses. The range of size and shape may suggest different uses of the buildings and allow the opportunity for further examination of the building techniques and possible uses of the buildings alongside consideration of their date. The largely homogeneous pit fills with little evidence of primary deposits and variable finds quantities have suffered from truncation but the evidence that does survive needs

to be examined in comparison with other early Anglo-Saxon settlements in East Anglia. Further examination of both the finds and the environmental evidence from these fills will allow discussion of the deposition processes and the activities taking place on the site during and after the life of the individual buildings. The evidence recovered poses questions about the form of the buildings and the presence/absence of suspended floors and internal divisions, the types of construction materials used, the extent of repair and reuse, the appearance of the structures and why they should be so variable in size, shape and form. Examination of the morphology of the pit fills, the distribution, quantity and nature of the finds and the environmental evidence has the potential to address questions both about the use of the buildings and the extent to which these are domestic buildings or workshops and storage buildings, evidence for both domestic and non-domestic use of which was found in the composition of the environmental samples, and their secondary functions after they go out of use. Comparison of the stratigraphical, artefactual and environmental evidence between different SFB's and the posthole buildings has the potential to establish the sequence in which the buildings were constructed and demolished, which buildings were contemporary and how the site developed and whether activity moved around the site over time.

Other features on the site, particularly the burnt flint pits, slag pile and the hollow way have the potential to provide information about the economy of the site, both what was being produced and what consumed and from where material, supplies and food was being sourced. The function of the burnt flint pits is not clear but further examination of the macrofossil evidence from these and some other features will contribute to this. The evidence for water heating has the potential to contribute to discussions about ordinary every-day activities, such as how is water heated for consumption, how is it heated when needed in large quantities and are these different? The slag pile in conjunction with evidence of metal working waste, a brooch mould, a higher than expected number of brooches from the site, and the environmental evidence of iron concretions on macrofossils suggests metal working on the site, and possibly the exploitation of natural resources of iron. The presence of a balance and Roman coins possibly used as weights suggests that the products of the metalworking may have been traded from the site. The vast quantities of animal bone, the composition of the assemblage with high numbers of horse bones from within the hollow way and evidence for butchering as well as the presence of semi-articulated remains, and that these cattle were young, raises questions about the rearing, butchering and use of the animals represented, in

particular the horses. It also poses questions about the nature of the economy of the site and possibly the presence of disease in livestock and its impact on the community. In contrast to this evidence of production on the site, the environmental evidence also suggests that crop growing and processing was not taking place on the site during the early Anglo-Saxon period. This evidence has the potential to contribute to the knowledge about the Anglo-Saxon economy, the relationship between consumers and producers and the development of industrial technology and farming techniques.

The absence of the common arrangement of small groups of SFB's around a larger hall constructed of earthfast posts may suggest an alternative settlement layout to that seen on comparable sites. This in conjunction with the relatively dispersed nature of the buildings, and presence of industrial activity on the site offers the opportunity to examine quite a different site type to those recently excavated in Suffolk and will add depth to the current understanding of Anglo-Saxon occupation. Particular questions raised relate to the date range for the early Anglo-Saxon activity, how many buildings were standing at any one time, whether there is any evidence of settlement shift across the site or evidence for the zoning of activity on the site. It is noticeable that there was a greater concentration of small finds in the eastern rather than western half of the site, and an examination of these by finds type may well make a significant contribution to the identification of the location of specific activities. Further examination of the evidence from this site in comparison with the published evidence from elsewhere will be able to address questions such as whether the absence of hall/SFB groups is compensated for by the presence of the long-house, the specific ways in which this settlement looks different from West Stow, Bloodmoor Hill, Mucking, etc., whether this reflects chronological or functional differences and whether this different settlement pattern changes interpretations applied to other sites. The possibility that this site represents an early settlement (established by absolute dating), possibly populated by first generation migrants (established by dating and indicated by the distinctive aisled long house), will also need to be investigated. Questions about the relationship of this site to the early Anglo-Saxon cemetery, identified from metal detecting finds, to the west (YAX 016), which is also exhibiting an early date (5th-6th century), also have the potential to be addressed by the analysis.

Dating is critical to the further understanding of the use of the site. The current information suggests that the site was in use for 200 years, and yet the activity does not

appear to be very dense compared to other sites that were occupied for a similar period. Why? Is it mainly an area of production/manufacture to service more intense settlement nearby?

How was early Anglo-Saxon settlement affected, or constrained by, the Roman settlement? Although the exact location of the Roman high status site has not been investigated, or pinpointed, the evidence from the current site, and EYE 094 to the north – which produced evidence for Roman activity but no settlement *per se* and certainly no later early Anglo-Saxon occupation – suggests the Roman settlement is likely to lie to the immediate vicinity, to the north, west or east to judge by the absence of Roman features on the current site. The evidence, therefore, suggests discontinuity and disruption yet, at the same time, general stability in settlement location because there is circumstantial evidence to suggest Roman settlement was close by.

Research questions will include:

- When was the settlement founded at Hartismere School?
- Who founded the early Anglo-Saxon settlement at Hartismere School, and why?
- Was it a place of authority and/or was it established by a local elite, leader or central person? Is there evidence of internal ranking within the settlement?
- What is the character of the Anglo-Saxon settlement here, is it primarily domestic occupation or semi-industrial and peripheral to the main settlement?
- Is there evidence to suggest the settlement was founded by incomers, or existing local elite emphasising a new identity?
- How do they relate to the Roman land owners that occupied the (putative) nearby settlement?
- What happened to the putative estate centre in the Dove Valley?
- Is there any archaeological evidence from the Anglo-Saxon settlement to indicate they had control of people, land and resources? Is there any evidence of external contacts - regional, national or foreign contacts and trade?

By the cessation of occupation at Hartismere School, at some point in the 7th century – which needs to be established by absolute dating, the East Anglian *provinicia* or kingdom had been established, and power had been consolidated. It has been argued that the Wuffing supremecy in the later 6th century was the result of a process of competitive exclusion that occurred between earlier autonomous groupings or regional

elites during the preceding couple of centuries rather than a long standing entity that had been established in the 5th century (Scull 1992, 7). Research priorities will address the following questions:

- Is there any evidence to show change over the 200 years of occupation – if so what and how?
- Is there any evidence to indicate the wider changes in the specific evidence at Hartismere School?
- When and why did settlement cease at Hartismere School?

As well as contributing to the knowledge of Anglo-Saxon life within the East Anglian region and beyond it will also contribute to local studies concerning the early history of Eye, providing both evidence to help understand why Eye was important in the 8th-9th centuries and also more generally about the movement of settlements from the end of the Roman period until they seem to become fixed in the later Saxon period. It is possible that early Anglo-Saxon occupation will yet be identified within the medieval core of Eye, given the topographic location, which is likely to have been favourable for early occupation of all periods.

The evidence for Anglo-Saxon activity is of regional and national importance. The aisled long-house, the evidence that this activity may have its origins from the mid 5th century indicating an early settlement, and the ways in which the layout of this settlement might differ from other regional sites, is of national significance and contributes to the national debate around the character of the Roman-Saxon transition and the nature of the earliest Anglo-Saxon settlements, as well as enhancing our understanding of the mechanisms of settlement, manufacture and trade in the early Anglo-Saxon period.

2.11 Undated features

Seventy-six pits, ninety-two postholes and ten ditches/gullies are currently unphased, because they have no finds dating evidence and no clear spatial relationship with dated features (Fig. 19). It is expected with further examination, that at least some will be attributed to a phase, particularly those to the east and north-east of posthole building 2623, and undated posthole group 0075 which was cut by pit 0034, which might represent a prehistoric structure, attributable to either Phase 3 or 6. Ditch 0169 is illustrated in this phase as it is pre-Anglo-Saxon but otherwise undated.

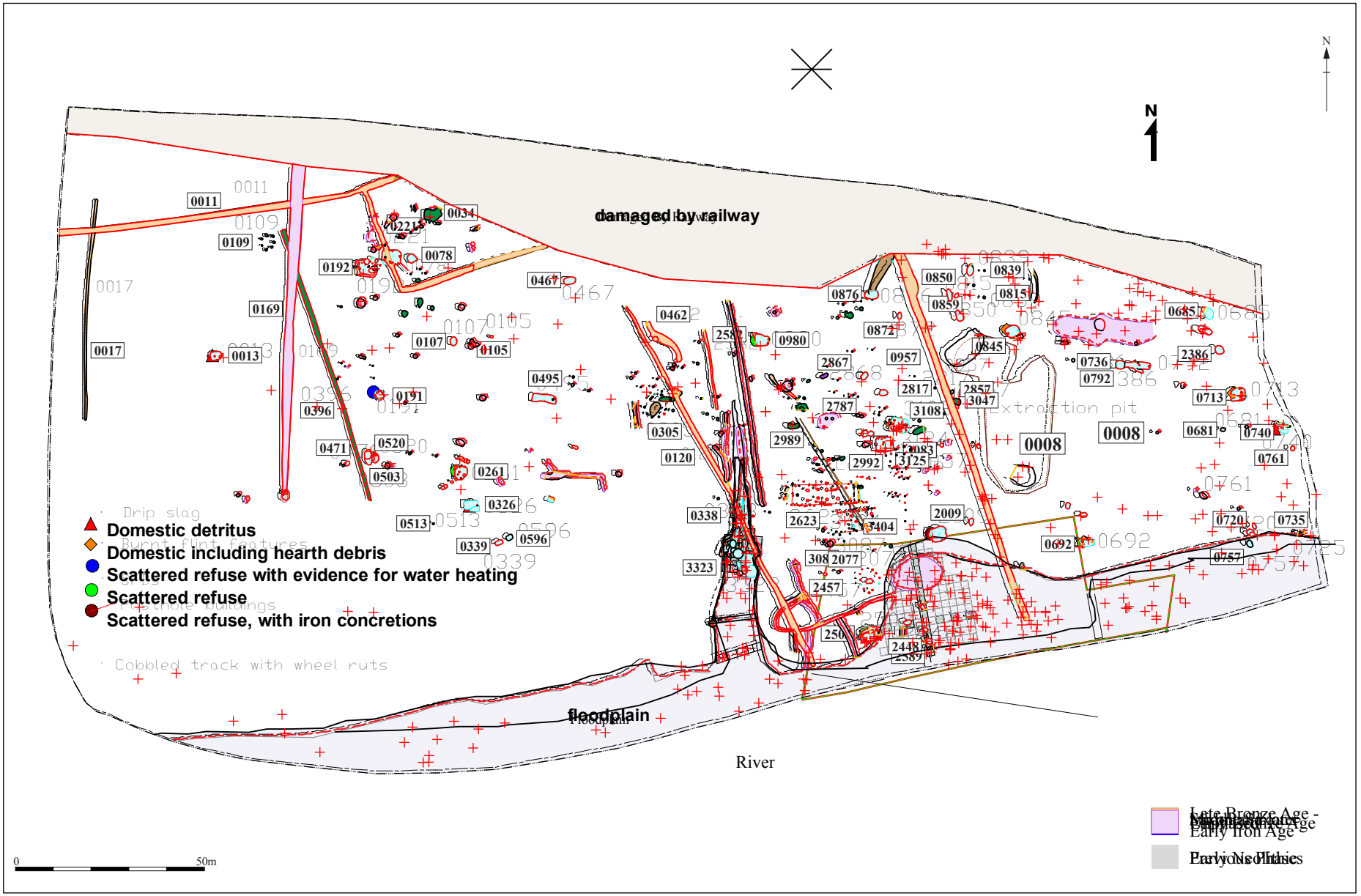


Figure 3 Phase plan, Iron Age and Roman

Figure 10 Small finds plots, Early Bronze Age

2.12 EYE 094

Excavations in 2011 following evaluation in 2009, within the school playing fields on the plateau north of the site have identified a late Roman field system, a sequence of pits and cobbled/gravelled surfaces and hardstanding. The pottery evidence shows that almost all the features date from the middle of the 3rd century AD with activity continuing to the late 4th century. A pair of NW-SE ditches align with those found to the north of the hollow way, and the metalled surfaces may also represent a continuation of activity from EYE 083. Figures 20 and 21 show a plan of site EYE 094 and another of the two sites together. This work will be assessed in a separate report, but the evidence clearly has relevance to any discussion of EYE 083.

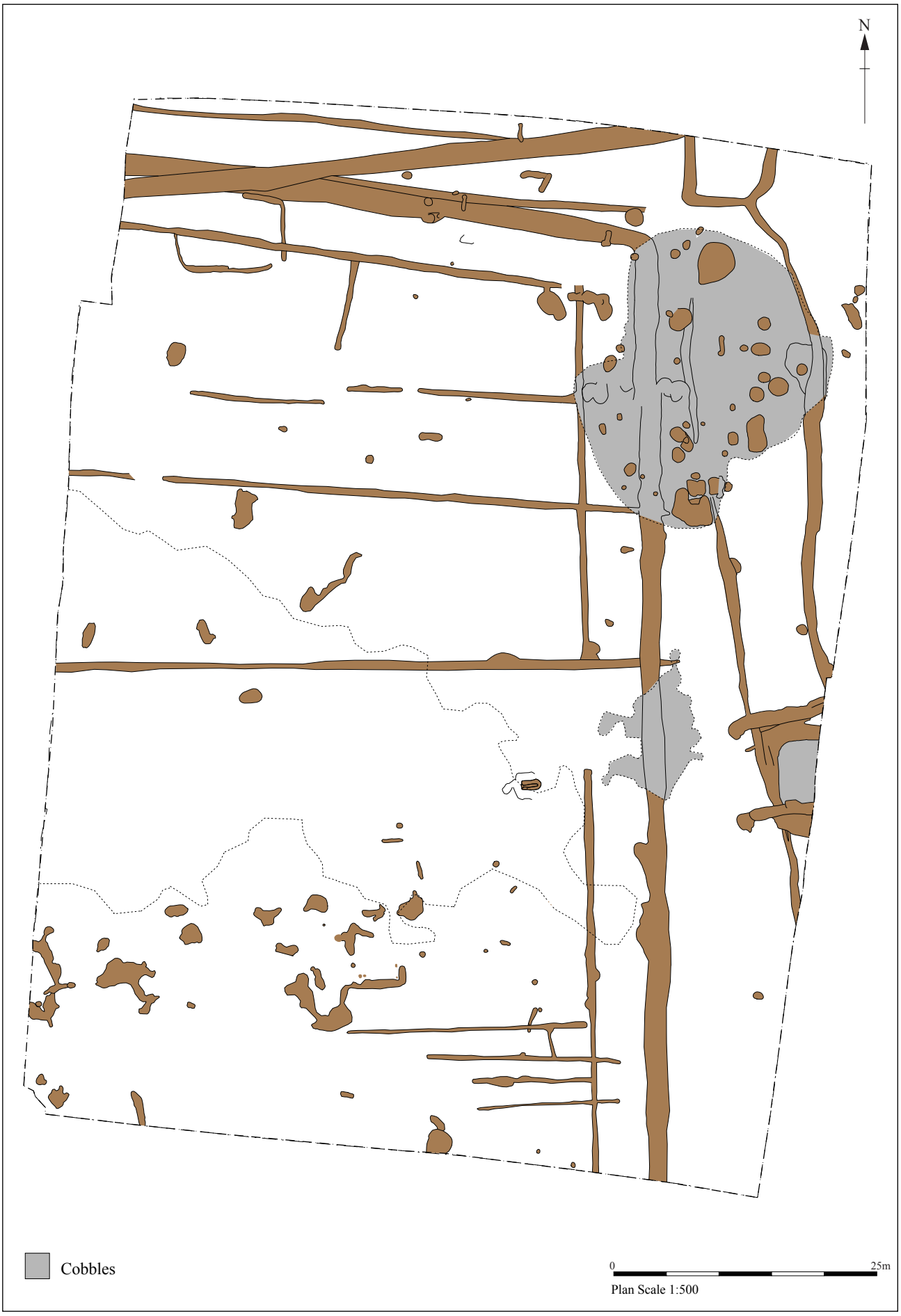


Figure 20. Plan of site EYE 094

Figure 21. Plan showing EYE 083 and EYE 094

3. Quantification and Assessment of the Finds and Environmental Evidence

Compiled and edited by Richenda Goffin

3.1. Introduction

This section of the assessment covers the bulk artefact types recovered from the excavation. These have been initially quantified by count and weight by context. Table 10 shows a breakdown of the quantities of bulk material types, and a full quantification by context can be found in Appendix 6.

Find type	No.	Wt/g
Pottery	4368	58,708
CBM	326	23534
Mortar/plaster	33	391
Fired clay	1368	30677
Clay tobacco pipe	8	25
Post-med bottle glass	3	9
Post-med window glass	1	1
Iron nails	19	226
Quernstone	46	2050
Worked flint	1973	46672
Burnt flint/heated stone	1570	62272
Slag and associated debris	-	57410

Table 10. Bulk finds quantities

An initial description of the finds is followed, for each category of evidence, by a consideration of the potential of the different finds types for further analysis, in particular to address specific research objectives. The bulk materials are considered first, followed by the small finds and then the environmental material.

In general terms, a range of questions can be posed concerning the material culture. These include:

- How does the material culture compare overall in terms of quantity and major types with other settlement sites in the region, such as West Stow, Bloodmoor Hill, and Mucking?

- How does the material culture present at Eye add to our understanding of the locality during the late Roman and early Anglo-Saxon period?
- Will an examination of the spatial distribution of artefacts and environmental remains such as animal bone provide valuable information on the interpretation of the function and dating of individual features during this period?
- Is it possible to associate individual structures with particular activities?
- How predominant was processing and manufacturing?
- How does the dating of artefacts contribute to establishing the length of time that the settlement was in existence during the Anglo-Saxon period?
- Did the settlement change and develop within this overall period?
- Initial consideration of the small finds suggest that it did not continue into the 8th century, but is it possible to establish why this is likely to have been the case?

3.2. Pottery

Introduction

Pottery dating to the prehistoric, Roman and post-Roman periods was identified from the excavation. A breakdown by sherd count and weight and percentages is shown below:

Period	No of sherds	Weight (g)	% by sherd count	% by sherd weight
Prehistoric	2416	27378	55.31	46.63
Roman	128	2126	2.93	3.62
Saxon	1799	28969	41.18	49.34
Med/Pmed	25	235	0.57	0.4
Total	4368	58708	99.9	99.9

Table 11. Breakdown of pottery by major period.

3.2.1. Prehistoric pottery

Sarah Percival

Introduction

The excavations produced a large multi-period assemblage of prehistoric pottery consisting of 2,416 sherds weighing 27,378g. The earliest pottery found at the site is of earlier Neolithic date, but small quantities of later Neolithic to earlier Bronze Age and earlier Bronze Age pottery were also recovered (Table 12). The largest single period assemblage is of later Bronze Age date, which represents 77.2% of the total

assemblage (21,130g). Earlier Iron Age and later Iron Age pottery was also found. A full catalogue of the prehistoric pottery is listed in Appendix 7.

Ceramic Period	Quantity	% quantity	Weight (g)	% Weight
Earlier Neolithic (3500–2200 BC)	89	3.7	811	3
Later Neolithic to earlier Bronze Age (2200–1800 BC)	27	1.1	539	2
Earlier Bronze Age (2100–1500 BC)	10	0.4	73	0.3
Later Bronze Age (1000–800 BC)	1995	82.6	21196	77.4
Earlier Iron Age (800–350 BC)	142	5.9	2385	8.7
Later Iron Age (350–0 BC)	103	4.3	2279	8.3
Not closely datable	50	2	95	0.3
Total	2,416	100	27378	100

Table 12. Quantity and weight of prehistoric pottery by ceramic period

Condition

The majority of the pottery is highly fragmented; most is in a reasonable condition, although some sherds show signs of having been burnt. One complete vessel was recovered. The small plain jar is perhaps of later Neolithic to earlier Bronze Age date and was found as an accessory vessel accompanying a cremation.

Methodology

The assemblage was analysed in accordance with the guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 1997). The total assemblage was studied and a full catalogue prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion type: F representing flint, G representing grog and Q representing quartz. Vessel form was recorded: R representing rim sherds, B representing base sherds, D representing decorated sherds and U representing undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted. The pottery and archive are curated by SCCAS.

Summary of the prehistoric pottery by period

Earlier Neolithic

Earlier Neolithic pottery was found in nine contexts and as unstratified surface finds (Table 13). The majority of the earlier Neolithic pottery is undecorated plain bowl with rolled or rounded rims. A minimum of eight vessels are estimated by rim count. The plain bowls date from around 3600–3300 BC (Gibson 2000). The assemblage also

includes three sherds, 12g, of Peterborough Ware in sand-tempered fabric with impressed and cord-impressed decoration. The two styles overlap chronologically, with the decorated bowl form dating from around 3400–2500 BC (Gibson and Kinnes 1997).

The distribution of the sherds suggest that at least six features may be of earlier Neolithic date, these include three pits (0503, 0513 and 0736) of which pit 0503 contained the Peterborough Ware, and three postholes (0491, 2710 and 2962). Unknown feature 2457 may also of earlier Neolithic date. The remainder of the assemblage is redeposited in later features or as unstratified surface finds.

Feature	Feature number	Quantity	Weight (g)
Unknown feature	2457	8	49
Pit	0503	6	20
	0513	35	443
	0736	13	103
Posthole	0491	1	2
	2710	2	2
	2962	15	106
SFB	3125	3	21
	3215	2	24
Surface finds	0025	2	8
Finds		2	33
Total		89	811

Table 13. Quantity and weight of earlier Neolithic pottery by feature

Later Neolithic to earlier Bronze Age (Table 10)

The small later Neolithic to earlier Bronze Age assemblage includes four sherds of Beaker (36g), eighteen sherds of Grooved Ware (83g) and a complete vessel found accompanying a cremation (411g), plus three sherds (8g) of uncertain vessels type.

The small plain vessel has been included with the later Neolithic to earlier Bronze Age pottery as the fine grog- and sand-tempered fabric looks very similar to fabrics commonly associated with Beaker. It is possible that the vessel is a miniature, similar to an example found accompanying cremation 601, Barrow 12, at Radley, Oxfordshire (Barclay and Halpin 1999, fig. 4.54, P54) and dated by a radiocarbon determination on an associated feature to 2300–1800 BC (Barclay and Halpin 1999, 289).

Grooved Ware was found in two pits (2817 and 2857). Made of sandy vacuous fabric the Grooved Ware is decorated with fingertip-impressed decoration and has a raised or pinched-out cordon similar to examples from Durrington Walls (Longworth 1971, fig. 56, P424). The presence of the pinched-out cordon, used to divide the body of the vessel

into panels, which are then filled with decoration, suggests that the vessel is of the Durrington Walls sub-style. Grooved Ware has a broad date range of around 3000–2000 BC (Garwood 1999).

Beaker sherds include several examples decorated with fingertip-impressed rustication and one example with comb-impressed bands filled with oblique comb impressions similar to examples found at Hockwold cum Wilton (Bamford 1982, fig. 13, P69.021). Beaker is given the generic date of *c.*2200–1800 BC (Gibson 2002), however the use of complex open design is common on settlement sites towards the end of Beaker currency (Boast 1995, 76). It is likely that the Grooved Ware and Beaker are both of domestic origin and are not associated with funerary activity. The distinctive comb-decorated sherd was found in pit 0034; the remainder of the Beaker is from the fill of SFB 3125 or from unstratified features.

Feature	Feature number	Quantity	Weight (g)
Pit	0034	1	8
	2817	7	48
	2857	12	36
Building	3125	1	5
Ditch	2446	1	2
Pot	815	1	411
Surface finds	0025	1	1
	2160	1	5
Finds		2	23
Total		27	539

Table 14. Quantity and weight of later Neolithic to earlier Bronze Age pottery by feature

Earlier Bronze Age

Six sherds weighing 61g of undecorated earlier Bronze Age pottery were found in the fill of possible cremation pit 0850. The sherds are made of a coarse grog-tempered fabric and comprise a simple rounded rim, thick-walled body sherds and a flared base from a single vessel, perhaps an accessory vessel. Further sherds of possible earlier Bronze Age date were found in spread 0950, feature 2191 and building 0713. It is likely that these sherds are redeposited.

Later Bronze Age

A large assemblage of 1,995 sherds weighing 21,196g was recovered from 102 excavated features, principally pits and postholes, and from the fill of an SFB, sieved squares and surface collection. The assemblage has been catalogued using the form series devised by Barrett (1980) and is characterised by undecorated, thin-walled vessels, often with distinctive fingered surfaces. A minimum of 101 vessels is represented (calculated by rim count) in a range of sizes and forms from small fine cups (Barrett 1980, fig. 5) some with omphalos bases, to larger barrel-shaped coarse jars (Brown 1988, fig. 14, 14; Barrett 1980, fig. 5, 7). The pottery is almost all flint-tempered with flint in various sizes and quantities which makes up 96% of the assemblage (20,472g) and includes a vacuous fabric with flint and rounded voids. This vacuous fabric seems to have once contained chalk, as this survives in some examples. Sandy fabrics and a single possible shell-tempered sherd make up the remainder of the assemblage. The vessels are almost certainly of the plain-ware tradition current for the three centuries or so between 1150 and 800 BC (Needham 2007, fig. 1). They bear a strong resemblance to the later Bronze Age assemblage excavated at Barham (BRH 015; Martin 1993, fig. 19) dated by a single radiocarbon determination to 845–795 cal. BC (at one sigma HAR-3160). Within Suffolk contemporary pottery has been found at Culford School (CUL 045; Percival 2008a) and Bloodmoor Hill (Percival 2008b). Other parallels include the large later Bronze Age assemblage found at Lofts Farm, Essex which produced an associated radiocarbon determination centred on 905–805 cal. BC (2680±70 bp HAR-8514; Brown 1988).

Earlier Iron Age

The earlier Iron Age pottery is distinguished from the later Bronze Age sherds by the presence of decoration in the form of fingertip impressions on the rim top, rim and shoulder or slashed to the rim edge, suggesting that they are Barrett's 'decorated ware' (Barrett 1980). One hundred and forty-two sherds weighing 2,385g with a minimum of eight vessels have been included within the earlier Iron Age phase. The sherds are mostly flint tempered with a very small number in sandy fabrics.

The earlier Iron Age pottery was found in a small number of features, principally postholes, but also in small quantities in pit, surface spreads and layers (Table 5). Posthole 2787 produced a particularly large assemblage including many of the larger diagnostic sherds. Radiocarbon dates from various East Anglian sites seem to confirm

that decorated wares started to be used in the region from around 800 BC onwards (Needham 2007). A similar continuum from later Bronze Age plain wares to earlier Iron Age decorated pottery has been observed at Barham (Martin 1992) and within the recently excavated pottery from Fordham, Cambridgeshire (Percival 2007).

Feature type	Feature	Quantity	Weight (g)
2m grid square	2581	1	9
Ditch	2435	2	6
Pit	2899	1	4
	2989	1	7
Posthole	0450	8	184
	0592	1	20
	2548	1	2
	2787	126	2150
Surface finds		1	3
Total		142	2385

Table 15. Quantity and weight of earlier Iron Age pottery by feature

Later Iron Age

Later Iron Age pottery was found in seven features, principally a single pit, 3087, which contained 90 sherds weighing 2,1219g representing the substantial remains of four vessels. The assemblage is mostly in sandy fabrics with curvaceous vessels with sinuous bodies and everted necks ending in simple rounded rims. None of the sherds from pit 3087 is decorated. One sherd of possible later Iron Age date from 2m grid square 3350 in hollow way 2160 has impressed decoration to the shoulder, but otherwise the assemblage is undecorated.

The small later Iron Age assemblage dates toward the end of the Iron Age period from perhaps 350BC onwards.

Feature type	Feature	Quantity	Weight (g)
Pit	2823	2	8
	2868	1	1
	3087	90	2219
Posthole	2819	1	4
	2966	1	3
2m square	2160	3	16
Building	2052	2	15
Spread	0959	1	3
Surface finds	0025	2	10
Total		103	2279

Table 16. Quantity and weight of later Iron Age pottery by feature

Significance of the Prehistoric pottery

The extensive later Bronze Age assemblage is of regional significance being bigger than the largest published example from Suffolk (Martin 1992, 31) and comparable to sizeable contemporary assemblages from Essex (Brown 1988).

The later Bronze Age pottery perhaps relates to a significant cluster of metalwork hoards of the same date which have been recovered from the Eye-Thorndon area (Martin 1989, 38).

Iron Age pottery from the site indicates that occupation at Eye predates the more extensive Romano-British settlement of the island.

3.2.2. Roman pottery

Stephen Benfield

Introduction

A total of 128 sherds of Roman pottery was recovered, weighing 2126 g. The pottery is listed by context (Appendix 8) and summarised in Table 17.

Methodology

All of the pottery was quantified by sherd count, weight and estimated vessel equivalent (Eve). The Roman fabric codes were assigned from the Suffolk Roman fabric series. Roman vessel forms were recorded using the typology devised for pottery at Chelmsford (Going 1987). Other references to vessel forms are individually noted in the text. For the Roman pottery the incidence of the recorded numbered vessel forms are set out in Table 18.

Fabric name	Fabric code	Wgt g	% weight	No. sherds	% no. sherds	Eve.	%Eve.
Local and regional coarse wares							
Black-surfaced wares	BSW	517	24.3	30	23.4	0.49	19.4
Grey micaceous wares, black-surfaced	GMB	223	10.5	12	9.4	0.32	12.6
Grey micaceous wares, grey-surfaced	GMG	4	0.2	1	0.8		
Late shell-temp. wares	LSH	108	5.1	14	10.9	0.39	15.4
Miscellaneous buff wares	BUF	57	2.7	6	4.7		
Miscellaneous sandy grey wares	GX	414	19.5	34	26.6	0.75	29.6
Storage jar fabrics	STOR	79	3.7	4	3.1		
Unspecified shell-tempered wares	SH	16	0.8	5	3.9	0.09	3.6
Late specialist wares							
Hadham red wares	HAX	244	11.5	6	4.7	0.18	7.1
Oxfordshire red colour-coated	OXRC	160	7.5	8	6.3	0.23	9.1
Oxfordshire white-slipped oxidised mortaria	OXWSM	155	7.3	4	3.1	0.08	3.2
Nene Valley colour-coated wares	NVC	147	6.9	3	2.3		
Nene Valley white ware	NVW	2	0.1	1	0.8		
Totals		2126	100.1	128	100	2.53	100

Table 17. Roman pottery fabric quantities by weight, number of sherds and Eve.

Fabric code	Forms recorded
BSW	Dish, form group B1.1; dish ?B3.2; flanged bowl B6 (2); bifid-rimmed jar G28; dish Cam 40B (Hull 1958, 280) or similar
GMB	Platter A2 1/2; bowl C22/23; dish, similar to B1 but with groove around middle; jar, frill immediately below rim, similar to Cam 287-290 (Hull 1958, 285)
GX	Flanged bowl B6 2/1; jar G27 1/1 (?2)
HAX	Dish B10 2/1
LSH	Jar G27 1/1; jar G27 2/1 (3)
OXRC	Flanged bowl C8 (3) also C8 with white paint decoration (1); bowl E4 (2)
OXWSM	Mortarium form D5 or similar
SH	Bowl not easily paralleled, possibly similar to Symonds & Wade 1999 fig 6.110 no. 15

Table 18. Recorded Roman numbered vessel form types by fabric.

Note: all vessel form numbers refer to the Chelmsford Roman pottery type series (Going 1987) except where specified; if more than one recorded incidence of any particular form type then the total number of records of that form are given in brackets

Discussion

Overall, the pottery fabrics and forms are dominated by late Roman types. Many of these can be dated to the later 3rd-4th century or the later 4th and possibly early 5th

century. There are also, however, a number of sherds which can be dated to the early and mid-Roman periods.

The Roman pottery was recovered from eighty-nine separate contexts of which forty-eight, approximately 54 %, are recorded as also containing post-Roman pottery, so that much of the Roman pottery can be shown to be residual. Most of the numbered contexts produced just a single sherd and almost all contained a total of 3 sherds or less. The largest amount form any one context was seven sherds (weighing 44g) from the fill of a pit 0138 (0139). The average sherd weight for the Roman pottery is 16.6g. There are thirty-seven recorded rim sherds which is 28.9% of all of the Roman sherds.

Pottery which can be identified and dated to the early Roman and mid-Roman periods is very limited, but some pottery of this date appears to be present. For the early Roman period (*c* 1st-early 2nd century) there is a rim sherd from platter of form A2 1/2 (Going 1987) dated Neronian-Flavian (from the ditch 0120 (0446)) and a flat/reed-rimmed bowl dated 1st-early 2nd century recovered from topsoil (0002). The mid Roman period (*c* 2nd-3rd century) is hardly represented at all among the closely datable pottery. A dish (from the layer deposit 0003) which is similar to the black-burnished ware category 2 (BB2) form Cam 40B (Hull 1958, 240) may date to the early 2nd-later 3rd century (Symonds & Wade, 470), but might possibly date as late as the 4th century (Going 1987 form B3). Also, sherds which can be closely dated to the mid Roman period, which can, for example, often be recognised among the coarse wares from bead-rim bowls or lattice decorated jars of BB2 type, are noticeably absent; as are 2nd-3rd century fine wares (both imported samian and regional fine wares such as late Colchester colour-coated ware). More generally, sherds in miscellaneous buff coloured fabrics, which make-up about 5% of the sherds and account for just under 3% of the total weight of pottery (Table 17) are more likely to belong to the 1st-2nd or 3rd centuries than later.

Of the pottery which can be closely dated most can be described as late Roman, dating from the early-mid 3rd-4th century and the later 4th century. Sherds of colour-coated ware from the Nene Valley could date from the early-mid 3rd or 4th century, although at least one Nene Valley sherd (a surface find (2791) probably the base of a bowl) is likely to date to the late 3rd-4th century. There are several flanged bowls of form B6 2/1 (Going 1987) in Black Surfaced Wares (Fabric BSW) and Sandy Grey Wares (Fabric GX) which can also be dated to the mid-late 3rd to 4th century.

Of late 3rd- 4th century date, and probably mostly dating to the late 4th century, are Late Shell-tempered Wares which are well represented. These make-up about 11% of all recorded sherds and account for just over 5% of the pottery by weight. It is probable that at least some of the other shell-tempered sherds (Fabric SH) which are not closely dated are also late Roman, so that the totals could be nearer 15% of sherds and 6% of the total weight. The late shell-tempered wares consist, predominantly, of sherds from jars, either bead rimmed – form G27 1/1, or squared/hooked rimmed – form G27 2/1 (Going 1987). There is one shell-tempered rim, probably from a flat-rimmed bowl, which is difficult to parallel from the gridded square 2581 (2104), but see Symonds and Wade 1999 fig 6.110 nos 13-15. Late Shell-tempered wares are generally seen as appearing on sites in Essex and the central and eastern parts of East Anglia in the later 4th century, with the form G27 jars (above) dating from after *c.*AD 350 (Going 1987, 25; Wallace & Turner-Walker 1998, 99). However, shell-tempered wares are produced thoughout the Roman period in the east midlands and regional exports could appear on some sites in East Anglia throughout the Roman period (Wallace & Turner-Walker 1998, 101). However, it seems clear that the Late Shell-tempered wares of Essex and the central and eastern parts of East Anglia date to the late Roman period of the Late 3rd-4th century and much of this pottery probably dates to the later 4th century. This is also indicated here by the presence of sherds from vessels in Oxford red colour-coated ware (Fabric OXRC) of late 4th century date (below).

Vessels which can more certainly be dated to the last half century or so of the Roman period - after *c* AD 350 – come from the Oxford region kilns. Oxford products make up just under 10% of all sherds recovered and just under 15% of the total weight of pottery. Apart from a single white-slipped mortarium (Fabric OXWSM) of form D5 (Going 1987) from the fill of a pit 3258(3259) which may date more generally to the late 3rd-4th century, all the Oxford region pottery consists of sherds of red colour-coated ware (Fabric OXRC) dated here to the later 4th century. The forms recorded are in this fabric are flanged bowls of form C8 (Going 1987) and necked bowls of form E4 (Going 1987).

Significance of the Roman pottery assemblage

Although mostly, or possibly almost entirely, residual, the assemblage is interesting as it has a large proportion of closely datable late Roman pottery, much probably dating to the last half century or so of the Roman period. It is not known at the present time

whether any of the contexts are Roman, and if so these may need to be considered and mentioned separately in the report. The pottery also appears slightly unusual in the large number of rim sherds, 28.9% of all of the Roman sherds recorded, and the possibly slightly large average sherd weight (16g or so). This should probably be further considered and possibly commented on in relation to other late Roman assemblages such as that from West Stow (Plouviez 1985). However, it can be observed that the composition of the late Roman pieces here does not appear to be similar to those from West Stow in that coarse ware, represented by shell-tempered ware, is well represented and base sherds are not unusually common (Plouviez 1985, 84 & Table 17). It is not thought that illustration of any this material would be required.

The pottery assemblage should also be considered in relation to that from the nearby evaluation, EYE 094. There, much of the closely datable Roman pottery is also of late Roman date, but the composition of the assemblage is different - for example there are no late Oxford wares recorded from EYE 094, and sandy grey or black surfaces wares are also prominent, rather than micaceous ones. Other closely datable finds, such as Roman coins, from both sites (EYE 083 & EYE 094) should be considered in relation to the dating of the Roman pottery to see if the difference in the pottery might be chronological.

It should be noted that there is no significant quantity of pottery of other periods, either pre- or post-Roman from the EYE 094 evaluation. The absence of post-Roman pottery from EYE 094 should be considered in relation to possible continuity between the late Roman and the Saxon periods on the EYE 083 site given the different composition of the late Roman pottery assemblage on that site.

3.2.3. Post-Roman pottery

Sue Anderson

Introduction

A total of 1824 sherds weighing 29,204g was collected during the excavation. Table 19 provides a summary of the quantification. A more detailed list by context is available in Appendix 9.

Description	Fabric	Code	No	Wt/g	MNV	eve
Early Saxon grass-tempered	ESO1	2.01	28	714	13	0.1
Early Saxon grass and sand-tempered	ESO2	2.02	106	1593	79	0.37
Early Saxon coarse quartz	ESCQ	2.03	172	3341	114	1.63
Early Saxon fine sand	ESFS	2.04	147	1855	118	1.72
Early Saxon grog	ESGS	2.05	105	2020	65	0.37
Early Saxon grog and organic	ESGO	2.06	4	241	3	
Early Saxon sparse shelly	ESSS	2.07	27	389	23	0.67
Early Saxon fine sand and mica	ESSM	2.08	20	246	14	0.22
Early Saxon coarse shelly	ESCL	2.09	5	111	4	
Early Saxon granitic	ESCF	2.1	257	4027	193	2.04
ESO2 with gold mica	ESOM	2.11	39	636	20	0.07
Early Saxon quartzite	ESQZ	2.12	22	55	1	
Early Saxon sparse chalk	ESSC	2.141	292	4513	143	3.85
Early Saxon quartz conglomerates	ESQC	2.15	8	98	4	0.16
Early Saxon limestone/chalk and organic	ESLO	2.17	49	1257	8	0.59
Early Saxon sandstone	ESSA	2.18	5	127	5	0.08
Early Saxon grog and granite	ESGG	2.19	2	26	2	
Early Saxon ferrous oxide	ESFE	2.2	13	363	5	0.07
Early Saxon calcareous and granitic (gold mica)	ESCM	2.21	6	68	5	0.05
Early Saxon medium sandy	ESMS	2.22	457	6132	332	5.97
Early Saxon fine flint	ESFF	2.23	17	494	7	
Early Saxon fine abundant quartz	ESFQ	2.24	18	663	13	
Total Early Saxon			*1799*	*28969*	*1171*	*17.96*
Early medieval sparse shelly ware	EMWSS	3.19	1	4	1	
Medieval coarseware	MCW	3.2	8	44	8	
Hollesley-type Glazed Ware	HOLG	4.32	1	9	1	
Late medieval and transitional	LMT	5.1	6	122	6	
Glazed red earthenware	GRE	6.12	5	35	3	0.13
Cologne/Frechen Stoneware	GSW4	7.14	3	18	3	
English Stoneware Nottingham-type	ESWN	8.22	1	3	1	
Total post-Saxon			*25*	*235*	*23*	*0.13*
Total			1824	29204	1194	18.09

Table 19. Summary of pottery quantification.

The post-Roman assemblage is clearly dominated by the early Anglo-Saxon material, although a few sherds of medieval, late medieval and post-medieval date were also collected.

Methodology

Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. A full quantification by fabric, context and feature is available in archive. Early Anglo-Saxon fabric groups have been characterised by major inclusions. Form terminology and dating for early Anglo-Saxon pottery follows Myres (1977) and Hamerow (1993). Recording uses a system of letters for fabric codes

together with number codes for ease of sorting in database format, and the results were input directly onto an MS Access table.

Pottery by period

Early Anglo-Saxon Wares

Twenty-three basic fabric groups were distinguished on the basis of major inclusions. However, it should be noted that, as with all handmade pottery, fabrics were extremely variable even within single vessels and categorisation was often difficult. Background scatters of calcareous material, unburnt flint, grog, white mica and other less common inclusions, such as felspar and ferrous pieces, were present in many of the fabrics. All Anglo-Saxon wares were handmade, and colours varied throughout from black through grey, buff and brown to red, often within single vessels.

General fabric descriptions are listed below.

Organic tempered

ESO1: Heavily grass tempered with few other inclusions.

ESO2: Grass tempered but containing a much greater proportion of sand than ESO1.

ESOM: Abundant organic tempering in association with granitic inclusions.

ESLO: Organic tempered with sparse rounded chalk/limestone inclusions.

Quartz tempered

ESQZ: Fine to medium sandy with sparse to moderate very coarse angular white quartz.

ESCQ: Coarse quartz tempering; generally moderate or abundant large grains of sub-rounded quartz in a finer sandy matrix, often poorly sorted.

ESMS: Medium sand tempering with few other inclusions, sand grains generally well-sorted.

ESFS: Fine sand tempering with few other inclusions.

ESSM: Very fine sand and abundant white mica.

ESFQ: Fine abundant ‘sparkly’ quartz (greensand?).

Grog tempered

ESGS: Grog and sand tempering. Grog was usually red and very coarse, but may also be grey.

ESGO: Grog and organic tempering.

ESGG: Grog and granitic inclusions.

Calcareous tempered

ESSS: Sparse to moderate fine shell and sand tempering, shell generally leached out.

ESCS: Coarse shell tempering with few other inclusions.

ESSC: Sparse, rounded chalk in a fine to medium sandy matrix, sometimes leached out.

Granitic tempered

ESCF: 'Charnwood Forest' type, containing granitic tempering (dark mica, feldspar).

ESCM: Mixed calcareous and granitic inclusions.

Sandstone

ESQC: Medium sandy with sparse coarse quartz conglomerates.

ESSA: Medium sandy with sparse angular sandstone fragments.

Miscellaneous

ESFE: Medium sandy with sparse to moderate ferrous oxide.

ESFF: Medium sandy with moderate, unburnt, coarse flint.

Many sites in East Anglia and the Midlands have produced similar fabric groups, although they occur in different proportions. There is scope for comparison with a number of recently excavated assemblages from Suffolk, Norfolk, Essex and Cambridgeshire, all studied by the author using the same generic fabric groupings.

In general, fine, medium and coarse quartz-tempered pottery tend to be the most common fabric groups at sites in East Anglia, although in the later early Anglo-Saxon period these appear to have been replaced to some extent by grass-tempered pottery. Organic-tempering is thought to be a late early Anglo-Saxon development in Essex (Hamerow 1993, 31), Suffolk (K. Wade, pers. comm.) and Northampton (Denham 1985). A decrease in calcareous wares was noted at Mucking after the 6th century. However, in the Midlands, shelly wares appear to increase in the later period and are eventually superseded by Maxey-type wares in the late 7th century.

At this site, medium sandy fabrics dominated, but there were also fairly high proportions of calcareous, granitic, fine sandy, grog and organic tempered fabrics.

The estimated vessel equivalent of 17.96 is based on 188 measurable rims, but there were a further 32 rims which could not be measured. Measurements of handmade vessels are always approximate unless a large proportion of the rim is present. For this reason, the minimum number of vessels (MNV), based on sherd families, was estimated for each context, producing a total MNV of 1172 vessels.

Rim and base types were classified following Hamerow (1993, fig. 26). This produced a total of forty vessels with flaring rims, 124 vessels with vertical ('upright') rims, 27 with

everted rims, 21 with incurving rims, and six beaded rims. Fifty-five vessels had flat-rounded bases, 18 had rounded or saggy bases, three had pedestal-type foot rings and 13 were flat-angled.

Form	MNV
Biconical	3
sub-biconical	8
sloping neck	16
carinated?	4
Shoulder carination	2
Shouldered	16
Baggy	7
round-bellied (globular)	27
flaring bowl	2
hemispherical bowl	21
straight-sided bowl	1
lugged hanging vessel	4
Dish	2
lamp? (or crucible)	4
thumb pot	1

Table 20. Identifiable forms of Anglo-Saxon vessels.

Very few vessels were complete, but it was sometimes possible to suggest the vessel type on the basis of rim or base form, where enough of the body was present. It was also possible to get an idea of shape from some of the larger body sherds, and carinated vessels were especially identifiable from even small pieces. Sixty-eight vessels were identified as bowls, two as dishes, four as possible hanging vessels with lugs, 141 as jars, three as possible lamps, one as a lipped lamp or possible crucible, and one as a large storage vessel. Those for which more detailed form descriptions could be applied are shown in Table 20. Full profiles of eight vessels could be reconstructed. These included a near-complete small jar from 2016 (quadrant 2013), with an ?everted rim, footring base and slightly globular body, and decorated with incised arches and stab marks.

Surface treatment was recorded on a minimum of 452 vessels, and at least 70 had some form of decoration. Table 21 shows the main types found. Most showed some signs of smoothing, but sometimes the surface had worn away through use. *Schlickung*, a type of rustication by the addition of a thick, rough slip coating, was a 5th century technique and was found on seven vessels in this group. Other rustication, in the form

of deliberate roughening or combing, was also observed. Stamps were not common (13 examples, some duplicates), and consisted of types such as rosettes, segmented circles, square grids, cross-in-circles and concentric rings. Where decorative schemes could be identified, most consisted of grooving or incised lines on the upper half of the vessel, a few examples of bossed vessels, and occasional facetted carinations.

Surface treatment	Decoration	MNV
Burnishing	None	35
	Horizontal long oval groove	1
	Arches and stabbing	1
	Facetted carination, stamp	1
	Incised lines/corrugations	4
	Curving fingermarks	1
Smoothing	None	305
	Cross-hatching	1
	Corrugation	3
	Incised lines	28
	Facetted carination with grooves	5
	Cordons	4
	Bosses	6
	Stamped/impressed/stabbed	15
Grass wiping	None	1
Roughened	None	11
Schlickung	None	7
None	Combing	3
	Finger-tip impressions	16

Table 21. Surface treatment and decoration.

This assemblage shows elements which could place it as early as the 5th century (*Schlickung*, biconical vessels), and evidence for continuation into the 7th century (grass-tempered pottery, baggy vessels), suggesting that activity on the site spans the entire early Anglo-Saxon period.

Whilst many pots showed signs of sooting and/or burnt food residues, there was no evidence that any of the vessels had been used for industrial processes. Even the small bowl with a lip, which could have functioned as a crucible given its similarity with later examples of this form, was not highly vitrified and seems more likely to have served as a lamp.

Significance of the early Anglo-Saxon pottery

The pottery assemblage as a whole is in good condition with little abrasion, and the majority was collected from stratified features. Although few intact vessels are present, there is enough information in the assemblage to reconstruct the types of pottery vessels favoured for use in this community.

One of the Regional Research Aims for this period (Wade 2000) involves the study of rural artefact assemblages, to feed into settlement studies. The early Anglo-Saxon pottery assemblage from Eye is one of several large groups to have been recovered from rural settlement sites in recent years, a number of which have been studied by the current author. This makes potential for comparison very high, as there is less chance of inter-observer error in terms of fabric and form descriptions.

In the region as a whole, medium to large early Anglo-Saxon pottery assemblages have recently been studied from Flixton (Anderson 2005a and forthcoming a), Bloodmoor Hill (Tipper 2009), Bromeswell (Anderson 2000a), Handford Road, Ipswich (Anderson 2005b), Eriswell cemeteries and settlement (Anderson, 2005c; 2005d), Lackford (study of fabrics only, Anderson, unpub.), Godmanchester, Cambridgeshire (Anderson 2000b), Gamlingay, Cambridgeshire (Anderson 1998), Witham, Essex (Anderson 2003), Tittleshall and Foulsham, Norfolk (Anderson forthcoming b). Although some of these sites have only reached assessment level, nevertheless basic catalogues of fabrics and forms are available for comparison, which will help to place Eye in context with regard to regional pottery studies for the period. Earlier work often focussed more on the form and decoration of vessels, and it is important that fabrics are now recorded in more detail as comparison of these has the potential to provide information about cultural affiliations and trade (cf Williams & Vince 1997). Older published assemblages from, for example, West Stow (West 1985) and Spong Hill, Norfolk (Brisbane 1984) will also be of value for comparison.

Excavation of the upper layers of the site in 2m grid squares will allow for distribution of the finds to be plotted using Vertical Mapper software. Similar studies at Brandon (Tester and Anderson forthcoming) have shown that plots of these distributions are of value in determining zones of use within Anglo-Saxon settlements.

The contextual information about the assemblage, combined with the different feature types (SFB fills, pit fills, postholes, deposits within the hollow way and colluvial deposit at the south end of the site, record in 2m grid squares) will help to provide a picture of rubbish disposal, and perhaps pottery use, across the site. Refitting analysis will be undertaken within in and between contexts because they have the potential to demonstrate how material has been dispersed across the site.

The identification of primary disposals (pottery at an early stage in the refuse cycle) will also be a priority because the absolute dating of charred residues on potsherds (should they be present) will provide dating information for the pottery sequence itself as well as contributing to the dating of archaeological deposits.

Medieval and later pottery

The post-Saxon part of this assemblage consisted of only twenty-five sherds. Most of this group was abraded and much of it was recovered as surface finds or from the 2m grid squares, although some fragments were from pits or ditches.

One sparse shelly early medieval body sherd was present, and the eight sherds identified as medieval coarsewares were all in grey or buff fine to medium sandy fabrics typical of north Suffolk. One local glazed ware sherd was also present. It is possible that some of this group could be Roman.

Six late medieval (LMT) sherds included a fragment of a skillet with a tapering rim, small lip and flat base from ditch fill 0260. The other sherds are all glazed body fragments.

Two post-medieval glazed red earthenware (GRE) bowl rims were present, and there were also two fragments of a base, and a body sherd. Three body sherds of Frechen stoneware were collected and were probably contemporary with the GRE. A small fragment of a 19th-century Nottingham stoneware footring base was found in feature fill 2379.

Pottery by context type

Table 22 shows the distribution of pottery by context type and spotdate.

Identifier	ESax	EMed	Med	LMed	PMed	Modern
Building	599			1	1	
Posthole	35					
Ditch	28		3	1	4	
linear feature	5					
Pit	120	1				
Feature	128			1	1	1
Layer	106		1	2		
Spread	5					
Surface	5					
2m grid square	587		3			
U/S finds	158		2	1	2	
Unrecorded	23					

Table 22. Pottery quantification (sherd count) by context type and spotdate.

Of the stratified material, the largest group is from SFBs, with large quantities also collected from pits, unspecified features and layers. A large proportion of the assemblage came from the grid-square excavation, which will allow distribution plots to be made. Further analysis of the distribution of the Anglo-Saxon pottery will be required for the final report, in particular with regard to the grid-squares, and pits and other features associated with Anglo-Saxon structures.

3.3. Ceramic building material (CBM) and mortar

Richenda Goffin

3.3.1. Introduction

A total of 326 fragments of ceramic building material was collected from the excavation, weighing 23,534 kg. The assemblage consists for the most part of fragments of Roman date, but small quantities of post-medieval roof tiles were also identified.

3.3.2. The assemblage

The majority of the Roman ceramic building material is made up of small fragments of undiagnostic brick and tile, but pieces of *tegula* and *imbrex* were also identified (for example, in 0953, 0975, 2117). Some of the *tegulae* had cutaways on the flange. In addition a relatively large quantity of box flue tile fragments was recorded, suggesting that there was a hypocausted building in the vicinity. A large fragment of a box flue tile with a circular vent, sooted on the outside was recovered from 2097, and a large

fragment with a square or rectangular vent from 2434. The majority of the flue tiles had keying achieved by combing in a wavy pattern, but criss-cross combing was also present (2864). The largest quantity of Roman cbm was found in posthole/pit 2115 – perhaps it was used for packing?

A small quantity of *opus signinum* and other mortar types was noted but these have not been fully recorded.

3.3.3. Significance of the Ceramic building material (CBM) and mortar

A full examination and record of all the ceramic building material and mortar will provide more information on dating of particular features and amplify discussions on issues such as residuality and re-use. A spatial and temporal study of the distribution of this material should inform issues such as land-use – were there any actual Roman features or is it all redeposited and/or re-used?

A full catalogue of all the Roman ceramic building material will provide information on whether there is likely to have been a Roman building in the vicinity. If so, what type? Were particular fabrics used for specialist tiles such as flue tiles?

Many of the flue tiles recovered from the villa at Hitcham to the south-west of Eye appeared to have been made in a particular fabric (Goffin, unpublished), and it would be interesting to see if this was the case in the assemblage at Eye. Were certain keying-in patterns linked in to particular fabrics?

The examination will also provide information on the re-use of Roman building material in Anglo-Saxon features, for example, in hearths and foundations.

3.4 The fired clay

Richenda Goffin

3.4.1. Introduction

A total of 1368 fragments of fired clay weighing 30,677kg was recovered from the excavation. The condition of the material is variable, and includes small abraded fragments but also harder fired, large fragments. The report does not include any loomweight fragments which are discussed as small finds relating to textile-working,

although it is possible that further fragments of these are present in the fired clay assemblage and remain undetected.

3.4.2. The assemblage

The assemblage is made up of fired clay made in several different fabric types. However, the range of fabrics is limited, so that a study of the distribution of the main fabric types across the excavation should be comparatively easy.

The largest quantity was collected from 2956, the fill of U-shaped pit 2954 (450 fragments weighing 10465g). The fired clay from the feature is all made from the same fabric, which is fine, soft, and orange in colour and contains red clay pellet inclusions. Many of the fragments have flat surfaces with shallow ridges indicative of it being an external surface. The excavator noted that some fragments had wall plaster or pigment on them, but this was not noted during the assessment.

Other clay fragments are buff or pale brown in colour and contain chalk inclusions. Several fragments, notably those in pit fill 0747 (furnace pit 0735) have been burnt, and are semi-vitrified. These may be the dumped remains of semi-vitrified hearth lining, or they could represent the burnt remains of a structure perhaps constructed above the furnace which generated the slag lump. A large flat fragment of hard-fired burnt clay from posthole 3103 located close to SFB 3125 is made of a similar fabric. This is slab-like with a flat surface and a more irregular opposite surface which is less well preserved. It is possible that this represents a fragment of uncertain function, but of a type which has been noted before on other early Anglo-Saxon sites. Similar pieces have been found at Bloodmoor Hill (Anderson 2009), Brandon (Anderson 2001), as well as other sites in East Anglia.

Few fragments with impressions of rods or withies consistent with wattle structural elements, either in panels or otherwise were noted. Impressions of more substantial structural impressions such as lathes or other timberwork were also not noted.

If any fragments with wattle impressions are present, it may be that they are the remnants of the superstructures of hearths and ovens rather than belonging to more substantial wattle and daub structures. There was no indication from the assemblage from Bloodmoor Hill that wattle and daub was definitely being used in the early Anglo-

Saxon period on the site, although fifty-seven fragments were provisionally identified as being daub (Anderson 2009). Some of the fired clay could also date to the Roman period, and some also could have been re-used if hard enough for levelling up or consolidation during the Anglo-Saxon period.

No fragments with pigment, limewash, or textile impressions were noted, but full analysis would confirm this.

3.4.3. Significance of the Assemblage

The fired clay should be examined and any fragments of possible early Anglo-Saxon loomweight should be extracted and given small find numbers.

The material should be catalogued by broad fabric type by context, to determine whether there were different types, and also to determine how much preparation was involved with the production of this material. Was additional temper being deliberately added for example to improve its properties? How do the Anglo-Saxon fired clay fabrics compare with the fabrics used for the loomweights of this date?

The fired clay should be considered by feature and phase. How much of it can be associated with individual structures for example, and how much has been used across the site for infilling? Is there any evidence for Roman daub e.g. correlation between decent CBM assemblages and well preserved daub fragments of a particular fabric type?

An examination of the fired clay should provide additional information on the possible function of particular features, such as ovens and hearths. Is there any evidence for this material being used structurally, for wattle and daub walls from SFBs or other structures? Close examination should be made of the daub that was considered by the excavator to be painted.

Evidence of re-use and redeposition should be considered. Is there any of the assemblage which is likely to be Roman and redeposited into early Anglo-Saxon features?

Reference should be made to other fired clay assemblages in the region from this period, e.g. Bloodmoor Hill (Anderson 2009).

The mortar should be catalogued by fabric and its spatial and temporal distribution examined. Andy diagnostic features should be described and discussed.

3.5. Clay tobacco pipe

A total of eight fragments of clay tobacco pipe was recovered from five contexts. All of them are stem fragments and are not closely datable beyond the post-medieval period.

No further work is required.

3.6. Post-medieval vessel glass

A single fragment of post-medieval vessel glass was recovered.

No further work is required.

3.7. Post-medieval window glass

A small fragment of post-medieval window glass was identified from 0613.

No further work is required.

3.8. Iron nails

A total of nineteen fragments of iron nails was present from the site (226g).

3.9. Worked flint

Sarah Bates

3.9.1. Introduction

A total of 1975 pieces of struck or shattered flint was recovered from the site. The flint is summarised by type in Table 23.

Type	Number
multi platform flake core	25
single platform flake core	20
single platform blade core	3
multi platform blade core	1
keeled core	4
bipolar core	3
core fragment	26
tested piece	40
struck fragment	88
shatter	150
core/tool	9
hammerstone	3
core trimming flake	7
flake	1031
blade-like flake	87
blade	51
bladelet	1
spall	59
chip	1
end scraper	7
double end	2
side scraper	2
scraper	27
piercer	20
awl	5
spurred piece	3
knife	3
discoidal knife	1
knife	1
combination too	4
denticulate	1
serrated blade	1
notched flake	7
arrowhead	1
retouched flake	119
retouched fragment	18
retouched blade	1
utilised flake	114
utilised blade	18
utilised fragment	3
polished flake	1
hammerstone flake	1
Hammerstone	4
struck fragment	1
non-struck fragment	1
Total	1975

Table 23. Summary of the flint by type

3.9.2. Methodology

Each piece of flint was examined and recorded by context in an MS Access database table (Appendices 10 and 11). The material was classified by *category* and *type* (see archive) with numbers of pieces and numbers of complete, corticated, patinated and hinge fractured pieces being recorded and the condition of the flint being commented on. Numbers and weights of burnt flint were also recorded. Additional descriptive comments were made as necessary.

To ensure consistency with the summary records (see archive), non-struck flint was included in a separate column (*Non struck*) in the database but has now been discarded. It is not included below.

3.9.3. The assemblage

A total of fifty-six cores are present. Totals of forty-five and four flake and blade cores respectively are present. Just over half the flake cores are multi platform pieces while three of the blade cores are struck from only one platform. Although one or two of the blade cores are quite neat, they are mostly quite minimally utilised and do not exhibit many traits typical of carefully prepared and curated cores. The flake cores vary in size and nature. Pieces are predominantly quite small although a few larger cores are also present. Twenty-eight are generally quite irregular with, in several cases, for example, thermally fractured or patinated surfaces present on core platforms. Thirteen flake cores are described as chunky and there are three or four small quite neat cores. One very small ‘core’ 2199 weighs only 10g.

Additionally, three cores are classified as bipolar as they have blades or blade-like flakes struck from two opposite ends but they are all slightly irregular. Four keeled type cores are also present. One is quite neat with blades from two sides of a ridge 0614, the others have flakes mainly from one side with just a few removals on the opposites sides.

Twenty-six core fragments are present. These vary in their degree of regularity but many of them, from the sides of cores, include parts of the platform edge. A few have battered edges or include incipient percussion cones and this, as well as the fragmentary nature of these pieces, suggests that knapping may have been undertaken quite haphazardly.

Nine pieces have been classified as core rejuvenation pieces and may represent attempts to utilise cores more efficiently although they are irregular. Most of them come from the platform edges of cores. One piece has a battered dorsal ridge and resembles a crested blade 0710.

Forty ‘tested pieces’ are included in the site assemblage. Most of these are irregular and only minimally struck but in a relatively deliberate way; mostly from one edge or ‘platform’. Quite a few are irregular cortical fragments with short flakes struck from along one longer edge. Eighty-eight miscellaneous and irregular ‘struck fragments’ are present. Most are cortical and many are quite small. Many have at least one thermally fractured surface. Some pieces may have resulted accidentally.

Nine pieces have been classified as core/tools. These have been struck around an edge or edges, sometimes bifacially and might have been used as cores. Most of them may also have been used as crude scraper type tools.

A total of 1031 flakes are present. Irregular pieces account for the majority of these and although some larger flakes are present, small pieces occur most frequently. There are many small to medium-sized, quite thick and very irregular flakes. Quite a few pieces have irregular thermally fractured or patinated surface areas. Many pieces have pronounced or thick platforms characteristic of hard hammer struck flint, some have patinated or cortical platforms. The material is, predominantly, edge damaged to some degree although some is recorded as quite sharp and a few pieces as sharp.

Eighty-seven blade-like flakes are also included in the assemblage. Many of these are small or quite small. The condition of material varies and includes both sharp, quite sharp and edge damaged pieces. Three pieces from context 0504 refit to each other and another piece 0634 refits to a blade from the same context. There are some more irregular and a small number of neater pieces and five of the flakes have abraded platforms.

Fifty-one blades, mostly small, and a bladelet were found. Seventeen blades have abraded platforms and about the same number are described as neat. Eleven small

neat sharp blades from context 0737 all have abraded platforms. Both sharp/quite sharp and edge damaged pieces are present.

Totals of 150 shatter pieces, fifty-nine spalls and one very small chip are also present. The shatter pieces are predominantly irregular cortical fragments, often jagged in nature. Mostly, they seem likely to have resulted from knapping but a few might be accidentally or 'naturally' formed – perhaps by thermal processes.

Thirty-eight pieces have been classified as scrapers. Seven of these are end scrapers, mostly quite neat blade-like or ovate pieces. One of them 0660 is on a slightly curving blade-like flake with possible facetted platform and may be a relatively early type. Other pieces, including one blade type piece are clearly hard hammer struck. Two other scrapers have both ends retouched; one of these 2132 has the main retouched edge at its proximal end with more slight trimming of its distal end. Two side scrapers are also present; one of them a small neat piece and the other thick and irregular. The other scrapers are miscellaneous types, often quite thick and some of them irregular fragments. Several scrapers have been made on thermally fractured fragments.

Twenty pieces are classified as piercers. Mostly these are quite small irregular pieces which have a degree of utilisation of their points. Nine small pieces have some retouch to their points and one larger irregular fragment <164> is retouched to a point demonstrating the use of irregular non-struck material. Another five pieces, three of them irregular and two pointed fragments, have retouch on opposite faces at their tips and are classified as awls.

Additionally, three spurred pieces are present; one on a thin irregular patinated flake, one on a cortical thermally fractured fragment and the other on a thin flake. All have retouched forming a slight protruding spur on an edge.

Four pieces are classified as knives. These include a small squat flake with invasive flaking and edge wear along its right side and reverse retouch of its left edge 0954, a small subcircular flake with bifacial flaking 3322, and two fragments 0613 and 2000 (one of them of thermal origin) with retouched straight edges.

Four pieces have been classified as combination tools as they have been retouched or used in more than one way. There is a scraper/spurred piece 0221, a scraper/notched flake 0025, a notched flake/knife2127 and a spurred piece/utilised flake 2642.

A very slightly serrated blade 0410 and a very irregular possible denticulate 2206 are present and seven flakes have possible notches in their sides.

A ‘leaf-shaped’ flake with its broader end missing has shallow bifacial retouch of one edge and may be a broken or unfinished arrowhead 2476.

Very large numbers of retouched and utilised flakes, with smaller numbers of modified fragments and blades have been recorded. Some pieces are more regular but mostly they are irregular and, in some cases, the degree of modification or use is minimal or, possibly, questionable. Overall, however, these pieces indicate the use of irregular flakes and fragments and the expedient use of available pieces including, possibly, the reuse of previously knapped material 0758, 3257.

One other possibly utilised piece is an irregular burnt cortical fragment with part of its surface very smooth, almost polished 3053. It may have been used as some kind of rubbing stone.

Two hammerstones are present, one of them incomplete. Both have some areas of cortical surface and other areas battered and pitted through use.

One very large lump of flint (150mmx100mm) is evenly pitted across its entire, and completely flat, ?upper surface 2800. Its rounded ?lower surface is cortical and is smoothed, almost polished, in places. Some flakes have been struck from the sides of the piece but it seems likely that these were removed either to trim the sides of the object or perhaps accidentally rather than that the lump was used as a core. It is possible that the piece is part of an anvil or quern of some kind (Healy 1996, 73, fig 43) the lower area may have been worn smooth during use.

3.9.4. Distribution

The flint was recovered from 1009 contexts, 30% of it (by number) was from 2m grid squares and 28% was from pit fills. Lesser amounts came from other context types (Table 24). Detailed examination of the distribution of the flint across the site and by feature has not been carried out at assessment. The flint found in deposits alongside prehistoric pottery is described below but in some cases the flint and prehistoric pottery came from later features.

Feature type	Number	% of entire assemblage
2m square	597	30
Pit	545	28
layer/spread	191	10
Building	169	9
Feature	153	8
Posthole	107	5
Ditch	80	4
surface finds	75	4
Finds	28	1
Unknown	26	1
Segment	5	<1
Sample	3	<1
linear feature	2	<1
Slot	1	<1

Table 24. Flint by feature type (types as in context database)

3.9.5. Flint by period

Earlier Neolithic

Five flints were found in features alongside pottery of earlier Neolithic date (Table 21). Two flakes, one retouched, were found in feature 2457, a core and a core fragment came from posthole 2962 and a utilised flake was found residually in SFB 3125.

Feature	Feature type	Number of flints
2457	Feature	2
2962	posthole	2
3125	SFB	1

Table 25. Flint found with earlier Neolithic pottery

Later Neolithic to earlier Bronze Age

Five pieces were found in contexts with later Neolithic to earlier Bronze Age pottery (Table 26). Two flakes came from ditch 2446, single flakes came from SFB 3125 and from the surface of 0025, and a neat end scraper came from pit 2817.

Feature	Feature type	Number of flints
25	surface finds	1
2446	Ditch	2
2817	Pit	1
3125	SFB	1

Table 26. Flint found with later Neolithic to earlier Bronze Age pottery

Later Bronze Age

A total of 556 flints came from contexts which contained later Bronze Age pottery although it seems likely that the flint was residual in some features. This flint has been listed as Appendix 10 in the archive.

Sixty-three flints came from the fills of thirteen pits that are spot-dated at assessment to the prehistoric period and by ceramics to the later Bronze Age. They include a core and two core fragments, thirty-three (mostly small) flakes, six blade-like flakes, two blades, four miscellaneous struck fragments, three shatter pieces, a spall, a small ovate scraper on a primary flake, two retouched flakes and a retouched irregular fragment and six utilised flakes. The large ?anvil/quern stone (see above) also came from the fill of a pit of likely later Bronze Age date.

Fourteen flints came from fills of postholes of probable later Bronze Age date (dated by pottery). They include an irregular scraper, a retouched flake and a shatter piece. The rest of the material comprises unmodified flakes. A small flake came from a slot of the same possible date and two small flakes came from another feature with a likely prehistoric date.

Eleven pieces came from spreads of soil which may be of later Bronze Age date according to pottery recovered. The flint includes a struck fragment, three shatter pieces, five flakes, an irregular possible denticulate and a hammerstone.

Two hundred and twenty-seven flints came from 2m grid squares, much of it found alongside pottery of Anglo-Saxon date although later Bronze Age pottery was also

found. Thirty-two flints came from the fills of SFBs and twelve pieces of flint were found with later Bronze Age pottery in ditches of likely Anglo-Saxon date Thirty-one flints came from pits and 103 flints were found in other features spot-dated to the early Anglo-Saxon period. Thirty-one flints came from layers and 29 flints were made as surface finds. These contexts are all spot-dated by ceramics to the early Anglo-Saxon period but also contained later Bronze Age pottery.

Earlier Iron Age

Forty-one flints were found alongside pottery of earlier Iron Age date (Table 27).

Context	Feature	Feature type	No of flints
2097	2581	2m square	2
2453	2435	ditch	4
2705		surface finds	1
2785	2989	pit	3
2839	2787	posthole	31

Table 27. Flint found with earlier Iron Age pottery

Thirty-one flints came from fills of posthole of possible later Iron Age date. They include part of a hammerstone, two irregular struck fragments, 13 shatter pieces and 15 flakes. Two irregular flakes and a struck fragment came from a pit. Four flakes were found in a ditch and a single flake as a surface find.

Two flakes were also found with later Iron Age pottery in a 2m grid square but later finds were also present in that context.

Iron Age

Eight pieces of flint came from contexts which contained Iron Age pottery (Table 28). However it seems likely that the flint and Iron Age pottery might be residual in these contexts which are almost all spot-dated to the early Anglo-Saxon period at assessment.

Context	Feature	Feature type	Number of flints
2022	2052	SFB	1
2023	2052	SFB	2
2157	2160	2m square	1
3088	3087	Pit	3
3249	2160	2m square	1

Table 28. Flint found with Iron Age pottery

There are six flakes, one of them blade-like, a hammerstone, and a small piercer.

Other flint

The remaining flint from the site came from undated contexts or from deposits or features which are spot-dated to the Roman or early Anglo-Saxon period at assessment. They include cores, debitage and pieces retouched and/or utilised. This flint has not been considered in detail at assessment although it has been suggested by the excavator that some burnt flint and also, possibly, some struck pieces may be contemporary with evidence for early Anglo-Saxon industrial activity at the site.

Discussion

Although a few pieces of flint are of types that might be of earlier date, the majority of the material is consistent in date with a later Neolithic or later date. The very irregular hard hammer struck nature of much of it, as well as evidence for the use of thermally fractured and patinated flint as a raw material and for tools, possible evidence for the reuse of flakes and a fairly limited range of generally irregular tools all suggest that much of the worked flint dates to a late prehistoric period (Butler 2005, 179-182, Young and Humphrey 1999). The fact that there is little other evidence for earlier prehistoric activity at the site supports the notion that the flint might well be contemporary with the later Bronze Age pottery found at the site. There is thought to be a possibility, however, that some flint might relate to later industrial processes; further consideration of some of the material from the possible early Anglo-Saxon features might help elucidate this possibility.

The remaining flint, from deposits or features which are spot-dated to the Roman or early Anglo-Saxon period, has not been considered in detail at assessment and requires further investigation.

3.9.6. Significance of the worked flint assemblage

The presence of later prehistoric flint and Late Bronze Age/Early Iron Age settlement is significant as it offers the opportunity to examine the importance and quality of flint working in this transitional period as metal begins to dominate in tool manufacture.

3.10. The burnt flint and stone

Richenda Goffin

A total of 1904 fragments of burnt flint and heated stone was recovered from the excavation (9.358kg). The material has been counted and weighed by context, but has not been fully examined for the assessment. The stone has clearly been affected by heat, presumably from being used as potboilers or as thermal conductors for a specific purpose.

Although much of the assemblage is likely to be contemporary with the prehistoric activity on the site, it is possible that some of the material is post-Roman in date, and that it could represent the remains of flint piles or platforms for some type of industrial activity.

Significance of the burnt flint

Temporal and spatial analysis of the deposition of the flint should be undertaken, to determine particular concentrations of flint during the prehistoric periods, and the early Anglo-Saxon period. The material should be examined to see if there are any features of note amongst the assemblage, and any differences between the material recovered from prehistoric features and those which could be later should be discussed.

Are there particular rectangular ‘platforms’ of burnt flint recorded on site and if so what date are they? Are there any parallels for these features elsewhere? What is the likely function of these features and are they associated with particular artefacts types or biological remains such as animal bone?

3.11. Quernstone

Richenda Goffin

A large fragment of Puddingstone quern (SF1456) dating to the early Roman period was recovered from 2m square 2122 within the colluvium deposit 0025 (NB see above - this may well be from hollow 2578)

The remainder of the quernstone assemblage is made up of Rhenish lavastone (45 fragments weighing 2.050kg). Most of the assemblage consists of small abraded and

featureless fragments, but a larger fragment from 2683 (2m grid square) has very large dressed grooves on one surface and may be part of a millstone rather than a domestic hand quern.

3.12 The slag and associated debris

Lynne Keys

3.12.1. Introduction and methodology

A medium-sized assemblage of slag, weighing just under 58kg, was recovered by hand on site. The material was examined by eye and categorised on the basis of morphology and each slag or other material type in each context was weighed. Quantification data and details are given in Appendix 12, where weight (wt.) is shown in grammes.

3.12.2. Explanation of processes and terms

Activities involving iron can take two forms:
1) Smelting: The manufacture of iron from ore and fuel in a smelting furnace. The products are a spongy mass called an unconsolidated bloom consisting of iron with a considerable amount of slag still trapped inside, and slag (waste). The slag produced takes various forms depending on the technology used and the period: furnace slags (including slag blocks and furnace bottoms), run slag, tap slag, dense slag or blast furnace slag.
2a) *Primary smithing*: This took place in periods before the late post-medieval development of casting iron. It involved the hot working (by a smith using a hammer) of the iron lump on a stringhearth (usually near the smelting furnace) to remove excess slag. The slags from this process include smithing hearth bottoms and micro-slags, in particular tiny smithing spheres.
2b) S*econdary smithing*: This involves the hot working (using a hammer) of one or more pieces of iron to create or to repair an object. As well as bulk slags, including the smithing hearth bottom (a plano-convex slag cake which builds up in the hearth base), smithing generates micro-slags. These can be hammerscale flakes from ordinary hot working of a piece of iron (making or repairing an object) and/or tiny spheres from high temperature welding used to join or fuse two pieces of iron.

Many pieces of slag in an assemblage are described as undiagnostic, i.e. they cannot be assigned to either smelting or smithing either because of morphology or because

they have been broken up during deposition, re-deposition or excavation. Other types of debris in the assemblage may derive from variety of high temperature activities - including domestic fires - and cannot be taken on their own to indicate iron-working was taking place. These include fired clay, vitrified hearth lining, cinder (the lightest portion, nearest the fire, of vitrified hearth lining) and fuel ash slag.

3.12.3. Key groups

The key group for the site is 0735 (furnace pit 0735) which contained over 53.4kg of smelting slag and related debris. Not all the material in the pit was recovered: some sampling took place on site.

Other slags were found across the site but in small quantities. No other focus of smelting was located.

3.12.4. Discussion of assemblage

Smelting

Where diagnostic, the slags represent smelting activity. The largest quantity came from pit 0735 which may be a slag pit used during an Iron Age or early Anglo-Saxon smelting operation. The slag appeared to be in one piece when *in situ* in the pit (Pls. 31 and 32), but when lifted it was obvious it was not one homogenous block, and it fell apart. Examination of some of the larger pieces recovered show the non-homogeneity was probably caused by variations in temperature during the smelt (hotter when more fuel was added and the slag ran down; slightly cooler in between) making slag runoff into the pit intermittent. The result was to create an enormous lump formed of layer upon layer of run slag, which peeled away from the rest if not handled carefully.

The slag is of a type that has often been called a slag block (derived from the German word *Schlackenklotz)*. It was produced in a furnace that had a pit below and a removable superstructure above. The pit allowed the slag to collect, rather than being tapped or run out of the furnace, but it is not known whether the Eye slag pit was slanted slightly to allow slag to run down more efficiently from the main focus of smelting in the furnace.

Slag blocks are commonly encountered on Iron Age smelting sites in southern Scandinavia, North Germany and Poland but until recently very few examples had been

recognised from England and these were thought to be exclusively early Anglo-Saxon in date. In the last few years, however, excavations at several sites - including Leda Cottages and White Horse Stone in Kent (both Channel Tunnel Rail Link projects, in preparation) - recovered slag blocks from contexts which definitely date to the late Iron Age or very early Romano-British period.

There are two reasons for believing pit 0735 was probably a furnace pit. The first is that the slag would have broken up (in the manner it did when it was lifted on site) if had been disturbed and re-deposited in the past. Tiny smelting spheres were still present in the layers of the slag block and on the surface. The second is that there was a significant amount of ash and charcoal in the pit and around the slag, lending support to the interpretation the slag was *in situ*.

Other small pieces of smelting slag were found across the site in various features such as sunken features, pits and ditches. It is almost certainly re-deposited material already on site when the features were subject to back filling.

No smithing slags were recovered and no hammerscale samples were presented for examination at assessment so it is unlikely that much smithing took place on site. Having said that, the removal of upper layers on the site by ploughing and the possibility that smithing slags may have broken up by disturbance and now represented only as undiagnostic slag, may account for the lack of smithing evidence.

Ore

Small pieces of stone found amongst the slag assemblage during quantification are very similar to identified iron ores from elsewhere in East Anglia. They need to be securely identified by a geologist during post-excavation analysis. None of the pieces came from smelting pit 0735 but if they are ore, their presence indicates a source on site or nearby which was being exploited in the Iron Age and/or the early Anglo-Saxon period.

3.12.5. Significance of the slag

Lynne Keys and Richenda Goffin

One of the most important aspects of the further work will be to establish the dating of the slag block, to find out whether it is Iron Age or early Anglo-Saxon in date. Either

way, the smelting method is the same as that used in north-west Continental Europe. Radiocarbon dating of any grains associated with the block may enable a reasonably accurate date to be established for this material. If the slag block is early Anglo-Saxon then it provide us with valuable information on ironworking technology during this period, as few sites with this kind of slag from this period have been identified. In addition, the analysis of the slag will contribute substantially to establishing a picture of the overall nature and function of the site during the early Anglo-Saxon period.

This material is of local, regional and national significance.

If the slag block is considered to be Anglo-Saxon in date, any dating refinement within this period will be very useful. Slag blocks excavated from an iron working complex at Rook Hall, Little Totham, Essex, have been dated to the 7th century (Current Archaeology 1989, 262-263).

Was there any indication of any metallurgical activity around the block, or any associated furnace debris, or has it been dumped away from the original pit in which it was last used? Does the lump represent more than one smelt? It seems that the shaft furnace can be moved sideways and re-used.

All the slag will be examined in terms of its stratigraphic provenance both spatially and temporally and a distribution plan of this material across the site will be created. The distribution will be considered in terms of whether there are particular zones or foci of industrial activity on site during the major periods. How much of the material is coming from dumped deposits, and how much is coming from *in situ* ironworking? Does the evidence support the hypothesis that during the Anglo-Saxon period ironworking took place on a small scale to satisfy local needs?

Is there any evidence for slag tapping as well as slag block smelting, as was found at Mucking (McDonnell 1993, 83). Is the initial observation that there is no evidence of smithing on site still valid, and if so, why is there no evidence? Is there evidence in the sample residues of hammerscale and if so what type? If there is none, it may be that the site at Eye was primarily an industrial one, concerned with the production of iron, the processing of animal bone and other activities, and was less of a traditional settlement such as West Stow. If so, what was its market and how large an area was it producing

for? How does the assemblage compare with other early Anglo-Saxon sites in the region. At Bloodmoor Hill, for example, there was an enormous quantity of slag (*c*.153kg) but only evidence of smithing rather than smelting (Lucy *et al*. 2009).

Is there any evidence of charcoal adhering to the slag indicative of the fuel which was being used? Is there any evidence of charcoal making and ore roasting occurring on site? Is there any evidence of non-ferrous metalworking on any of the slag, such as copper alloy droplets? The small find assemblage has shown that there are lead and copper alloy waste fragments (although unstratified), as well as the lead model for the florid cruciform brooch, and the copper alloy ingot.

In addition to the slag itself, the presence of possible iron ore is significant. An examination of this material may provide information on whether it was extracted locally or otherwise, and the type of iron that was obtained from the smelt. The most likely source could be 'bog ore' from waterine environments (that is, the concentration of iron compound by precipitation from slow moving or stagnant waters), or ironstones from glacial deposits of clays or gravels (McDonnell 1993, 83). Are there substantial iron ore deposits in the vicinity?

3.13 Quantification of the small finds

Ian Riddler

3.13.1. Introduction

A little over 650 small finds were examined for this assessment, representing almost all of the objects recovered from excavation and metal-detecting, but excluding the coins, which have been separately assessed below. This impressive collection of objects includes several items of late prehistoric date and a small collection of Roman items, but is dominated by early Anglo-Saxon, medieval and post-medieval finds (Table 21).

3.13.2 Factual Data

Methodology

The objects have been examined and identified to material and type as far as possible. Iron objects have been viewed with the aid of X-radiographs and low level microscopy has been used in some cases to assist in identification. The original small finds

database formed the basis for the assessment and has been checked against the objects themselves, with all revisions duly noted. Characteristic objects of the early Anglo-Saxon period have been grouped according to existing typological sequences.

The assemblage

The objects are summarised by period and material in Table 29. A breakdown of the objects by quantities within main period is presented in Appendix 13. Metal-detecting was carried out on site and, as a result, there are large quantities of unstratified copper alloy and lead alloy objects and waste materials. These can be dated from the late prehistoric period onwards but are dominated by late medieval and post-medieval items. There are two fragmentary items of gold and three of silver, all of which are likely to be of early Anglo-Saxon date.

Period	Gold	Silver	Copper Alloy	Lead	Iron	Glass	Ceramic	Stone	Antler or Bone
Prehistoric			15				1		
Roman			23	1	2	6			
Early Anglo-Saxon	2	3	58	7	82	11	7	3	26
Medieval			74	10	9				
Post-Medieval			74	22	5				
Undated			111	26	6				

Table 29. Breakdown of objects by material and main period (totals exclude coinage)

Prehistoric

Most of the prehistoric small finds are metal-detected objects of copper alloy. They consist of five fragments of axe heads, as well as a copper alloy bead. Part of a terret arrangement, including rings and other attachments, provides the majority of the Iron Age finds, but there is also a fragmentary triangular loomweight.

Roman

The Roman small finds are also made up for the most part of metal-detected objects of copper alloy. They are a little more numerous and include a series of fragmentary copper alloy brooches of 1st to 2nd century date, as well as a few strips from later Roman bracelets. Two pins of iron appear to have heads of what appear to be Roman types, although it is more likely that they are of early Anglo-Saxon date, and they have been considered below. Late Roman items include an amphora-shaped strap-end and several fragments of bracelets, as well as part of a crossbow brooch.

Early Anglo-Saxon

The early Anglo-Saxon assemblage consists of a little over 200 items and includes both metal-detected and excavated small finds. It is clear from Table 29 that only the early Anglo-Saxon finds extend beyond metalwork into several other materials, indicating the presence of settlement, rather than just casual loss or acquisition from a site nearby. The early Anglo-Saxon small finds are grouped by functional category in a series of small tables and briefly discussed within those categories, beginning with dress accessories.

Dress accessories

The metal detected material is dominated by brooches and wrist clasps, most of which are fragmentary but can be identified to type. They are summarised by type and form in Table 27. In general this is a typical assemblage for East Anglia, with an emphasis on the late 5th to mid 6th century, but with some of the annular brooches, in particular, also suggestive of a later dating. It is unusual to see this quantity of dress accessories emerging from a settlement, rather than a cemetery. Only six brooches came from the West Stow settlement, for example (West 1985, 122), and although there were 16 brooches from Mucking, excavations there were spread over 18 hectares (Hamerow 1993, 60-2).

One explanation is that some of the Eye brooches may have been made locally, given that a fragment of a lead alloy mould for a florid cruciform brooch was also recovered. The eight pins include four of copper alloy, three of bone and three of iron. Two of the copper alloy pins, as well as the three iron pins, are long and typologically early, whilst fragmentary pin shaft is swollen at its centre and belongs to the 7th to 8th century. Two of the bone pins can also be placed in this later period. The two pendants consist of a copper alloy stamped scutiform example of 6th century date and an elegant and rare silver pendant in the form of a stylised hand.

Functional Category: Dress accessories	Overall Quantity	Unstratified
Bead	8	4
Brooch	19	9
Wrist Clasp	13	10
Buckle and/or Plate	3	2
Pendant	3	0
Pin	8	4

Table 30. Early Anglo-Saxon Dress Accessories

The eight beads are all made of glass and are monochrome, mostly annular in form and blue or yellow in colour, although two could be described as brown within Brugmann's classification. The pairing of annular blue and brown beads is a feature of East Anglia in the early Anglo-Saxon period, within Brugmann's phase A1 of *c*.AD 450 – 530 (Brugmann 1994, 33-4). The dress accessories suggest that occupation of the site was centred on the 5th to mid-6th centuries, but with a small quantity of material also stemming from the 7th century, not necessarily continuing into the 8th century.

Object type: Brooches	**Quantity**
Cruciform	11
Bow Brooch	1
Annular	3
Disc	1
Small Long	1
Object type: Wrist clasps	
Form B7	6
Form B11	3
Form B12	1
Form C1	1
Indeterminate	2

Table 31. Early Anglo-Saxon brooch and wrist clasp forms

Personal possessions

Personal possessions include fragments of three combs and a comb case, two cosmetic implements, four fragments of girdle hangers, 24 knives and two sets of tweezers. Two of the combs are triangular, one belonging to Böhme's class D and the other with restrained linear decoration. Böhme class D combs can be dated to *c*.AD 375–475 in England (Böhme 1974, 123-4; Riddler forthcoming A) and the second triangular comb is also likely to be of fifth-century date, alongside a barred connecting plate stemming either from a zoomorphic barred comb or a comb case. The only cosmetic implement has a long silver shaft with a blade terminal and a fractured suspension loop and can be described as a pick or nail cleaner (MacGregor and Bolick 1993, 216). Both sets of tweezers are lightly splayed, indicative of a broad dating in the early Anglo-Saxon period. All four girdle hangers are fragmentary, consisting either of the lower, E-shaped terminal or parts of the main stem. Most examples of the object type are of 6th-century date (Hirst 1985, 87-8).

Most of the knives are fragmentary but fifteen can be assigned to type, following Drinkall and Foreman (1998, 279-84). Eleven are type A and there are single examples of types

B and D, with two knives of type E. The dominance of type A reflects settlement of the 5th to 6th centuries, whilst type D and E knives belong to the later phase, of the late 6th to 7th century. One implement is appreciably longer than the remainder and can be identified as a large knife, with a blade of around 150–160 mm in length, following the definitions of Härke and Siegmund (Härke 1992, 89-90; Siegmund 1998, 87). It has a type D blade and is another unusual item for a settlement, most examples coming from male graves in cemeteries of the late 6th to 7th century.

Functional Category	Quantity	Unstratified
Comb	3	2
Comb Case	1	0
Cosmetic Implement	1	1
Girdle Hanger	3	3
Key	1	0
Knife	24	13
Tweezers	2	1

Table 32. Early Anglo-Saxon Personal Possessions

Textile manufacturing implements (Table 33)

Practically all of the textile manufacturing implements that would be expected from an early Anglo-Saxon site were recovered, if only in small numbers. The two fibre processing spikes are relatively short at 85mm or less and may therefore have come from a flax heckle rather than a wool-comb (Walton Rogers 1997, 1730-1). Just three loomweights were recovered, one complete and the other two fragmentary. One is annular in form and the other two are intermediate, a type that is now dated to the 6th to 8th centuries (Walton Rogers 2007, 30). The four needles are made of pig fibulae, with the heads shaped from the distal end of the bone. They are common items across the entire Anglo-Saxon period. The five pin-beaters are all of the double-pointed form with two of the shorter type, two of the longer and one fragmentary (Riddler 1993, 117-9). Part of the blade survives from a set of iron shears whilst an iron rod, now bent and tapering at either end, could well be an example of a spindle, similar to an object from Sutton Courtenay that still retained its spindle whorl (Leeds 1947, 84 and pl XXII). Ten spindle whorls include one of antler, one of chalk, one of stone, three of lead and four ceramic examples, one of which is a re-used Roman sherd. All ten can be identified to type and include the common types of the 5th to 6th centuries (B1 and B2) as well as the later sixth to seventh century forms (A1 and A2) (Walton Rogers 1997, 24-6).

Functional Category	Quantity	Unstratified
Fibre Processing Spike	2	1
Loomweight	3	1
Needle	4	0
Pin-beater	5	3
Shears	1	1
Spindle	1	1
Spindle-Whorl	10	4

Table 33. Early Anglo-Saxon Textile Manufacturing Implements

Household items

As with textile implements, there are just a few household items, consisting of two iron latchlifters and sherds from three glass vessels, all of which are stratified. One of the latchlifters is complete whilst the other has fractured across its loop and the lower part of the stem. The glass from one vessel survives in poor condition. It is very thin-walled, possibly indicating that it comes from a claw beaker, although this needs to be confirmed. A sherd from a second vessel is yellow in colour with three raised trails and stems from the upper part of a claw beaker or cone beaker of 5th to 6th-century date (Evison 2000, 61-5; 2008, 11-13). A solid rim from a naturally-coloured vessel belongs to the palm cup and funnel beaker tradition of the 7th to 8th century (Evison 2000, 79-80).

Weights and measures

One of the most important early Anglo-Saxon finds is a copper alloy balance, which is incomplete, lacking a part of the central pivot. It corresponds in form with early Anglo-Saxon balances, all of which have otherwise come from graves and not settlements (Scull 1990). Although it is possible that it is a Roman balance (*cf* Tempel and Steuer 1999), it compares very well with other early Anglo-Saxon examples. They are long and thin implements with arms of circular section and a pivot with an attached sheet metal suspension mount, all of which are characteristics seen here. An iron scale pan was also recovered and it is inherently likely that some of the Roman coins found on the site were used as weights as part of a balance set, a common situation at this time. A plain, discoidal copper alloy weight (SF*1773*) may also belong to this set.

Literacy

The single item to belong to this section is a small, narrow strip of copper alloy, possibly from a belt plate, which includes a faint Runic inscription. The inscription includes three

characters, which can be transliterated as *guth*, or possibly as *gub*. Around twenty Runic inscriptions survive for the early Anglo-Saxon period (Hines 1990; 1991; Hills 1991). Five of these (excluding the new inscription) are from East Anglia, where they tend to be early in the sequence and date to the 5th century (Hines 1991, 64-5 and fig 1; Hills 1991, 49-54).

Craft and Industry

Non-ferrous metalworking

One of the significant elements of the material culture from the site lies with the evidence for ferrous and non-ferrous metalworking. The small finds include a copper alloy ingot (1668) and ten fragments of sheet metal decorated mounts, as well as several smaller fragments of strips. The decoration applied to these fragments, mostly in the form of punched dots, allows them to be identified as Anglo-Saxon. Beyond this small assemblage lie a further seventy-three fragments of sheet metal, some of which are certainly offcuts. Most of them are unstratified. In addition, there are also 40 fragments of copper alloy waste, including sprues, droplets and flows of metal. No ceramic moulds were found but a fragment of a lead alloy brooch model was recovered. Approximately twenty-five pieces of this assemblage are stratified and the remainder was found during metal-detecting. Some of the material is definitely of early Anglo-Saxon date, whilst other pieces, and particularly some of the sheet metal, could be late medieval. Lead alloy waste is also present in small quantities but once again, is largely unstratified and not certainly Anglo-Saxon.

Craft implements

The lead brooch mould noted above can also be mentioned in terms of craft implements, which also include several iron awls, two chisels and an adze. One of the chisels belongs to Westphalen's type 2, a small form of woodworking implement, whilst the other is a mortice chisel, also used in woodworking, as also is the adze, which belongs to her type 7 (Westphalen 2002, 47, 69 and 87-9). Iron adze heads were amongst the most important implements utilised by woodworkers and although they are relatively common finds in Scandinavia, few have come from Anglo-Saxon England (Westphalen 2002, 72-3). Nine fragments of antler include a burr trimmed in an early stage of spindle whorl manufacture, and seven fragments of comb making waste, as well as a discarded piece from antler pin manufacturing, a comparatively rare piece of waste material.

Functional Category	Quantity	Unstratified
Iron Awl	4	4
Lead Brooch Mould	1	0
Iron Chisel	2	1
Iron Adze	1	0
Antler Waste	9	0
Copper Alloy Ingot	1	0

Table 34. Early Anglo-Saxon Craft Implements and Waste

Weaponry

The weaponry is limited to two spearheads, one of which has a leaf-shaped blade and can be assigned to Swanton's type C1, whilst the other is virtually complete and belongs to type E1 (Swanton 1973). Within Karen Høilund Nielsen's typology, the first blade can be described as small lanceolate and the second as small angular (Høilund Nielsen 2007); both are typologically early forms, of the late 5th to 6th century.

Medieval and later objects

The medieval assemblage derives from metal-detecting and few of the objects are stratified (Table 35). The data in the table is slightly deceptive because the 'stratified' medieval material comes largely from contexts 0001 and 0002 and represents topsoil finds. The assemblage is dominated by fragmentary dress accessories of late medieval date.

A similar image is presented by the post-medieval items, where buckle frames are also prominent, although the range of items extends also to book clasps, buttons, chapes, cloth seals, lace tags and metal vessel fragments, all present in small numbers (Appendix 13). All of the items recovered are common finds from metal-detecting in rural contexts.

Category	Material	Object	Quantity	Unstratified
Dress Accessories	Copper Alloy	Buckle Frame	10	5
	Copper Alloy	Buckle Pin	1	1
	Copper Alloy	Buckle Plate	17	11
	Copper Alloy	Belt Mount	20	9
	Lead Alloy	Belt Mount	1	1
	Copper Alloy	Strap-End	11	6
	Copper Alloy	Bell	2	0
	Copper Alloy	Brooch Pin	2	2
Household	Copper Alloy	Ring	4	2
	Copper Alloy	Key	1	1
	Iron	Key	1	0
	Lead Alloy	Seal	1	0
	Copper Alloy	Vessel Repair Patch	2	0
	Lead Alloy	Vessel Repair Patch	2	1
	Copper Alloy	Wire	1	1
Weights and Measures	Lead Alloy	Weight	6	1
Transport	Iron	Horseshoe	7	3
	Iron	Horseshoe Nail	1	1

Table 35. Medieval objects by category and material

3.13.3. Significance of the small finds

Prehistoric

Only small fragments survive of the five prehistoric axe heads and they are not identifiable to type. The Iron Age material however includes part of a terret arrangement and a fragmentary loomweight, suggesting occupation in the vicinity, if not on the site itself. There is a possibility that the copper alloy objects were gathered for the purposes of recycling at a later date, but that would not explain the presence of the triangular loomweight.

Roman

The Roman material may have been gathered from the site to the north and its principal significance lies with the intriguing coin series (see below). A number of the coins have been pieced, whilst others may have formed part of a set of weights to accompany the early Anglo-Saxon balance. The presence of twelve fragments of Romano-British brooches may reflect an interest in the Roman site nearby, but they would also have formed a good source of metal for recycling in copper alloy working, which is attested

on-site. Roman material was abundant at the early Anglo-Saxon settlements of Bloodmoor Hill, Spong Hill and West Stow in East Anglia, all of which lie close to Roman sites (Lucy *et al*. 2009; Rickett 1995; West 1990), probably as a deliberate choice. Although these finds are Roman, they should be considered as part of the theme of how the early Anglo-Saxons used objects from the past.

Early Anglo-Saxon

The early Anglo-Saxon small finds represent approximately one half of the datable finds from the settlement and have the potential to assist in the understanding of the dating and nature of the settlement. Their potential can be explored under a number of headings.

The Structure and Changing Morphology of the Settlement

The quantity of early Anglo-Saxon small finds is small in comparison with West Stow and Bloodmoor Hill, both of which were larger excavations, but greater than other East Anglian settlement sites, including the Spong Hill settlement and Handford Road at Ipswich (Rickett 1995, Boulter in prep.). There is sufficient material to be able to view change over time. Fifth-century finds are present but there are also diagnostic objects of the late 6th to 7th century, suggesting that the settlement was in use for a period of 150–200 years. There are no items of late seventh to mid eighth century date and, with the ceramic evidence also in mind, it should be possible to provide a good estimate of the date at which the settlement began and ceased.

The spatial distribution of objects can also be plotted, albeit to a limited extent. The possibility that some of the topsoil finds came from surface deposits or midden dumps can also be explored. Deposits of this sort now appear to be widespread across early Anglo-Saxon settlements (Lucy *et al*. 2009, 116-21). Some of the objects clearly provide indications of activities including textile manufacture, metalworking and the working of skeletal materials. The latter should be correlated with faunal remains studies, particularly for the presence of sawn horn cores, which indicate horn working (Riddler and Trzaska-Nartowski forthcoming). Traces of horn may be present on some of the knives. Textile manufacturing implements are usually common finds on sites of this date but it has often proved to be difficult to locate them with any precision within settlements. The early processes of textile manufacture begin outside of the settlement, in any case (Walton Rogers 2007, 41) but it might be possible to locate the later stages. A recent attempt to follow the craft at West Stow forms a model for its exploration and

can be followed for Eye (Walton Rogers 2007, 42-4). At West Stow spindle whorls were widespread whilst other textile manufacturing implements were centred on specific buildings, and a similar image may emerge for Eye. Some of the enigmatic features visible on the site may possibly also be interpreted with the aid of the small finds.

Craft, Industry and Economy

The ferrous metallurgical residues have been considered separately, although it is worth noting that they are present and that iron smelting took place on site. East Anglian sites are now beginning to provide evidence for what appear to be early stages in raw material preparation prior to smelting, notably at Bloodmoor Hill and Thorpe St Andrews, where burnt pits filled with charcoal have been discovered (Lucy *et al*. 2009, 127; Riddler forthcoming B).

Non-Ferrous Metalworking

Eye is an important site for the early Anglo-Saxon period because of the evidence it provides for non-ferrous metalworking. This ranges from a lead alloy brooch model to decorated sheet metal, some of which are offcuts, as well as waste material from casting. Not all of this material is necessarily of early Anglo-Saxon date and it would need to be closely examined in order to distinguish between Anglo-Saxon and late medieval metalworking. It may be possible to locate an area of precious metalworking on site. The prehistoric and Roman copper alloy finds should also be included in this section, given that they are reasonably abundant and may have been gathered for re-use, although that is not the only explanation for their presence (White 1988). Roman material was abundant also at West Stow (West 1985, 122).

Lead brooch model fragments remain a rare commodity, with most examples stemming from East Anglia, few with any precise provenance (Mortimer 1994). Another example is known from the Middle Saxon high status settlement at Brandon. Their function is not entirely clear (Mortimer 1994, 31-2) and the Eye example, one of very few stratified examples to have been recovered and identifiable as part of a florid cruciform brooch, may assist in answering this question. Evidence for non-ferrous metalworking within early Anglo-Saxon settlements is sparse and the Eye assemblage is therefore particularly important. It has to be reduced to its early Anglo-Saxon component and viewed in relation to the site stratigraphy and phasing, but following that work an assemblage of reasonable size should emerge, forming an important component of the metalworking identified on the site. Whilst ferrous metalworking is well-attested in the

early Anglo-Saxon period, non-ferrous manufacturing evidence remains a rare commodity.

Trade

The copper alloy balance and accompanying scale pan are important finds, particularly for a settlement context. They were used to weigh Roman and Byzantine coins, as well as bullion, and the presence of both gold and silver objects at Eye may possibly be related to them; a copper alloy ingot was also found in a stratified context. The balance could have been used to check the weight of ingots produced on site, as well as dealing with the earliest currency circulating in England in the 7th century and the supply of Byzantine and Merovingian gold coins, an important source of raw material suitable for recycling as jewellery. This was a prestigious and possibly also juridicial mechanism of exchange, as argued by Scull (1990, 204), indicating that the settlement was of some status at this time, possibly because of its manufacturing capability. At the same time, there is a chronological gap between the production of florid cruciform brooches (attested by the lead mould) and bullion transactions. The earlier, 5th to 6th century evidence for object and textile manufacture is a little more mundane and centres around the production of combs, textiles and textile manufacturing implements, most of which would have been produced as required within individual settlements. Horn working is also likely to have occurred and it might be possible to locate these activities on site. No imported objects have been identified and the assemblage has a pronounced East Anglian character, as would be expected.

Settlement and cemetery

The Eye landscape includes both the settlement at Hartismere School and at least one nearby cemetery, which are known largely from metal-detected finds. These cemeteries include a very clear cremation cemetery, which lies within 500m of the settlement, and several ill-defined areas of possible inhumations. The proximity of cemetery and settlement follows a common pattern, established for Bloodmoor Hill, Spong Hill and West Stow in East Anglia, with several cemeteries also in the vicinity of the Handford Road settlement at Ipswich (Lucy *et al*. 2009; Hills, Penn and Rickett 1994; West 1985; Scull 2009). The impending publication of the synthetic volume for Spong Hill establishes it as a cremation cemetery of the 5th century, with a movement towards inhumation burial from the late 5th to early 6th century (Hills forthcoming). A similar sequence may prevail at Eye where, in a reversal to the situation at Spong Hill, it is the settlement that has been excavated, and not the cemetery. Correlating the two

elements of the landscape enhances both of them, even if the cemetery evidence stems from metal-detecting activity.

The local, regional and national context of the small finds

It has been noted recently that small finds from early Anglo-Saxon settlements vary greatly in their quantity, with large assemblages typifying some East Anglian sites (Lucy *et al*. 2009, 171). The Eye settlement is an important addition to the East Anglian corpus, which ranges in effect from sites with few objects, like those at Brettenham and Witton, to the prolific material groups from Bloodmoor Hill and West Stow (Mudd 2002; Lawson 1983; Lucy *et al*. 2009; West 1985). In terms of its quantity, Eye lies between these two extremes. It fits well into a developing pattern, however, both for the likely presence of surface deposits and for the proximity of an accompanying cemetery (and there are likely to be other cemeteries nearby). It is similar to Bloodmoor Hill, Mucking, Spong Hill and West Stow because it includes all of these elements. Other settlements, mostly excavated some time ago, have yet to be set into this pattern, as with Pakenham, for example (Brown *et al*. 1954). Yet in terms of the small finds it also differs in some respects from other sites of the region. It includes 5th century material, as at Spong Hill and West Stow, as well as late 6th to 7th century finds. West Stow continued into the 8th century, whereas Eye does not, although this assertion will need to be confirmed by analysis. Above all, it includes two elements that are much less prominent within some other settlements of the region. It has more of a manufacturing basis, particularly for its metalworking, and it also includes evidence for bullion and exchange, which is lacking from all of the other sites within East Anglia. Bloodmoor Hill produced an important collection of metalworking tools, alongside crucible fragments and ferrous metallurgical residues (Lucy *et al*. 2009, 249-65), but the emphasis there lies more with ironworking than with precious metals. A ceramic mould for a square headed brooch came from Mucking (Hamerow 1993, 62-3) but few other items relating to manufacture were found there.

It is also possible that regional distinctions might be observed within the small finds assemblage. Regional traditions in ceramics are reasonably well-established for the early Anglo-Saxon period and they have been observed in some categories of small find, and notably with jewellery and weapons. Walton Rogers has established regional distinctions in costume for this period and Eye lies within her Middle Anglia area (Walton Rogers 2007, 242-4 and fig 6.2). How far does that area extend and can the material

culture provide any indications of regional traditions? The potential is certainly there, particularly as Anglo-Saxon small finds from Suffolk have been correlated by West (1998) and the Eye assemblage can be compared against sites lying further to the west at Thetford and within Cambridgeshire, as well as Lincolnshire sites, which have been gathered together recently (Crowson *et al*. 2003).

Another important element of the assemblage lies with the relationship with the past. Late Roman objects occur within the finds assemblage and are prominent within the coins, but there are no settlement traces of that date and it is likely that the material was gathered from one or more settlements nearby. The important point here is that it is possible to view the use of this material at Eye, something that was not envisaged with other settlements, like Mucking for example (Hamerow 1993) and it has not been a prominent element in discussions of this material within grave contexts (White 1988). The proximity of settlements to Roman occupation is a common theme of the early Anglo-Saxon period in East Anglia but at Eye the use and re-use of earlier material can be explored, much as it has been for Bloodmoor Hill.

One of the possible areas of further research is to examine the metal content of some of the Anglo-Saxon finds and compare this with some of the Roman material in order to find out whether the Anglo-Saxons were re-using Roman copper alloy.

The small finds assemblage is an important one for the local area, where there have previously been published objects from grave assemblages at both Eye and Dickleburgh, but little else of early Anglo-Saxon date has been noted. On a regional basis important comparisons can be made with the other settlement assemblages of Suffolk – one of the most important counties for early Anglo-Saxon settlements – notably with Bloodmoor Hill and West Stow. There are also assemblages from Handford Road and Greyfriars Road at Ipswich, as well as Pakenham, Coddenham and Rushbrooke, most of which have either been published or are close to reaching that stage. As noted above, when the other components of the landscape are also considered, then Eye has a greater significance, extending beyond Suffolk and East Anglia to a national level.

Medieval and later small finds

Beyond the Anglo-Saxon assemblage there are small finds of medieval and post-medieval date, each extending to around 100 objects, with the remaining finds consisting largely of metalworking debris of copper alloy and lead. The medieval finds represent a typical metal-detected assemblage for eastern England and their significance is limited, although their existence should be noted. The post-medieval assemblage is similar and again reflects metal-detecting more than settlement.

3.14. The coins

Faye Minter

3.14.1. The assemblage

A total of 104 coins was recovered from the site. All the coins were recovered from soil deposits using a metal detector and were digitally plotted. A breakdown of the coins by period is shown in Table 36.

Period	No of coins
Roman	58
Medieval	25
Post-medieval (includes tokens)	16
Unknown	5
Total	104

Table 36. Coins by period

The unidentified coins include three blank lead discs, one copper alloy disc and one fragment. One item examined is definitely not a coin but a probable mount (SF1235).

3.14.2. Methodology

The coins were cleaned in distilled water where this helped legibility. All coins are listed on Appendix 15. The coins were weighed and their diameters recorded. Coins were identified using standard available books (Reece and James 1986, Wren 1995), but Roman coins were not identified to standard catalogue type (i.e. not LRBC ref).

3.14.3 The coins by period

Roman

Many of the fifty-eight Roman coins are extremely worn and incomplete. Only one is silver, a siliqua of Honorius (393-423 AD). In order to examine the chronological significance of the assemblage as a whole, the identifiable coins were grouped by Reece's 21 coin periods (Reece 1991, 2). Only 31 of the coins were identifiable to a Reece period. Although 100 is probably the best minimum sample, this smaller sample does still show some interesting trends.

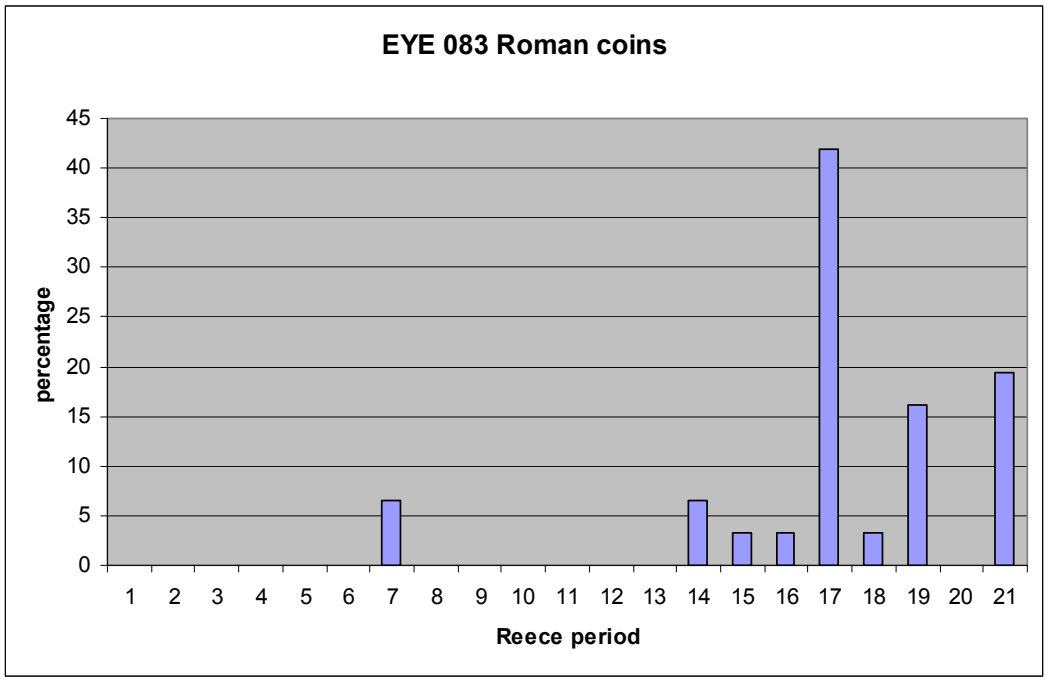


Table 37. Histogram style diagram showing the percentages of coin loss for each period (along the x-axis)

For comparison, Table 38 shows the British and Suffolk averages.

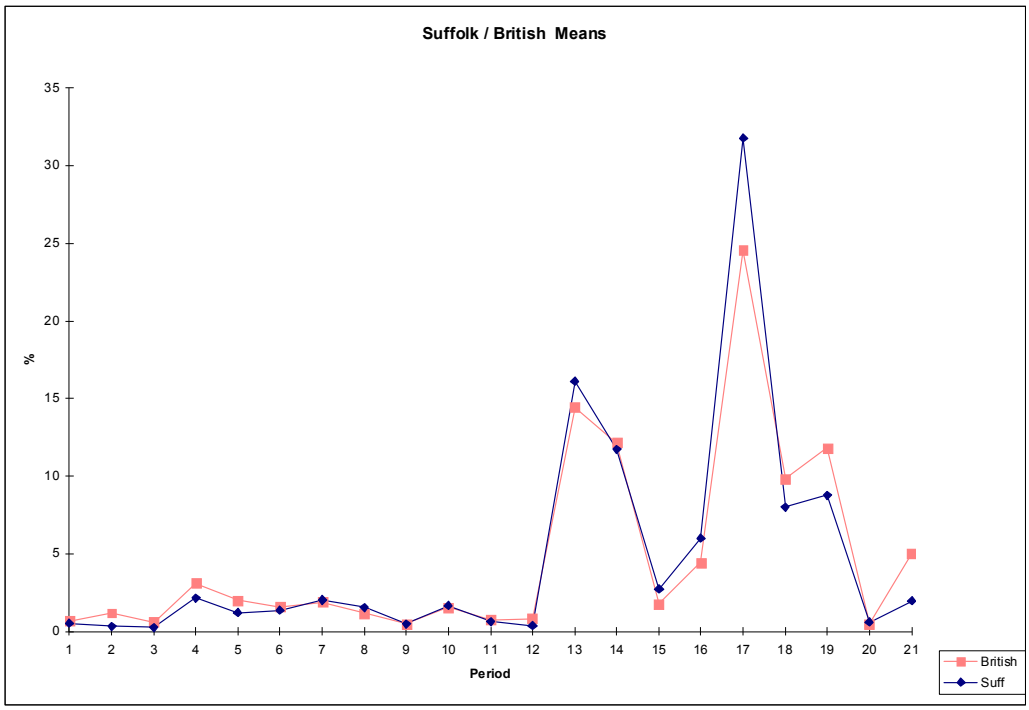


Table 38. Graph of British and Suffolk averages of coin periods

Coin periods

1	up to AD43		8	161	to 180	15	296 to	317
2	41	to 54	9	180	192	16	317	330
3	54	68	10	193	222	17	330	348
4	69	96	11	222	238	18	348	364
5	96	117	12	238	260	19	364	378
6	117	138	13	260	275	20	378	388
7	138	161	14	275	296	21	388	402

The typical pattern has a relatively low number of pre-AD260 coins, a sharp increase in the later 3rd century (Periods 13, 14) followed by a very strong peak in the 330's (Period 17) and a smaller one in the 360's (Period 19). In comparison, the coins from Hartismere High School have a small number of pre-AD275 coins, with finds from AD138 onwards (Period 7). There is then a peak, as expected, in the later 3rd century (group 14); it is worth noting that several of the unidentifiable coins are most likely to belong to the later 3rd century. There is then another larger peak in the 330s' (Period 17), again as expected. However, after this the EYE 083 coin group does not share the late 4th century drop in coin use common in the rest of Britain and often very marked in Suffolk. There is a very large peak from AD388-402 (Period 21), as almost 20% of the coins fall into this group, which is extremely unusual; only ten of the 140 British sites listed by Reece (1991, 48) have more than 19% in this period. Other sites in Suffolk with fairly high values include the villa at Castle Hill, Ipswich (IPS 015) and West Stow (WSW 002, West 1985, 76-77), but the percentage of coins in Reece Period 21 at these

two sites is still only just over 5%. Most similar is a site in Mildenhall (MNL 142, known from surface finds only) where there is a peak of 20% in Reece group 21.

Although both MNL 142 and EYE 083 have small coin samples (the former had only 52 coins), which may be distorting the results, the peak in Reece Period 21 is so large as to be significant. So, a peak in coinage in Reece Period 21 does occur elsewhere in Suffolk, and there is a general bias to late coin losses in the north-west of the County. That this chronological distribution occurs at EYE 083 is, therefore, significant.

Early Anglo-Saxon

There is no Anglo-Saxon coinage, presumably because the site pre-dates the production of coinage in the early 8th century. There are, however, six pierced Roman coins, SF 1056, SF 1244, SF1417, SF1420, SF1647, and SF1666. These coins are all copper alloy and date from between 286-335 AD. All the piercings are deliberate and consist of neat circular holes near to an edge. Perhaps most interesting out of this group are coins SF1417, an early Ae 1 size nummus, which is not only pierced but has been deliberately defaced, and SF1244, a radiate of Carausius, which has two adjacent piercings rather than the more normal one.

The Anglo-Saxons are known to frequently pierce Roman coins for use as jewellery or amulets, most commonly suspended as pendants at the neck. There is no obvious preference for particular types of Roman coins (Burnett 2005).

The pierced coins in the Eye assemblage may indicate that Roman coins were collected from the vicinity to be re-used as jewellery. It is interesting than none of the later coins, of which there is an unusually high proportion, are pierced and this may indicate that these coins were being used for a different purpose. It is again comparable to the evidence from West Stow.

Medieval and post-medieval

There are twenty-five medieval coins, which date to between1216-1509. There is one fragmentary continental penny of 13th-14th century date; the rest of the coinage is British. The most unusual feature of this assemblage is the high proportion of small change – denominations which are below that of a penny. Seventeen of the coins are farthings or halfpennies. This might suggest that the medieval presence is not simply

the result of manuring and that this site had a specific function, and was perhaps a market site.

The post-medieval coinage includes sixteen coins, ten of which are silver coins which date from Edward VI to George III. There are five copper alloy Nuremberg tokens, which are presumably stray loses as is the one 18th century lead token. There are also three lead blank possible tokens, one of which has two adjacent piercings possibly for suspension, the date of which is unknown. The post-medieval coinage seems most likely to represent manuring from nearby Eye or general losses.

3.14.4. Significance of the assemblage

Roman and Anglo-Saxon

The significance of the coin assemblage lies in the presence of the six pierced Roman coins.

The re-used Roman coins should be compared to similar assemblages from other sites of the same date range. In addition, the coins need to be considered with the other Roman artefacts from the site. The question of 'curation' of Roman material was highlighted as a research objective in the regional research framework (Brown and Glazebrook 2000).

A study of the distribution of the Roman coins may contribute to establishing which ones are likely to have been used during the Roman period as currency and those which are likely to have been removed from a nearby Roman site and re-used during the early Anglo-Saxon period.

The unusual pattern of Roman coin loss with a much larger peak in the period AD 388-402 than is found in most Suffolk sites is of interest. This chronological group forms almost 20% of the coins in total, and the significance of this should be considered along with other sites in the region which show a similar pattern. Does the assemblage inform us about the dating of the possible Roman site (EYE 094) to the north of the excavation area? Could some of the coins have been used as weights for the Early Anglo-Saxon balance as discussed in the small finds report?

Medieval and later

The most unusual feature of this assemblage is the high proportion of small change, which might indicate that this site had a specific function, perhaps as a market site. This hypothesis is worthy of further exploration, and a consideration of the other medieval small finds (such as the lead weights) may provide further support of this theory. Documentary evidence also may shed further light on this.

4. Quantification and Assessment of the Biological and Environmental Evidence

4.1 Introduction

This section of the assessment covers the biological material and environmental remains recovered from the excavation. Table 35 lists the types of material that have been included.

Ecofacts and environmental sample type
Human skeletal remains
Cremated bone (HSR & AB)
Animal bone
Fishbone
Amphibian bone
Eggshell
Molluscs
Charcoal
Coprolite
Phytoliths
Pollen
Chemistry and magnetic susceptibility
Soil micromorphology
Plant macrofossils

Table 39. Biological and environmental remains

4.2 Human skeletal remains

Sue Anderson

4.2.1. Introduction

A single skeleton was recovered from the excavation. The remains are assumed to be of Bronze Age date, but a radiocarbon date is required to confirm this.

4.2.2. Description of the skeleton

The individual is represented by fragments of the skull, neck, shoulders, arms, hands, pelvis, legs and feet. The bones are in fair condition with some surface erosion, but are very fragmented and few joints survive. With the exception of a few scraps of the

innominates, the torso has not been preserved. Very few measurements were recorded (see Appendix 16) and it was not possible to estimate living stature.

Based on the cranial indicators of sex, the individual was male. The overall robusticity of the skeleton appears to confirm this, but the pelvis is too poor to provide any further corroboration. The muscle markings are well-developed, but the size of the bones suggests that the individual was probably of below average height for a male of the period. Patterns of attrition on the surviving teeth and the presence of some degenerative changes suggest that the man was in the middle-aged or older age group (c.45+).

Non-metric traits were recorded where possible, but only lambdoid wormian bones and a left parietal foramen were recorded as present. Wormian bones are small, additional bones which form between the sutures of the skull. Their presence can be genetically or environmentally determined.

The surviving dentition indicates that the man had suffered from poor dental health. At least five teeth had been lost before death – the upper right first premolar, the lower right first premolar and first molar, and the lower left first incisor and canine. It is possible that the upper right first incisor had also been lost ante-mortem. Abscesses had formed around the roots of six teeth, and those that had been lost prior to death may also have been affected; this was evident on the upper right first premolar at least. Carious lesions were noted in the upper left first molar and the lower left second premolar and first molar; these were all in interstitial cervical positions where food tends to be trapped. Calculus (tartar) was considerable in the molar regions, particularly on the right side where the enlarged alveoli around the lower two molars must have caused a problem with chewing.

In addition to his dental problems, this individual had another condition which would have resulted in difficulty in both eating and talking. His left temporo-mandibular joint (TMJ) had fused and would have left him with only limited movement of the jaw. The remains of the joint were only partially preserved but there is no sign of infection or osteoarthritis. Ankylosis of the TMJ can have a congenital basis, but the normal appearance of the mandible suggests that this was not the case here. The other main cause is traumatic injury, but there is nothing in the surviving fragments to suggest a

healed fracture. Nevertheless this would appear to be the most likely diagnosis for the condition in this case.

Evidence for degenerative change is limited to the few surviving fragments of the neck, which shows some signs of osteophytosis of the joints. Other new bone growth around the muscle attachments of the elbows (enthesophytes of the radial tuberosities and the right lateral epicondyle of the humerus) probably represent minor tearing due to stress on the biceps and the muscles which control movement of the hand. There may be evidence for other trauma in the lower right shin and on the left scapula, but in both cases there is a possibility that the apparent areas of new bone growth were the result of differential erosion of the surfaces.

The left side of the mandible shows evidence for an unhealed cut (Pl. 33) which had resulted in part of the lateral surface becoming detached as a flake. The cut is 1-2mm wide and c.44mm long running diagonally from the inferior border of the mandible, suggesting an upward slicing motion with a sharp blade. The edges of the cut are straight and the broken end of the flake is the same colour as the surrounding bone, indicating that it was not a recent break. The cut did not penetrate through the bone and would not have entered the mouth. However the blow may also have resulted in the separation of the two sides of the jaw at the position of the left canine, but unfortunately the bone is poorly preserved and not all fragments are present. There is no other evidence of cuts elsewhere on the skull or skeleton, but the most likely areas to be affected (face, ribs, hands) are largely missing. It is likely that the cut was caused by direct violence rather than an accident, and it (or an unidentified associated injury) was probably the cause of death.

In summary, the skeleton represents a middle-aged or older male who was probably relatively short but well-built. Although he has some signs of degeneration, these were not major and probably did not cause him many problems. His greatest difficulty, in later life, must have been his inability to move his jaw very much. The resultant problems with chewing his food perhaps meant that he had to eat softer foods, such as gruel and porridge, which would have stuck to his teeth and caused calculus and caries to form. This may in turn have accelerated tooth loss. The degree of dental disease seen in this individual is certainly much greater than would be expected for the majority of individuals of the period. The deep cut in his jaw seems to indicate that his death was a

violent one, although the poor preservation of some parts of the skeleton makes it difficult to reconstruct the manner of his death.

4.2.3. Significance of the human skeletal remains

The human skeletal remains have been fully catalogued, and the crouched inhumation is considered to date to the Late Bronze Age period, although radiocarbon dating is required to confirm this. The inhumation will be discussed in association with other prehistoric evidence for the site. The pathology also is worthy of further discussion.

4.3. Cremated human bone

Cremated bone was recovered from a number of probably Early Bronze Age cremations. Most of this material was collected through the flotation of samples, from contexts 0816, 0840, 0844, 0851, 0857, 0860, 0870, 0964, 0965, 0966, 0967, 0968, 0971. Cremated bone was also recovered from 0513 alongside earlier Neolithic pottery. A small quantity of cremated bone was also present amongst the bulk finds (*c*.410g).

4.3.1 Significance of the cremated bone

Most of the cremated bone is likely to be Early Bronze Age in date, but selected fragments will be considered for radiocarbon dating to establish the dating. The material will be catalogued and discussed in terms of its provenance on site. It is possible that some of the burnt bone recovered from the bulk finds may be animal rather than human.

4.4. Mammal and bird bone assessment

Lorrain Higbee

4.4.1 Introduction

A large assemblage of animal bone was recovered from the site by hand during the excavation. In total there are 79 standard archive boxes (dimensions 46.5cm x 26cm x 18cm) of bone with a combined weight of 473.9kg. In addition further quantities of animal bone were retrieved from the residues of bulk soil samples which had been flotated.

The assemblage is quantified by period and weight in Table 40. Animal bone was recovered from all phases of occupation; the early Anglo-Saxon assemblage is the largest stratified group from the site and accounts for 87% of the total weight. Less than 3% is from prehistoric, Roman and later contexts and the remaining 10% is from

undated contexts. It is likely that the status of undated contexts will alter as post-excavation progresses.

Period	Total weight (kg)	% Total	Weight (kg) assessed sub-sample	% Assessed
Prehistoric	11.5	2.4	7.5	65
Roman	2.1	0.4	0.8	38
Early Anglo-Saxon	410.7	87	97.8	24
Medieval	0.1	0.02	0	0
Undated	49.3	10	5.1	10
Total	473.9	100	111.2	23

Table 40. Total quantity of animal bone and size of assessment sub-sample by period and weight

4.4.2 Methodology

This report follows general guidelines for the assessment of animal bone assemblages (English Heritage 2002; Payne 1991). A 23% sub-sample (by weight) was selected for assessment. The sub-sample includes material from 194 separate contexts and all periods and major feature types. Contexts containing residual pottery were also included in the sub-sample so that any obvious differences (e.g. preservation condition) with more securely dated contexts could be assessed.

The sub-sample was assessed by rapid scanning and the following information recorded by context in a spreadsheet using MS Excel:

1. The number of:
- countable bones per species (after Davis 1992),
- non-countable bones (e.g. shaft fragments, ribs and vertebrae) by size category
- unidentifiable fragments by size/general category
- bones, from which fusion data can be obtained
- mandibles/loose teeth, from which eruption/wear data can be obtained
- bones that can be measured to obtain information about the size and conformation of species
- bones that can provide sex information (e.g. canine teeth, horn cores and pelvis)
- gnawed, burnt and butchered bones
- mandibles that can be used to establish the prevalence of non-metric traits
- bones displaying pathological changes

2. The preservation condition and overall size of bone groups
3. The presence/absence of residual pottery

4. Notes on the general character of bone groups (e.g. concentrations of particular elements or types of waste).

4.4.3. Results

Bone recovery, preservation and residuality

Only hand-recovered bone was assessed; hand-recovered assemblages are typically biased in favour of large, easily observed fragments and therefore the bones from larger species (Payne 1992). It is not too surprising therefore that small bones (e.g. loose teeth and phalanges) and small taxa are uncommon (e.g. birds) or entirely absent (e.g. fish, rodents and amphibians). The sieved assemblage should redress this imbalance.

	Preservation condition				
	Good	Fair	Poor	Mixed	Total
No. Contexts	141	13	7	33	194
% Contexts	72.5	6.5	4	17	100
No. Contexts with residual pottery	35	3	0	8	46
% Contexts with residual pottery	25	23	0	24	72
No. Gnawed bones	167	6	1	33	207
% Gnawed bones	1.5	1.7	1	1.6	1.5

Table 41. Bone preservation, residuality and gnaw marks. Assessment sub-sample only. Percentages given for contexts with residual pottery and gnawed bones are based on the total by preservation category.

Approximately 73% of contexts in the assessment sub-sample were recorded as having 'good' bone preservation. For a context to be classified as 'good' almost all bone fragments were required to have intact cortical surfaces with no erosion. A small proportion (*c.*7%) of contexts were recorded as 'fair', this group includes contexts where at least half of the bones have such a degree of surface damage that some details are obscured and measurements are restricted. There were only a few (4%) contexts in the sub-sample with 'poor' bone preservation. Many of the bones from these contexts were damaged enough by breakage and attrition to prevent detailed recording of fine details such as butchery marks, however it was generally possible to classify the majority of fragments to taxonomic group and anatomical element.

The remaining 17% of contexts were classified as 'mixed', since they contain bones with several different states of preservation. This is usually an indication that bones were affected by different taphonomic factors prior to burial and may even be a sign of the presence of residual bone. However, there is no obvious correlation between preservation condition and the presence of residual pottery (see Table 33). Context type

does however appear have some influence on preservation, for example, bones from negative cut features are generally better preserved than those from sub-surface layers (e.g. Group 25). This is because bones from layers are more likely to have been rolled, trampled, reworked and re-deposited. Preliminary observations also suggest that preservation varies with depth, hence bone from spits near the base of deposits are better preserved than those from near the surface, some of which display signs of weathering on one side only. This type of variation on individual bones is probably the result of partial exposure.

Species represented

The sub-sample consists of a total of 12,938 bone fragments, of which 2339 (or *c.*19%) were identified to species. In common with most animal bone assemblages from sites in Britain, the assemblage from Hartismere is dominated by livestock species. Cattle, sheep/goat and pig bones account for 92% of all identified specimens (or NISP). Other identified species include horse, dog, cat, roe deer, red deer, hare, chicken, goose, duck, large corvid, crane and plover.

Species		Prehistoric	Roman	Early Anglo-Saxon	Undated	Total
Bos f. domestic	cattle	31	3	985	7	1,026
Caprovid	sheep/goat	14	2	538	21	575
Sus f. domestic	pig	22		582	9	613
Equus f. domestic	horse	4		84		88
Canis f. domestic	dog		7	3		10
Felis f. domestic	cat			9		9
Cervid	deer			37	2	39
Lepus sp.	hare			1		1
Gallus f. domestic	chicken			17		17
Anser sp.	goose	1		12		13
Anas sp.	duck			1		1
large *corvid*	raven/rook/crow			4		4
Grus grus	crane			2		2
Pluvialis sp.	plover			1		1
Total identified		72	12	2,276	39	2,399
large mammal		194	17	5,075	235	5,521
medium mammal		110	5	2,319	49	2,483
small mammal				1		1
mammal		143	7	2,320	38	2,508
bird				26		26
Total unidentified		447	29	9,741	322	10,539
Grand total		520	41	12,017	361	12,938

Table 42. Number of specimens identified to species (or NISP) from the assessment sub-sample by period.

Prehistoric and Roman

The animal bone from seventeen separate prehistoric contexts, including one of the roundhouses (Group 75), and six separate Roman contexts, mostly pit fills, were scanned as part of the assessment. The number of identified bones from these contexts is extremely small and of little analytical value. It is unlikely that this position will alter significantly when the remaining material is analysed due to the generally small size of the assemblages from these periods (see Table 40).

Early Anglo-Saxon

Twenty-four percent of the early Anglo-Saxon assemblage was scanned as part of the assessment. The sub-sample includes material from twelve sunken features, sixteen pits, three ditches, two layers, a hollow, the Holloway, and postholes associated with the aisled building 2623.

The sub-sample includes large numbers of cattle bones; indeed the number of cattle bones is almost twice that of other livestock species. Of the 2,105 identified bones from livestock species, 47% are cattle, 28% are pig and the remaining 25% are sheep/goat. These preliminary results suggest that the Hartismere assemblage has similar species proportions to the contemporary regional site at Bloodmoor Hill. This site has been interpreted as a possible early estate centre (Lucy *et al*. 2009) and various aspects of the animal bone assemblage (Higbee 2009), most notably the mortality profiles for livestock species, were significantly different from the self-sufficient village at West Stow (Crabtree 1990). A general shift in cattle and sheep slaughter patterns has also been noted between the Early and Middle Saxon period (Sykes 2006, 57). The analysis of detailed information such as age data is therefore vital to the interpretation of the Hartismere assemblage.

A brief description of the early Anglo-Saxon sub-sample is provided in the following sections:

Aisled posthole building 2623

The animal bone from five postholes was scanned, two of the postholes contain residual pottery but no difference was noted in bone preservation. There are between 1-31 fragments from each feature and only 12% can be identified to species. Almost all of the identified fragments are from livestock species, the only other fragments is a piece of

antler tine. Saw marks were noted on the deer antler and this suggests that the fragment is an off-cut from object manufacture.

SFBs 0013, 0261, 0692, 0713, 0740, 0845, 0876, 0980, 2009, 2503, 3108 and 3347

A total of *c*.4000 fragments from the fills of 12 SFBs was scanned. Thirteen contexts contained residual pottery and very few of these included bones with a mixture of preservation types. In general the preservation state of bone from sunken features is good and there are between 1-337 fragments per context, *c*.16% of which can be identified to species.

Species frequencies are similar to the sub-sample as a whole, with large numbers of cattle bones and slightly more pig than sheep/goat bones. Some calf and neonatal sheep/goat and pig bones were noted from contexts, as were several sheep horn cores and one goat horn core. Pig bones from the forequarter are also relatively common in relation to other body parts.

In general terms the material from sunken features is quite similar to that from layers and the Holloway, since it includes bones from a range of processes (e.g. primary butchery, consumption and antler working). There are however a few noticeable difference; the sunken-featured buildings include less horse bones and more bird bones that the other deposits types, and this might indicate differences in activities or waste disposal practices between areas of the site. Chicken and goose bones were most frequently recorded, other birds include crane (from Group 2503 and 3347) and plover.

Several pieces of red deer antler were also recovered from SFB fills and including a few sawn fragments from Group 2009. A fragment of from a bone pin or needle and a coprolite were also recovered from this feature.

Ditches 0120, 2116 and 2488

Eight separate fills from three ditches were scanned, residual pottery was noted from two of the fills but again there was no obvious difference in bone preservation. The quantity of bone from individual fills varied significantly from 1-115 fragments and 21% of fragments can be identified to species. Cattle bones are relatively common from ditch fills and many show signs of butchery. Other identified species include sheep/goat, pig, horse and chicken.

These features are dated as Anglo-Saxon or later.

Feature 0864

Twenty-four bone fragments from fill 0865 were scanned and only three cattle and one pig bone were identified.

Hollow way 2160

A large quantity of bone (*c.*4350 fragments) from 26 contexts was scanned. Six of the contexts include residual pottery and the preservation state of bone from only one of these was sufficiently different to suggest that some of the bone might also be residual. Bone preservation was generally good for most other contexts with the exception of material from the upper spits through deposits 2727, 2731 and 2733. The quantity of bone from individual contexts varied from 1-450 fragments however, more than half of all contexts produced over 100 fragments. Approximately 20% of fragments can be identified to species.

Species frequencies are the same as for the sub-sample as a whole, with large numbers of cattle bones and slightly more pig than sheep/goat bones. The full range of body parts are represented suggesting that the bone waste deposited into the Holloway is a mixture of material from different stages of carcass processing and consumption. Butchery marks were observed on *c.*13% of identified fragments and articulating sections of cattle vertebrae and ribs were noted. Sheep horn cores are also present in small numbers and there is a general over-abundance of pig bones from the forequarter relative to other body parts.

There are two slightly unusual aspects to the assemblage from this feature, the first is the relatively large number of charred and calcined bone fragments, and the other is the large number of horse bones (*c.*51% of the total). The burnt condition of some bones may have occurred during cooking or result from an attempt to dispose of waste material. Most of the horse bones from the hollow way are from limb extremities and many show signs of butchery. Some bones and teeth from immature horses were also noted.

Less common species from the hollow way include deer, dog, cat, hare, chicken and goose. Post-cranial bones from the hindquarter of a roe deer were noted, as were several large pieces of red deer antler. One of the antler pieces, a section of beam, has

flat facets where the brow and bez tines were removed with a saw. This reduction sequence is generally used to prepare flat sections of antler for the manufacture of combs (MacGregor 1985, 68-9).

Layers – Groups 25 and 3310 What are these contexts – are any of them burnt flint pits?

A large quantity of bone (*c.*2600 fragments) from 32 contexts was scanned, almost half of the contexts contained residual pottery but only a small number of these included bones with a mixture of preservation types. Most of the contexts with 'mixed' preservation were from spits near the surface of deposits (e.g. 2096 and 2227). Bone fragment counts per context range from 1-222 fragments, ten contexts produced over 100 fragments and *c.*23% of fragments can be identified to species.

Species frequencies are similar to those for the sub-sample as a whole and the proportion of horse bones is relatively high, however it is not as high as for the hollow way. The range of body parts is also similar to the hollow way, which would seem to indicate that there is little difference in the composition of refuse between these deposit types. Butchery marks were noted on *c.*17% of identified bones including fine knife cuts on some horse bones. A few cattle and sheep horn cores were noted, as were a small number of calf and neonatal pig bones. One roe deer metatarsal and a number of red deer antler fragments were also recorded. The red deer remains include a left frontal complete with attached antler. This evidence indicates that antler was retained from the carcasses of hunted deer and not just collected once shed. Other species identified from these layers include dog, chicken, goose, duck and large corvid.

Pits 0097, 0464, 0471, 0516, 0642, 0709, 0798, 0904, 2158, 2386, 2568, 2989, 3001, 3047 and 3075

A total of 613 bone fragments from a random sample of fifteen pits across the site was scanned, only two of the scanned contexts contained residual pottery and there was no noticeable difference in bone preservation, which was generally good for all contexts. The number of bone fragments per pit ranges from 1-117 and only pit 0464 produced over 100 fragments. There is a slight suggestion that marginally more sheep than pig bones were deposited into pits than other context types (e.g. layers), but overall cattle bones dominate the pit assemblages. Pit 3001 is noteworthy since it includes a relatively large number of burnt fragments, whilst pit 2542 contained the partial remains of a neonatal calf.

?Animal bone fragments and burnt bone

Small quantities of bone, some burnt, were recovered from many of the environmental samples, but some was identified from pit fills containing burnt flint. These were found in context numbers 0598, 0641, 0696, 0758, 0843 and 0872.

4.4.4. Significance of the animal bone

The prehistoric and Roman assemblages are relatively minor and it is unlikely that they will provide sufficient detailed information for interpretation. The early Anglo-Saxon assemblage offers the most potential for detailed analysis; it is large, well-preserved and from securely dated contexts.

The assessment results suggest that the early Anglo-Saxon assemblage includes some 48,000 fragments, of which *c.*19% should be identifiable to species. If the sub-sample results are truly representative of the assemblage as a whole then there are an estimated 9000 identifiable bones in the assemblage and a significant quantity of detailed information (e.g. age, biometric and butchery) available for study (Table 43).

	Assessment sub-sample				
	Prehistoric	Roman	Early Anglo-Saxon	Undated	Total
Age data - epiphyseal fusion	45	2	1,275	68	1,390
Age data - mandibles	6	1	254	3	264
Age data - loose teeth	6	1	174	5	186
Biometric data	16	4	626	15	661
Sex	1		32	2	35
Butchery/bone working	5	1	315	4	325
Non-metric traits	2	1	126	2	131
Pathology	1		1		2

Table 43. Quantity of detailed information available from the assessment sub-sample (23% of the total assemblage).

The assemblage has the potential to address the following points:

How does the economy of the site compare to other early Anglo-Saxon assemblages from the region and elsewhere? Is Hartismere a self-sufficient village like West Stow or part of a wider market based economy like Bloodmoor Hill?

How does the site economy compare to Late Roman (e.g. Icklingham) and Middle Saxon (Brandon, Wicken Bonhunt and Ipswich) assemblages. Are there any chronological trends in species frequencies and mortality profiles?

Is there any difference in bone preservation, species and body parts between deposits, feature types or areas of the site? Is the disposal of waste uniform across all areas of the site or is the waste from certain processes concentrated in particular features or areas? Can the animal bone provide any information about the possible activities associated with individual buildings? For example, is there any difference in the assemblages from large and small SFBs and is the antler working waste concentrated in particular buildings?

How does the size and conformation of livestock species compare to those in other geographical areas and/or time periods? For example, evidence for the introduction of large cattle has been recorded from the Middle Saxon site at Flixborough in Lincolnshire (Dobney *et al*. 2007, 238) but how do early Anglo-Saxon cattle compare and is there any indication of earlier improvements?

To what extent were wild resources exploited? Was venison an important addition to the diet or was shed antler more important as a source of raw material for object manufacture? How does the proportion of deer compare to other sites and other periods (see Sykes 2007).

What does the bird bone assemblage tell us about the status (see Dobney and Jaques 2002; Dobney *et al*. 2007, 224-9) of the site?

How does the pattern of butchery marks on large mammal bones (e.g. cattle and horse) compare with that on medium-sized mammal bones (e.g. sheep/goat/pig)? Is there a difference in technique or implement use? Is there any evidence for the processing of hides or marrow extraction?

What does the prevalence of non-metric traits and pathological conditions tell us about animal husbandry practices?

4.5. Fishbone and amphibian bones

Richenda Goffin

Small quantities of fishbone and amphibian bones were noted amongst the material recovered through the flotation of the environmental samples. These have not yet been separated out or examined for the assessment.

Amphibian bones were identified from deposits associated with SFBs 0326, 0692, 0713, 0740, 0845, 0980, 2009 and 3108, and aisled posthole building 2623. Other features containing this material include burnt flint pits 0596 (fill 0598) and 0872 (fill 0873), pits 2841 (fill 2842 - phased LBA), 3001 (fill 3002, phased Anglo-Saxon), 3087 (fill 3088 currently unphased), ditch 0120 (fill 3340 - Anglo-Saxon or later), and ditch 2488 (fill 0976 Anglo-Saxon or later), layers 2586 and 2587 in the colluvial deposit at the base of the slope. Amphibian bones were also found in several deposits within the hollow way 2160, notably 3019 (2m grid square), 3265 (large spread of animal bone), 3307 (spread of charcoal in 2m square, possibly upper pit fill), layer 3310 in 2m square 3313and in pit 3344 (fill 3345).

Full cataloguing of any fish bone present in the samples should be undertaken to contribute to our understanding of the diet and exploitation of the natural resources. What species were present, and are they marine, freshwater or estuarine? How does this tie in with the location of the site? Particular attention should be given to fish bone from Anglo-Saxon features uncontaminated by finds from other periods.

Is there any evidence for the processing of fish bones along with animal bone? Is there any significance in the spatial distribution of the fish bone assemblage on site? Is it present in certain SFBs for example? Is there any evidence in the artefact assemblage for fish hooks? How does this collection compare with other rural settlement sites such as Bloodmoor Hill? No fishbone was included in the report from West Stow.

Full cataloguing of any amphibian bones present in the environmental residues should also be undertaken, to supplement the animal bone report, and to provide a more complete picture of the background fauna during the early Anglo-Saxon period.

4.6. Eggshell

Eggshell fragments were identified in 3019, one of the deposits within hollow way 2160.

The eggshell fragment will provide information on species, and whether it was a bird which was kept for domestic purposes or was wild.

4.7. Charcoal

Fragments of charcoal were identified amongst the bulk finds from ten contexts. It was present in the plant macrofossil sample taken from the Early Bronze Age cremation. It is also present in many of the other samples, including many of the SFB fills. Ten samples associated with the burnt flint pits contained charcoal, and it was also identified in the samples from the floodplain deposit and the channel. Charcoal was also present as part of the debris associated with slag block 0735.

Identification of the charcoal from selected features will provide information on the range of taxa at particular times, for example the Bronze Age and early Anglo-Saxon periods. Charcoal from the Early Bronze Age cremation offers the possibility of providing information on the wood used for the pyre, and charcoal from other features such as the burnt flint deposits may provide information on the uses of the woodland resource during the early Anglo-Saxon period.

Fragments will be selected for radiocarbon dating from suitable features. Careful retention of charcoal and other organic material associated with the slag lump should enable adequate dating of the smelting activity to be established. Although oak charcoal was generally used as the fuel for smelting, other material such as straw and cereal grains could also make its way into the pit. Species that are more short-lived than oak can therefore supply more accurate dating (S Paynter, pers. comm.).

4.8. Coprolites

A single possible coprolite was identified from layer 2104 in trench 2581, which has not yet been studied.

This might provide faunal and parasitic and dietary information, although the dating may be very broad. Other faecal material has been identified in the bulk samples and this may merit further investigation.

4.9. Palaeo-environmental assessment

A palaeo-environmental assessment was undertaken by Birmingham Archaeo-Environmental which involved sedimentary coring focussed on the southern border of the excavation site, adjacent to the floodplain of the River Dove tributary.

Deposits of limited palaeoenvironmental value were encountered. The stratigraphy associated with the site was typified by colluvial deposits, which would have accumulated as a result of hillwash and hillslope erosion from the excavation site to the north. Hollow way features developed as a result of erosive processes and were shown to contain abundant archaeological material. These topographic features subsequently became infilled by continued hillslope processes (colluviation).

Anthropogenic activity on-site may explain the continued colluviation towards the tributary floodplain to the south. Occasional layers of well-sorted sands were also encountered within cores proximal to the floodplain-site boundary. These are likely to have been derived through channel migration and active fluvial sedimentation on the floodplain.

The full report can be found at Appendix 4.

4.10. Integrated assessment of chemistry and magnetic susceptibility, molluscs, phytoliths, pollen and soil micromorphology

Dr Richard I Macphail, Dr Mike Allen, Dr J. Crowther, Dr G. M. Gruise and Philippa Ryan.

4.10.1 Introduction and background

On the basis of field visits and discussions on site, an environmental assessment sampling strategy and investigation was suggested (Macphail 2007). In August 2007 a team from Birmingham Archaeo-Environmental cored the site and found hillwash colluvial deposits towards the River Dove. An assessment of the palaeoenvironmental deposits was also undertaken (Gearey and Hill 2007).

The assessment sampling strategy for chemistry and magnetic susceptibility, molluscs, phytoliths, pollen and soil micromorphology was refined after the excavation and selected monolith samples for phytolith, pollen and soil micromorphology assessments were collected and taken to the Institute of Archaeology, UCL, and subsampled for phytoliths, pollen and soil micromorphology assessments. Bulk samples for chemistry and molluscs were assessed by John Crowther (Lampeter) and Mike Allen (Warminster), respectively. Additional phytolith samples were sent to Philippa Ryan (UCL) from bulk macrobotanical samples provided by Val Fryer (Norwich). The following report is a synthesis of the work that was undertaken by the different specialists.

4.10.2 Samples and methods

Monolith Sample	Thin section	Depth	Context	Pollen Sample	Phytolith Samples (assessed)	Bulk Sample	Mollusc sample
Long section to floodplain (2581)							
388-1/2: 0-80 cm			2585		*15cm*	378	
				31.5cm	31.5cm		
				59cm	59cm		
388-2/2: 60-130cm	M388B	71-79.5 cm	2586	11cm(71cm)	11cm (71cm)	380	381
			2587		29.5cm (89.5cm)		
					45cm (105cm)		
Palaeochannel/ Hollow way							
Mon 0603-1/2 :0-60 cm			335	15.5cm	*15.5cm*		
	M603B	22-30 cm	335	26cm	26cm		
	ditto	ditto	338				
			338		37.5cm		
			366		55.5cm		
			3354			604	

Monolith Sample	Thin section	Depth	Context	Pollen Sample	Phytolith Samples (assessed)	Bulk Sample	Mollusc sample
Mon 0603-2/2 not sampled							
			3356				
Long-house (2651)							
502			2653		25cm		
	M502B	22.5-30 cm	2653			504	507
	M502C1	30-38 cm	2653				
			2653				
	M502D	42-50 cm	2653	43cm	*43cm*	505	
			2652				508
Cobbled Area (0442)							
622					10cm		
			366			No sample	623
	M622B	27.5-35 cm	366	29.5cm	*29.5cm*		
			367				624
SFB 3108 (3242)							
575	?				575/13cm		
	M575B	17.5-25 cm	3109		575/20cm	572	
	?				*575/30cm*		
	M575D	32.5-40 cm	3110			573	
			3108				577
SFB 0221 (0138)							
103					103/18cm		
	M103B	22.5-30 cm	139		*103/27cm*		
SFB 2503					*351*		
SFB 0713					*412*		
Monolith 106						No sample	
Iron Age Pit 2992			2994			510	515
			2993			513	516
Anglo-Saxon Pit 2169			334				629
Total samples assessed	9 (12)			8	9	9(11)	9

Table 44. List of samples for chemical, mollusc, phytolith and soil micromorphology assessment

The samples are listed in Table 44 Appendix 17 Table 1. Methods for the chemistry and magnetic susceptibility (Dr John Crowther; 9 samples), mollusc (Dr Mike Allen; 9 samples), phytolith (Philippa Ryan; 9 samples) and pollen (Dr G. M. Cruise; 8 samples) are given in the attached reports as appendices. Soil micromorphology (Dr Richard I Macphail; 9 thin section samples) followed standard methods of impregnation, thin section manufacture and study (see Courty *et al*. 1989; Goldberg and Macphail 2006; Stoops, 2003). As the main focus of this assessment is Saxon rural settlement archaeology, previous multi-disciplinary investigations of such sites in the UK and

Europe were consulted (Cruise and Macphail 1998, 2000; Guélat and Federici-Schenardi, 1999; Gustavs, 1998; Tipper 2004; see review in Macphail *et al*. 2006)

4.10.3 Results: Chemistry and magnetic susceptibility

Nine samples were analysed. Analytical data for each sample are presented in Appendix 17 Tables 2 and 3. Here, a broad overview of the analytical data is presented by soil property. Key features of the individual samples, particularly in relation to evidence of anthropogenic influence, are highlighted in Table 1 and the accompanying footnotes.

1. LOI (organic matter)

The samples are all largely minerogenic, with seven having a LOI < 2.00%. This suggests that the feature fills are relatively well-drained (thereby favouring organic decomposition) and/or were originally highly minerogenic (i.e. little organic material was incorporated). The two samples with a LOI ≥ 2.00% are from the fill of SFB 3108, with a maximum of 2.55% being recorded for context 3109 (the upper fill).

2. Phosphate (phosphate-P, Pi, Po, Pi:P, Po:P)

The phosphate-P (total phosphate) concentration exhibits wide variability (range, 1.10–4.18 mg g^{-1}). In view of the data distribution it seems likely that concentrations ≥ 2.00 mg g^{-1} are indicative of enrichment. In Table 2, concentrations of 2.00–3.49 mg g^{-1} have been categorised, somewhat arbitrarily, as 'enriched' and those of 3.50–4.99 mg g^{-1} as 'strongly enriched'. Interestingly, the highest phosphate-P concentration (4.18 mg g^{-1}) occurs in context 2585 (the upper context of the fill of feature 0025), which has quite a low LOI – which may indicate that some of the phosphate is bone-derived. The two (more organic) contexts from the fill of SFB 3108 are also strongly-enriched.

As is generally the case in archaeological contexts with a relatively low organic matter content, most of the phosphate is present in an inorganic form (phosphate-P_i:P range, 79.8–94.3%; Table 3). Thus, even though much of the phosphate enrichment is likely to be derived from organic sources (e.g. faeces, organic wastes in middens, etc.), a high proportion of the original organic phosphate has been mineralised as a result of decomposition processes.

3. Magnetic susceptibility (χ, χmax and χconv)

Magnetic susceptibility (χ) and maximum potential susceptibility (χ_{max}) both also exhibit quite variability, with ranges of 3.8–78.7 x 10^{-8} SI and 335–2600 x 10^{-8} SI, respectively. As noted above, in circumstances where χ_{max} is quite variable, fractional conversion (χ_{conv}) provides a much better indication of the degree of susceptibility enhancement. Only context 3110, the lower fill of SFB 3108, has a χ_{conv} (7.42%) which exceeds the 5.00% threshold that is generally taken as being indicative of enhancement through burning; and this is highlighted as being 'enhanced' in Table 2. The remaining contexts mostly have values < 2.00%, with only context 3109 from the upper fill of SFB 3108 having a notably higher value of 3.63%.

The observed variability in χ_{max} across the samples is likely to reflect differences in Fe content, with higher values being associated with more Fe-rich materials. In Table 2 the two contexts (both fills of pit 2992) with notably higher χ_{max} values are highlighted, along with one context (the middle context from the fill of feature 0025) which has a notably low χ_{max} – this low value probably being indicative of Fe loss, e.g. through gleying.

4.10.4 Results: Molluscs

Introduction

A series of nine selected bulk samples selected by Dr. Richard Macphail were received for processing and assessment of the preservation and potential of land and fresh-water molluscs. A series of detailed questions were posed by excavator. In particular these included the acquisition of information to characterise the landscape and land-use during both the main occupation periods and when the site appears to have been unoccupied. In particular, interest was expressed in any evidence of changing water tables and periods of flooding. Specifically any contrast between the main floodplain area (Sample 381) and the samples from the hollow way, 2160 (context no. 2418), Samples 623, 624 and 629) was requested (J Caruth pers. comm.).

The local soils are mapped as argillic brown earths, described as coarse loamy soils formed over chalky till (Melford soil association, Hodge *et al*. 1983). Clayey sands containing chalk, typical of sand covered Chalky Till occur on the north-west side of the site where Iron Age and Saxon settlement features were exposed.

The samples are listed in Table 45.

Phase	Feature type	Feature	Context	Sample
Earlier Iron Age	Pit	2992	2993	516
Earlier Iron Age	Pit	2992	2994	515
Early Anglo-Saxon	Posthole	2651	2653	507
Early Anglo-Saxon	Posthole	2651	2652	508
Early Anglo-Saxon	SFB	3108	3108	577
?Early Anglo-Saxon	Pit	2169	2170 in sq 0334	629
?Early Anglo-Saxon	Deposit over cobbles	2160	0366	623
?Early Anglo-Saxon	Deposit over cobbles	2160	0367	624
Undated	river wash/spread	0025	2586	381

Table 45. List of features from which molluscs were assessed

Methods

Due to the weakly calcareous nature of the deposits (R Macphail pers. comm.) samples of 2kg, (i.e., double the normal size (Evans 1972)) were processed following standard methods outlined by Evans 1972. Samples were pre-weighed and added to water. No dissaggregant was necessary. Samples were agitated and flot decanted on to sieve of 0.5mm mesh aperture, and the residue fractions through a nest of 5.6mm, 2mm, 1mm and 0.5mm mesh apertures. Residues were dried and weighed (Appendix 17 Table 1*).

The flots were sorted under a stereo-binocular microscope at x10 and x 30 magnifications for mollusc fragments, and the residues were scanned.

All artefacts from the 5.6mm residue fractions were extracted. Flots and artefacts are returned to SCCAS. All excess soil, and sorted residues have been discarded.

Results

No mollusc apices, apertures or fragments were recorded in the nine flots with the exception of the burrowing, and thus palaeo-ecologically insignificant species, *Cecilioides acicula.* This was present in varying abundancies in most samples.

4.10.5 Result: Phytoliths (See Appendix 17 for relevant tables and graphs)

Phytolith Percentages

Graph 1 in Appendix 17 shows the percentage of phytoliths present in each of the samples (see Appendix 18 phytolith report). The average phytolith percentage per sample is 2.2%. The percentage of phytoliths between samples is varied but, with the

exceptions of the two bulk samples, the variation is too low to be of interpretative value. The highest phytolith content came from the fill of an SFB found right on the edge of the colluvial deposit (351 - SFB 2503). This contrasts to sample (412 - SFB 0713) which has the lowest phytolith content and which came from the fill of a SFB based on the east edge of the site.

Phytolith counts

Phytolith counts are displayed in Appendix 17 Table 4. All phytolith forms present are single cells. Similar types of phytoliths are found in all the samples apart from sample (388 1/2) which has a lower diversity of phytolith forms. The absence of some phytolith forms in this sample may relate to post depositional processes: some phytolith shapes, such as the blocky irregular psilate (plateys), are more durable than others.

There are high numbers of Cyperaceae (sedge) cone shaped phytoliths in all the samples. These cone shaped phytoliths are diagnostic to sedges. Some of the phytolith types detailed in Table 2 are relatively undiagnostic and occur in several plant families, however some commonly occur in sedges (these are indicated in Table 2) and it is possible that they are produced by the same plants which produce the cone shaped forms. High numbers of grass phytoliths are also present (Table 4). The high numbers of crenate (trapezidform polylobate) forms present are not found in cereals and indicate a wild grass which is coming onto the site. Bilobe shaped phytolith forms (including polylobate and cross shapes) are not found in the Pooidea grass sub-family – Pooidea grasses favour temperate environments (Twiss 1992) and are the dominant grass sub-family found in the UK. These bilobe forms are likely to be from a wetland grass.

Phytolith forms

The abundance of certain phytolith forms are compared in a series of graphs.

In Graph 2 (Appendix 17) the relationship between the sedge cone phytoliths and the dendritic long cells is analysed and amounts of these phytoliths compared between samples. Dendritic cells are common in the glumes of a number of grasses, including cereals, and high numbers of these cells in specific contexts may indicate activity areas related to cereal processing/consumption. Since the dendritic cells are found in a number of the samples (including 388 2/2), the relationship between these and the sedge cones is investigated to determine whether the dendritic cells may be coming on to the site together with the sedges.

In Graph 3 amounts of crenate (trapezidform polylobate) forms and long cell dendritic phytoliths are compared. The correlation co-efficient between the sedge cone and dendritic long cells is 1 suggesting that they are coming onto the site together. The correlation co-efficient between the sedge trapezidform polylobate (crenate) and the long cell dendritic phytolith forms is also 1 again suggesting that they are also coming onto the site together.

Interpretation of phytoliths

Although there is some variation in levels of certain phytolith forms between samples, this appears to be connected to the differences in phytolith percentages between samples. There is an overall low diversity of phytolith forms present suggesting that phytoliths are mainly coming from a limited number of plant types. The low number of phytolith types, and the possibility of these being from sedges and a limited range of wild grasses may in part reflect a bias towards wetland species. In wetter soils a higher amount of soluble silica in groundwater may accelerate the production of phytoliths (Rosen 2005). However, the high numbers of sedge phytoliths indicates that they are common to the area. Dendritic phytoliths are common in the glumes of certain grasses, including cereals. The relative abundances of dendritic phytoliths between samples on site may be a useful indicator of possible cereal processing or storage areas. However, the possibility of this may be affected by the types of cereals present: with free-threshing varieties grains will be stored clean and high numbers of cereal glume phytoliths would not necessarily be present. Additionally, the high correlation co-efficiency between the dendritic cells and the sedge cone cells, as well as the crenate (trapezidform polylobate) forms, suggests that they are possibly from a wild wetland grass. Possible reasons for the high amounts of sedges/wetland grasses coming onto the site include the possible use of peat as a fuel (see soil micromorphology) or their potential use for craft or construction purposes.

4.10.6 Results: Pollen

The results of the eight pollen assessments are presented in Appendix 17 Table 5. In general pollen is very sparse and preservation is poor in all samples from the site. As a consequence of that, only a relatively small number of identifiable pollen types were observed. These are predominantly herbaceous types, with arboreal taxa in particular, being very rare. In one sample (502) from the aisled building, no identifiable pollen was

observed, while only poorly preserved, resistant pollen types (Lactuceae - dandelion type) were observed in the sample from the cobbled area (443). The samples from the 'palaeochannel' (core 603 1/2) were similar containing only sparse, poorly preserved, relict Lactuceae. The long section to the wetland (cores 388 1/2, 2/2) provided the only countable pollen from a sample near the base of the sequence (89.5cm), where presumably, the higher water-table permitted the preservation of some organic matter. Here, the pollen spectrum is also dominated by Lactuceae, along with a few other herbaceous and spore types. Slightly higher in the sequence (71cm), the pollen is not countable, but may be noteworthy for the presence of two very different pollen preservation characteristics. Firstly, the poorly preserved Lactuceae as found elsewhere on the site, but also a few very well preserved grains of *Alnus, Corylus t.* and Apiaceae, possibly suggesting more than one provenance for the pollen grains (bark microfragments are present in the palaeochannel/hollow way). Further up in this sequence, the pollen is similar to elsewhere on the site.

4.10.7 Results: Soil micromorphology

The soil micromorphology characteristics of the nine thin sections are presented in Appendix 17 Table 6 and illustrated in Figs.1-7. Findings are summarised below:

Sample 388B: Long section to floodplain (2581)

Decalcified dusty and fine charcoal-rich anthropogenic soil accumulation, with pedofeatures indicative of it being a colluvium/possible ploughsoil colluvium (Fig 1); affected by inputs of phosphate.

Sample 603B: Hollow way/sunken trackway (2160)

Relatively humic and ashy fill with many anthropogenic inclusions (including bark – wood working/pollen evidence of trees – see above) from all kinds of possibly intensive middening/ waste disposal – hence much fine fabric; inputs of dung or peat (see phytoliths)?

Sample 502B: Aisled Building (aisle posthole 2651)

Humic and anthropogenic soil infilling that *may* record later building/location history, but seem to be consistent with lower fills; ashy residues down profile.

Sample 502C1: Aisled Building (aisle posthole 2651)

Relatively humic fine fill with anthropogenic inclusions of domestic, hearth, and human waste origin – possible dung inputs (Figs 2-3).

Sample 502D: Aisled Building (aisle posthole 2651)

Lower posthole fill showing packing using clayey till soils that had been rooted/exposed; infill includes coprolitic material.

Sample 622B Cobbled Area (0442)

Trampled and compacted deposit, with small amounts of phosphate inputs; hard-standing of flints embedded in muddy surface formed from use of chalky till?

Sample 575B: SFB 3108 (3242)

Lower fill rich in fine burned plant residues, including abundant phytoliths and possible example of silicified but unfortunately undiagnostic plant material (Ryan pers. comm.; Figs 4-5); anthropogenic inclusions, and amorphous organic matter (dung or 'peat'?; see phytoliths); much secondary phosphate; fill differs from the posthole fills of the aisled building.

Sample 575D: SFB 3108 (3242)

Lowermost fill differs from that in aisled building; phytolith plant residues – crop processing?; amorphous organic matter from dung or peat; secondary phosphate inputs and example of probable dog coprolite with void pseudomorphs of fur/hair/ wool (Figs 6-7)(?).

Sample 103B: SFB 0221 (0138)

Junction of SFB fill and fragmented clayey subsoil (i.e. cut of sunken feature); apparently fewer anthropogenic inclusions and phytoliths compared to SFB 3108; secondary phosphate.

4.10.7 Significance of the Assemblage

Nine bulk (chemistry and magnetic susceptibility), nine mollusc, 9 phytolith, eight pollen and nine thin section (soil micromorphology) samples were assessed (see Appendix 17 Tables 1-6; Graphs 1-3, Figs. 1-7). The assessments found no mollusc potential, only little pollen potential (one sample of 8), but useful bulk (chemistry and magnetic

susceptibility), phytolith and soil micromorphological results were produced. The potential of the samples is discussed below by major site period.

Earlier Iron Age

The lower fill (2993) of pit 2992 is phosphate-enriched, and magnetic susceptibility implies much secondary iron deposition, the last consistent with water table fluctuations at the site. A soil micromorphological study would show what materials or pedological features are recording this phosphate enrichment and probably be able to suggest what may be the source of this enrichment – dung, ash, bone debris(?).

Long section to floodplain (2581)

A coring survey by Birmingham Archaeo-Environmental defined hillwash colluvial deposit accretion towards the River Dove (Gearey and Hill 2007). Monolith series 388 found strong phosphate enrichment in Context 2585, with 2586 below recording a possible well-sorted ploughsoil colluvial deposit (soil micromorphology; Appendix 17 Fig. 1) and pollen that included noteworthy examples of well-preserved woodland pollen and Apiaceae along with ubiquitous Lactuceae; high phytoliths numbers are recorded (likely wetland grasses and sedges). Here phosphate features included secondary Fe-P nodules and vivianite, possibly derived from overlying phosphate-rich 2585 deposits. The suggestion that the latter may relate to a 'track/compounded surface' can be tested through soil micromorphology (new M388A); the lack of phytolith diversity, that may relate to post depositional effects, may also be consistent with trampling impact. The wetter lower part of 388 at 89.5 cm contains the only countable pollen at Eye and should be analysed (1 pollen count 388/2, 89.5cm) as it may provide more data on the presence of wetland plants; it is also suggested that this level be analysed through soil micromorphology and bulk studies (new x2587; new M388C) in order to ascertain the origin of these deposits – are they an earlier plough soil colluvium? This is confusing, without knowing the contexts.

Hollow way/Sunken trackway (2160)

One of the lower contexts (3354) shows phosphate enrichment, while higher up (Context 0335; M603B) the deposit is dominated by humified organic matter, phytoliths and moderately fine ashy material, along with all other kinds of middening material (bone, coprolites, charcoal). It is not obvious whether burned peat and/or dung is present, and this requires further analysis, but again phytoliths indicate a wetland source of grasses and sedges.

It appears that the uppermost fill (0335) relates to middening, and it is suggested that additional samples are analysed to characterise this more clearly, and the underlying accumulation (new M388A and x0335; M388C and x3356), to see if the lower fills relate more to dumping than colluvial/trampled spreads and record disposal of different waste materials/activity.

Early Anglo-Saxon aisled building 2561, posthole fill 2653

This fill was extensively assessed – fill material recording the use of an Anglo-Saxon posthole building (not an SFB) is all but unique on early medieval sites (Reynolds, 1995). Although not recognised as being enriched in phosphate chemically, the fills (thin sections M502B, 502C1 and 502D) include much burned material (e.g., non-iron stained flint; charcoal and rare examples of aggregated ash; Appendix 17 Figs. 2-3), burned bone, coprolites and clayey fragments of likely domestic origin. The presence of humified organic matter may imply the occurrence of dung – a ubiquitous background component even in 'domestic' environments in early medieval occupation floors (Macphail *et al*. 2004, 2007a, b; Milek, 1997, 2005). These fills appear to be different from the SFB fills and other contexts; for example they seem less phytolith-rich compared to the SFB fills – a finding consistent with the quantitative phytolith data (Appendix 17 Graph 1, Table 4).

If there are no more bulk samples available, and only this one monolith, it can be suggested that two new thin sections (new thin sections 502A and 502C2) be made and analysed to make sure no potential data is missed from this unique opportunity to study material from this building (cf. other posthole sample studies at Neolithic and Iron Age White Horse Stone, Kent and LBA/EIA Llanmaes, Gwent; Crowther, 2005; Goldberg and Macphail, 2006, 255-256; Macphail, 2006; Macphail and Crowther, 2004). At present our investigations of early Anglo-Saxon buildings are biased by SFB's (see below) – and these have separate and different roles to posthole (and presumably aisled) buildings (e.g. Tipper 2004). The soil micromorphology, bulk and phytolith assessments appear to reflect this difference.

Cobbled Area 0442 (622)

Moderately phytolith-rich deposits associated with this are compacted and show evidence of trampling and small amounts of phosphate input, with flints and chalky till employed to produce hard standing (M622B). However, it is not exactly obvious what

this area was used for/associated with. This area can be better characterised through an additional thin section study (new thin section 622A) and associated bulk analyses (x0366 and x0367).

SFBs

SFB 3108: Two thin section (M575B and 575D) and associated bulk analyses (x3109 and x3110) record microfabrics and inclusions, and chemical/magnetic signals that differ from the posthole fill of the aisled building; amounts of organic matter and phosphate are notably higher, and enhanced magnetic susceptibility in 3110 reflects the amount of burned material in this fill (Appendix 17 Figs. 4-5). Here burned and ashy residues that are phytolith-rich (as recorded in Graph 1, and thus more akin to deposits in the palaeochannel/hollow way) contain humified organic matter, which may include both peat and/or dung. Phytolith assessment of SFB fill 0351 (0351 is not an SFB fill) on the edge of the colluvial deposit found the highest concentrations of phytoliths at Hartismere School. Such fills should provide clues to major activities on site, and are probably not simply residues from domestic floors (c.f. aisled building where the posthole fill is relatively phytolith-poor). In addition, they include soil clasts that should aid our understanding of the soils and soil conditions of the site, for example in addition to chalky till and weathered chalky till, an argillic Bt horizon had formed in the sands of the area (see Appendix 17 Figs. 6-7). In addition, probable dog coprolites can provide information of general activities and background – the illustrated examples show the ingestion of silt (drinking) and 'fur' from scavenging (Appendix 17 Figs. 6-7). At West Heslerton, North Yorkshire, a soil micromorphology and pollen study of dog coprolites confirmed the scavenging of, probably, woolly carcases and ingestion of cereal material (Macphail *et al*. forthcoming).

The thin sections from SFB 3108 are worthy of more detailed study.

SFB 0221: The assessment of thin section M103B showed a similar fill to that of SFB 3108, but with less bone, organic matter and fewer phytoliths (see also Appendix 17 Graph 1). Further study and an investigation of the overlying fill (new thin section M103A) is recommended before making exact comparisons.

Some conclusions

As more SFBs are studied internationally, the understanding of their fills and their significance to Anglo-Saxon archaeology and to local site conditions, activities and even phasing, improves (see review in Macphail *et al*., 2006). Recent studies of SFBs on sands over chalky till at Bowthorpe, Norwich (Macphail and Crowther, 2008) add to this database.

The SFB fills at Hartismere are different in detail and fine fabric character from those encountered previously, and may reflect the nearby wetland for grazing, use of peat for fuel (and plants for roofing, processing/craft activity?). The phytolith assessment appears to have found little evidence of cereal processing and the weight of evidence suggests wetland grasses and sedges dominate their fills. Moreover, similar material may be found as 'midden' spreads in the hollow way.

Further SFB's from different areas and phases, assuming their phasing can be established, with possibly differing fills and history may be worth investigating through soil micromorphology and complementary bulk analyses. The posthole fill material from the aisled building gives potential unique insights into the use and nature of domestic space, and how this differed from how SFB's functioned. Lastly, the 'long section to floodplain' may provide a record of land use.

4.11 Plant macrofossils

Val Fryer

4.11.1 Introduction and method statement

The excavations at Eye revealed an extensive archaeological landscape. Although most features were of early Anglo-Saxon date, some earlier features were also recorded including a number of Early Bronze cremations and pits and postholes of probable Iron Age date. Samples for the retrieval of the plant macrofossil assemblages were taken from across the excavated area, and 143 were submitted for assessment, which represented sub-sampling of the majority of dated samples.

The samples were processed by manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. The dried flots were scanned under a binocular

microscope at magnifications up to x 16 and the plant macrofossils and other remains recorded are listed in Appendix 18, Tables 1–12. Nomenclature within the tables follows Stace (1997) for the plant macrofossils and Kerney and Cameron (1979) for the mollusc shells. With the exception of a very small number of mineral replaced macrofossils, all plant remains were charred. Modern contaminants, including fibrous roots and seeds, were present throughout.

4.11.2 Results

Cereal grains/chaff, seeds of common weeds and tree/shrub macrofossils were present, mostly at a low to moderate density, within all but 35 of the assemblages studied. Preservation was generally good, although a number of the grains were puffed and distorted, probably as a result of combustion at very high temperatures. Macrofossils within a number of assemblages were also heavily encrusted with mineralised concretions, although in most instances, this did not impede the identification of the remains.

Oat (*Avena* sp.), barley (*Hordeum* sp.), wheat (*Triticum* sp.) and rye (*Secale cereale*) grains were recorded, with barley and wheat occurring most frequently. Chaff was exceedingly rare, although bread wheat (*T. aestivum/compactum*) type rachis nodes and spelt (*T. spelta*) glume bases were recorded within a total of fifteen assemblages. A single fragmentary cotyledon of an indeterminate large pulse (Fabaceae), noted within ditch 2418 (Sample 288) was the only other food plant remain recorded.

Weed seeds were generally scarce, with most occurring as single specimens within an assemblage. All were of common segetal taxa and grassland herbs including brome (*Bromus* sp.), small legumes (Fabaceae), black bindweed (*Fallopia convolvulus*), goosegrass (*Galium aparine*), mallow (*Malva* sp.), grasses (Poaceae) and dock (*Rumex* sp.). Wetland plant remains, comprising single specimens of sedge (*Carex* sp.) and bur-reed (*Sparganium erectum*) fruits, were recorded from only two samples. Hazel (*Corylus avellana*) nutshell fragments were also recorded, although rarely at a high density. Charcoal/charred wood fragments, including some larger fragments >5mm, were present throughout. The pieces from fills within SFB 326 (Samples 142 and 143) and cremation pit 0815 (Samples 254 and 255) were noticeably very abraded, possibly indicating long exposure prior to burial, whilst fragments within cremation 0850 (Sample 206) were very heavily burnt, with a characteristic flaked appearance. Other plant

macrofossils were scarce, but did include pieces of charred root or stem and indeterminate culm nodes, tuber fragments and a thorn.

Of the fragments of black porous and tarry material noted within the assemblages, most were probable residues of the combustion of organic remains (including cereal grains) at exceedingly high temperatures. However, some pieces noted within the cremation deposits had a different texture and it is, perhaps, more likely that these were products of the cremation processes. Small fragments of bone, some of which were burnt, were noted within most of the assemblages studied. In some cases it was unclear whether these were derived from the domestic/industrial/funerary practises carried out on site, or whether they were a possible product of the use of bone meal as an agricultural fertiliser in the recent past. Small fragments of coal also appeared within most assemblages, and it was assumed that these were almost certainly intrusive within the contexts and derived from steam ploughing. Other remains were scarce, but did include minute pellets of burnt or fired clay, small fragments of mineralised faecal concretions, a bead and a possible small flake of amber. White mineral concretions, possibly derived from the heating of mineral rich water, were noted within a number of the sunken features. Small mammal or amphibian bones were present throughout, but in most instances, their condition suggested a relatively recent date.

4.11.3 Discussion of the assemblage

For the purposes of this discussion, samples have been grouped by building/group number or by feature type.

SFB 0013 (0014) Appendix 19 Table 1

Nine samples were taken from fills within the sunken feature and from an associated posthole (1250). Cereal grains are present throughout, along with two bread wheat type rachis nodes, seeds of segetal weeds and grassland herbs and hazel nutshell fragments. Bone fragments are relatively common and mineralised faecal concretions are present within five of the samples. Charcoal fragments are common within all but the posthole assemblage. It would appear most likely that these assemblages are primarily composed of small quantities of domestic detritus and/or hearth waste, much of which possibly fell through the flooring of the structure into the space beneath. The faecal residues may have been incorporated within the fills after the building went out of use, as they also appear within the posthole fill.

SFB 2009 (Group 2052) Appendix 19 Table 2

Fifteen samples were taken, five from fills within the sunken feature and ten from fills of associated postholes. Although grains, weed seeds and nutshell fragments are present within the assemblages, the density of macrofossils is very low and the assemblages are primarily composed of small quantities of charcoal. In contrast to the probable domestic assemblages from SFB 0013 (see above), it would appear far more likely that the material within SFB 2009 is largely composed of scattered or wind-blown refuse, much of which possibly accumulated after the structure went out of use. No particular function for the building is indicated, although it may well have acted as a workspace for a small trade or industry. It is, perhaps, of note that a high proportion of the macrofossils were heavily coated with possible iron rich orange/brown mineral concretions.

SFB 191 (238) Appendix 19 Table 3

The five samples taken from fills within the sunken feature all produced very small assemblages, the density of material within which again possibly indicates that the building served a non-domestic function. Of especial note within these assemblages is the occurrence of pieces of white mineral concretion (most notably within Sample 58 (240), which may possibly indicate that some process involving heated water was conducted.

SFBs 0261, 0980 and 2503 and ditch 2503 (0262, 0980 and 0495) Table 3

The assemblages from these features are all insubstantial, with most probably being derived from scattered refuse. Bone fragments are present throughout, and the samples from SFB 0980 also contain small pellets of burnt or fired clay, possibly derived from a hearth.

SFBs 0326 and 0740 (0568 and 0783) Appendix 19 Table 4

Although the assemblages from SFBs 0326 and 0740 are all very small, their overall composition is again, suggestive of small accumulations of domestic detritus. However, it should be noted that four of the eight assemblages from the fills within SFB 0326 contain spelt wheat glume bases. By the early Anglo-Saxon period, spelt appears not to have been widely cultivated within eastern England and it is generally assumed that, when it does occur, it is as a relict of earlier Roman cropping regimes. However, with the current assemblages it should also be noted that many of the early Anglo-Saxon features at Eye appear to have cut earlier Iron Age deposits and it is, therefore, quite

likely that the spelt chaff present here is residual from these disturbed contexts (although SFB 0326 did not actually cut any earlier features).

SFBs 0692, 0713, 0845 and 3108 (0913, 0713, 0845 and 3242) Appendix 19 Table 5

A total of eleven samples were taken from the four structures. All contained low densities of possible hearth refuse including cereal grains, weed seeds, nutshell fragments, charcoal and pellets of burnt or fired clay. However, the assemblages from SFBs 0713 and 0845 contained a noticeably higher density of animal bone fragments (including some burnt pieces) than many of the other samples studied.

The assemblages from posthole (Groups 0075, 0013 and 2623) Appendix 19 Table 6

A total of twelve samples were taken from postholes of possible Iron Age (from posthole group 0075) and early Anglo-Saxon date (SFB 0013, posthole building 2623). The three assemblages from the Iron Age round houses (Samples 8 (0062), 9 (0064) and 39; (0127)) are very sparse. Posthole 0127 from SFB 0013 does contain a moderate density of bone fragments. Plant remains, including charcoal fragments, are very rare within the assemblages from early Anglo-Saxon aisled building 2623. However, the samples do contain a low density of burnt/fired clay, burnt stone fragments and small vitreous concretions, possibly indicating that some process involving high temperatures of combustion was being undertaken in the near vicinity.

The Early Bronze Age cremations Appendix 19 Table 7

Seventeen samples were taken from fills within a total of five cremation deposits of probable Early Bronze Age date. Of these, twelve contain cereal grains, seeds and/or nutshell fragments. However, as most occur as single specimens within an assemblage, it is assumed that all are probably present as either accidental inclusions within the pyres, as relicts of the plants growing on the land surface beneath the pyres or as constituents of the kindling used to ignite the fires. There would appear to be no evidence for the deliberate inclusion of offerings to the deceased.

The early Anglo-Saxon burnt flint pits Appendix 19 Table 8

With only two exceptions (Samples 278 – pit 0695 and 410 – pit 0596), the ten samples from the burnt pit fills were principally composed of high densities of charcoal/charred wood (including some larger pieces >5mm) and numerous fragments of heat-shattered stone. Bone fragments, including rare burnt pieces, were also present in all but one

sample, and the assemblage from pit 0695 (Sample 278) contained a small fragment of a burnt organic concretion. At the time of writing, the purpose of these features is unclear, although the lack of 'industrial' residues within the assemblages may indicate material derived from a domestic activity, for example cooking or the heating of water.

Pit and post-hole assemblages plus material from other unspecified features

A total of twenty-six samples were taken, although to date, only nine are from intrinsically dated (Early Iron Age and early Anglo-Saxon) contexts. With the exception of charcoal/charred wood fragments, plant macrofossils are generally very scarce, and it would appear most likely that much of the material recorded is derived from scattered or wind-blown refuse of unknown origin. However, one assemblage is sufficiently different to merit individual mention. Pit 3104 (Phase 4) (Sample 525 – Table 10) contains a small assemblage, which appears to be principally derived from a deposit of burnt cereal processing/storage waste. Although oat and barley and grains are present, wheat is predominant, and it would appear most likely that the former two are present as contaminants of the main wheat crop. Wheat glume bases, including double keeled specimens of spelt, are also present along with a small number of detached cereal sprouts and seeds of segetal weeds including brome, cornflower (*Centaurea* sp.) and black bindweed. Fragments of black porous material, almost certainly derived from the combustion of the cereal grains and chaff at extremely high temperatures, are also recorded. This assemblage is typical of material of later prehistoric (Iron Age) and Roman date, and has parallels throughout the eastern region.

Ditch 0120 Appendix 19 Table 10

Of all the assemblages studied, only one (Sample 618) contains a small assemblage of shells of terrestrial molluscs. However, the date of the feature is currently unknown. Three of Evans' (1972) ecological groups of land snails are represented, with woodland/shade loving and open country species occurring most frequently, indicating short turfed grassland conditions with intermittent areas of shade.

Hollow way 2160 incl. segment 3401 and related features Appendix 19 Tables 11 and 12

A total of eighteen samples were taken from layers in segment 3401, from across colluvial deposit 0025, hollow 2578, layers in 2m squares 2130. (Table 11) and hollow way 2160 (Table 12). Although the deposits within these features were moderately deep, waterlogged/de-watered macrofossils are not recorded within any of the samples

and only a low density of charred plant remains are present. In nearly all respects, the composition of the assemblages is closely paralleled by material from the site as a whole, although a small number of grassland herb seeds are also recorded. It would appear most likely that some, if not all, of the material present is derived from detritus generated by the occupants/users of the site, although the deliberate deposition of refuse within the features is not represented.

4.11.4 Significance of the macrofossil evidence

In summary, with rare exceptions, the assemblages are mostly small and sparse, containing only limited evidence for on site occupation and/or activities.

Early Bronze Age

The cremation assemblages are largely typical of the period, containing the remains of cereals, dried herbs, roots and other plant materials, which were either used as fuel or burnt *in situ* beneath the pyres.

Iron Age

The Iron Age assemblages are largely unremarkable, with the exception of pit 3104 (Sample 525), which contains a moderately high density of burnt cereal processing/storage waste. However, it would appear that residual Iron Age material, largely in the form of spelt wheat glume bases, may be present within a number of the early Anglo-Saxon assemblages.

Early Anglo Saxon

Of the early Anglo-Saxon SFBs, three (0013, 0326 and 0740) appear to contain domestic detritus within their fills, although in most cases, it is unclear whether this may be related to the use of the building, or evidence of the post-use deposition of debris. The grain rich nature of the assemblages may indicate that the occupants of the site were not involved in cereal production/processing, but were, instead, relying on imported batches of semi-cleaned or prime grain to meet their cereal requirements. A further four SFBs (0692, 0713, 0845 and 3108) contain very low densities of similar ‘domestic’ refuse. The assemblages noted from SFBs 2009, 0191 and 2623 are noticeably different in composition, and may indicate that some structures were working premises. Although the nature of the work being undertaken within them is, at present, unknown it may in part have involved the use of heated water, and high temperature

combustion is also indicated in at least one instance. That these buildings occupied an area which had been cleared and in use for many centuries is evidenced by the presence of both Early Bronze Age cremations and isolated Iron Age features.

5. Potential for analysis and publication and recommendations for further work

5.1 Realisation of the Original Research Aims

- To identify and fully excavate and record all archaeological deposits which would otherwise be damaged or removed by development.
- To investigate the potential for the site to produce, in particular, evidence for prehistoric and Anglo-Saxon occupation.

During the five months of fieldwork all archaeological deposits and features were excavated and recorded. Finds were retained and plotted and environmental samples taken. The two main periods of occupation were Late Bronze Age/Early Iron Age and early Anglo-Saxon, although evidence of Neolithic and Early Bronze Age funerary activity was also identified. Limited evidence for Iron Age and Roman occupation in the vicinity was identified in the form of stray finds. Undated, but stratigraphically late ditches, may indicate medieval and post-medieval agricultural activity.

The assessment has investigated the potential for the results of this work to enhance the study and understanding of both the prehistoric and early Anglo-Saxon periods, and has identified more detailed research aims for these periods for the analysis and publication stage of works. These research aims and the potential to address them is detailed below.

5.2 Updated project Design

5.2.1 Introduction

This section presents the Updated Project Design based on the results of the individual assessments. A set of revised research aims, based on the potential and significance outlined in the previous sections, will be presented. These revised research aims will be used to focus the next stage of work. Each area of study will be discussed and the work recommended for analysis and illustration will be listed.

5.2.2 Revised research aims (RRA) and research questions (RQ)

These research aims will refer to topics identified in the Regional Research Agenda (Medleycott, 2011) as being of particular relevance to the periods and site activities identified here.

Prehistoric activity

These research aims will address topics relating to patterns of burial practice, relationships between burials and settlement, changing land-use, ceramic studies and the Bronze Age to Iron Age transition.

Research topic 1: Patterns of burial practice and relationship between burials and settlement sites

- Can the date of the Neolithic cremation be more closely defined?
- How does the Neolithic cremation relate to the other Neolithic activity on the site?
- How does the limited evidence for the Earlier Neolithic activity compare with other sites in the region?
- Can any more Neolithic activity be identified by examination of the unphased features?
- Is the inhumation the same date as the Late Neolithic/Early Bronze Age cremations?
- Can the dates of the Earlier Bronze Age cremations be more closely defined?
- How does the evidence for Bronze Age funerary practices compare to that from other sites in the region, and in particular the relationship between the inhumation (should it be confirmed as Earlier Bronze Age) and cremations?
- What is the time span between the cremations and the Later Bronze Age phase?
- How long a period of activity does the Later Bronze Age/Early Iron Age activity represent and is there any possibility that it relates in any way to the Earlier Bronze Age cremations?
- What is the significance of the topographic location of the cremations and do they form part of a wider funerary landscape around Eye?
- How does this relate to other prehistoric finds and sites around Eye?
- How does the presence of a small group of cremations and the single inhumation contribute to discussions about prehistoric attitudes to burial?

Research topic 2: Examination of settlement structure.

- What is the structural form of the Later Bronze Age/Early Iron Age round houses? How do they compare with regional parallels? Is the absence of hearth evidence due to truncation?
- Are the buildings contemporary with the pits?
- What activity do the pits represent?
- What is the significance, if any, of large pottery assemblages within some of the pits, in particular the apparently pottery lined pit?
- Does the Later Bronze Age and Early Iron Age pottery represent continuous activity?
- How long a period of activity is it likely that this represents and is there any possibility that it relates in any way to the Earlier Bronze Age cremations?

Research topic 3: Examination of the economy and changes in landscape use during the prehistoric period

- What does the environmental evidence tell us about the land-use in the immediate vicinity or the use of the pits themselves? How does the evidence compare from the Neolithic to the Early Iron Age periods?
- What is the evidence for formal land division and field systems?
- One ditch has been attributed to this phase; are there any others, and do these indicate formal land divisions?
- Is there evidence that this forms part of a wider dispersed occupation?

Research topic 4: Cross referencing of ceramic studies between typological dating and scientific methods.

- Can the dating of the pottery from each Phase be refined?

Research topic 5: Typological identification of Later Bronze Age pottery

- How does the pottery here compare with other regional contemporary assemblages
- Can the dating of the pottery from this Phase be refined?

Research topic 6: The Later Bronze Age/Early Iron Age transition

- Does the Later Bronze Age and Early Iron Age pottery represent a chronological sequence or ethnic/cultural differences?
- Are there physical differences between the features that reflect the pottery differences?

Research topic 7: Comparisons between Bronze Age activity in the north and south of the region

- How does the Later Bronze Age/Early Iron Age **a**ctivity relate to other local and regional sites, in particular those with similar feature characteristics, such as the pottery lining in occasional pits, e.g. IPS 247 and FSG 013?

Research topic 8: Study of Bronze Age flint working

- What can we say about the changes in use of flint tools and flint-working techniques as metal becomes the dominant material for tool manufacture at the Bronze Age/Iron Age transition?

Early Anglo-Saxon activity

This is the most significant phase of activity on the site and addresses many of the research criteria identified for settlement in this period (Medleycott, 2011). The evidence from Hartismere School has the potential to contribute to general and specific topics relating to the Roman-Saxon transition, the characterisation of settlement forms and functions, building typology and construction techniques, agricultural production, land-use changes, craft/industrial production and the rural economy.

Research topic 9: The Roman-Anglo-Saxon transition and the inherited landscape

- What is the earliest possible date of the early Anglo-Saxon activity? How does this compare with the date of the cemetery (YAX 016) to the west and also to the date of Anglo-Saxon material to the north?
- What is the size and form of the earliest phase of the settlement?
- Where does the late Roman material come from, and when; was it from the earliest contexts on the site?
- What were the Anglo-Saxons utilising the Roman material for?
- Does the presence of the late Roman coins suggest only a narrow chronological gap between the Roman and Anglo-Saxon activity?
- Why does there appear to be no overlap of occupation from the two sites, why did the Romans choose the plateau and the Anglo-Saxons the slope?
- How does this site relate, in date and function, to Roman site (EYE 094) on the plateau to the north?
- When and why did the occupation cease at EYE 094?

Research topic 10: The form, function, infilling and date of the SFBs

- Why are the sunken features, and by implication the buildings, so variable size and shape? Does this indicate different uses or dates? Is there any variation, or pattern, across the site?
- What was the form of the buildings? What were the construction materials?
- Is there any evidence for suspended floors or for occupation on the base of the sunken features?
- What do the fills of the sunken features represent; from where did the material originate? How does the nature of the fills compare to other features/feature types? Are there any examples of 'placed' or 'special' deposits.
- Does the finds evidence help to date the occupation and/ or destruction of individual buildings?
- Does the finds and environmental evidence from their fills help to suggest uses and/or construction materials for these buildings?
- What is the date of the buildings; can a sequence be defined across the site?
- What is the longevity of individual SFBs?
- How do the SFBs relate to other buildings and features, both spatially and chronologically?
- How does these compare with buildings from other regional settlement sites?

Research topic 11: The form, function and date of the long house

- What was its function? Is it domestic and/or agricultural?
- Can entrances, partitions and other internal structural features be identified?
- What is the structural form of the building?
- Why is there only one?
- How does it relate, spatially and chronologically, to the other Anglo-Saxon buildings in the settlement?
- What is the date of the building, and what is its longevity?
- What, where and when are the parallels for the building? Is it a continental style long-house?
- What is the status of the building? What are the implications of this building for the social and economic structure of the settlement?

Research topic 12: Surface/colluvial deposits and formation processes

- What are these deposits? Is it a single colluvial deposit or is it made up of different layers/deposits, and/or buried soils that have been protected by later colluviation? Why did they form? Is it due to a change in land management?
- When did these deposits form, over how long a period? Is there potential for absolute dating, e.g. suitable material at the base of the sequence or primary disposals higher up (e.g. articulated animal bone)?
- What is the quantity (and density) and type of finds in this deposit? How was the material deposited? Are there any discrete concentrations of material and/or examples of direct/primary disposal, from particular activities, or is it all secondary and tertiary material? In order to address this, what is the condition of the material like, and how does it compare to other features? Can sherd links be established between sherds within and between 2m grid squares, and with other features?
- How does the nature of this deposit compare to other features, e.g. SFBs and pits?

Research topic 13: The size, character and longevity of the settlement?

- Does the settlement layout reflect either chronological and/or functional differences?
- How does the settlement develop over time? How many buildings were probably standing at anyone time? Is there any evidence of settlement shift across the site?
- How does the site develop over time, do the functions being undertaken on the site change over time?
- What is the relationship between the posthole buildings and the SFB's?
- Can the site be divided into small groups including 'industrial' features, suggesting foci of activity or different uses for different parts of the site?
- What evidence is there for internal divisions or boundaries within the settlement?
- Does the absence of hall/SFB groups on this site change interpretations applied to other sites?
- Is the absence of hall/SFB groups compensated for by the presence of the long-house and the other building?
- Is there evidence of routes, i.e. paths, tracks or roads, through the settlement?
- How does the settlement compare to current models of settlement structure?

Research topic 14: The early Anglo-Saxon economy, agriculture and craft production

- What is the date of the burnt flint pits? Do they relate to one short period of activity or do they span the entire period of Anglo-Saxon occupation? What is their function? Do they have a close spatial relationship with each other and/or other feature-types? What do the postholes around pit 2077 represent; are they structural?
- What is the date of the furnace pit? How was the slag pile generated - can we better define the metalworking activities? What does this tell us about metal working techniques?
- What does the gold indicate – how common is it and how does its presence compare with other regional sites?
- How, over how long a period, when and why did the colluvial deposits at the southern end of the site accumulate?
- Does the material on the surface of, and within, the colluvial deposits help define the site activities? Can we tell how far they have moved from their original locations? Are there any particular concentrations of material?
- Over how long, and when, was the hollow way or sunken trackway in use? What function did it serve – where it go to? How was it created – did it exploit a natural hollow way? When were the pits that cut the base of the hollow excavated? What were they for? When did it go out of use? Where did the deposits infilling the hollow come from, and over what period?
- What does the animal bone relate to? Does the bone come from a specific activity or activities? What do the semi articulated remains indicate? What is their date?
- What do the animal bone remains tell us about animal husbandry, butchering techniques and food consumption?
- What does the environmental evidence tell us about exploitation of local resources, provisioning, food preparation, diet and consumption?
- Can we identify specific areas of the site relating to metalworking or other separate craft activities?
- Where were the Anglo-Saxons sourcing their raw materials? Were they exploiting local resources, melting down Roman metalwork for re-use etc.?
- What was the economic status of the site; does the evidence suggest a producer and/or consumer settlement?
- What is the evidence for exchange and trade? What evidence is there of imported goods either here or from the nearby cremation cemetery?

- What are the similarities or differences between finds from the nearby contemporary sites and this settlement?

Research topic 15: Early Anglo-Saxon activity in the Dove valley

- How does the evidence from this site compare with contemporary sites and finds from along the Dove valley?
- How does this relate to the earliest evidence for Eye?
- How can we extrapolate from the available evidence to generate a narrative for the Roman and early Anglo-Saxon occupation of Eye and the area, that predates the holdings of Eric of Laxfield, and give context to its later significance?
- When and why did occupation cease? What happened to the settlement, and it's inhabitants in the end of the 7th century?

Research Topic 16: Evidence for medieval markets from coinage

- What evidence is there from the coins that the site had a trading function during the medieval period, perhaps as a market?
- What does the high concentration of lower denomination medieval coins (mainly farthings, half pennies and pennies) signify?
- Can we refine the dating on these coins to identify individual kings?
- How does this pattern compare to other sites showing similar patterns, such as Dunwich?

5.2.3 Recommendations for further work for the stratigraphic evidence

The stratigraphic data has been archived, group numbers allocated and provisional phasing applied.

Preparation for analysis and archiving

Prior to the start of the analysis phase, the site database will need updating with phasing and any other new information. Contextual and site plan information will need to be prepared for specialists. The location of small finds and surface finds needs checking against the digital survey data, and allocation to feature fills suggested where possible.

On completion of the analysis the context and phasing data will need updating in the database before archiving. The physical archive will need collating by material type. The digital data will need to be checked and fully labelled with appropriate metadata. (Section 7.2, Tasks 1.2, 1.4 and 11)

Phasing

There are c. 200 undated features and some features with ambiguous dates from the finds. Many of these features may be attributable to a phase by reconsideration of the finds, close examination of the feature fills and comparison of physical and spatial similarities and relationships with dated features.

In particular, in the central area of the site where there is both LBA/EIA and early Anglo-Saxon activity, there is good potential for refining the phasing and attributing features to one or other phase.

Isolated undated features need to be checked for any obvious similarities (e.g. distinctive fills) which might indicate a link to a phase. (Section 7.2, Task 1.3)

Early Neolithic features

There is still some uncertainty about the allocation of features to this group and some further examination is necessary to confirm the phasing. In addition, the contexts with Early Neolithic pottery need to be investigate and the distribution analysed, in order to characterise and interpret the Early Neolithic activity on this site. Consideration of the location of the activity is required, with research into local parallels. (Section 7.2, Task 3.1)

The cremation should be sampled for radiocarbon dating.

Illustrations:

- Phase plan
- Drawing/photo of the cremation

Late Neolithic-Early Bronze Age

The burials need examining after the finds and environmental work is completed to refine the discussion and interpretation. The inhumation and four cremations also need their date confirming, and the results need to be compared and discussed. The spatial relationship of the burials with the two postholes containing grooved-ware also needs careful examination, and the relationship of all features of this period to the local topography. Comparison with local parallels will be required. Investigation is required to identify the chronological relationship between features of this phase and the next, i.e. does this represent two periods of occupation or a long-lived continuous one? (Section 7.2, Task 3.1.1)

The inhumation and two of the cremations need to be radiocarbon dated.

Illustrations:

- Phase plan
- Drawing/photo of the cremations and inhumation
- Six section drawings?

Later Bronze Age-Early Iron Age phase

This has been identified as the second most significant phase of activity on the site, and represents settlement occupation. The evidence for the two buildings needs careful examination to confirm the structural details; any nearby undated or prehistoric features need to be investigated to check if they are associated with them. The finds-rich pits in the centre of the site had distinctive characteristics and all features in this area of the site need checking in order to confirm the phasing. (Section 7.2, Tasks 3.2.1 and 3.2.2)

Once the allocation of features to this phase has been completed, the distribution and form of the features needs examining in relation to the buildings. Some study of local and regional parallels is required, and in particular to address patterns of certain feature types (e.g. pottery 'lined' pits). (Section 7.2, Task 3.2.3)

The dating evidence for this phase and the previous will be carefully examined, to identify whether these represent a continuous sequence of activity with changing material culture, or two distinct, separate phases. The distribution of pottery dated as

Later Bronze Age and Early Iron Age will be also examined, to see if these also represent real chronological differences. (Section 7.2, Task 3.2.4).

Radiocarbon dates are required from at least six pits.

Illustrations:

- Phase plan
- Plans and photos of the buildings (2)
- Sections and photos of a selection of the pits (25?)
- Plan of pit groups

Iron Age and Roman

Only four features, all pits, have been identified to these two phases. Pit 3087 contained a large assemblage of late Iron Age pottery, and the interpretation of this apparently isolated feature needs to be considered. The nature of the fills in the three pits containing Roman material needs to be re-examined, to ascertain if the finds might be residual in later features. (Section 7.2, Task 3.1.2)

Radiocarbon dates are required from pits 3087 and 3104.

Illustrations:

- Phase plan
- Sections and photo of pit 3087

Early Anglo-Saxon

As the most significant phase of activity both in quantity and quality, and with the highest potential to contribute evidence of both regional and national importance, the early Anglo-Saxon settlement evidence will require full analysis.

Surface/colluvial deposits

Detailed work is required to understand both the character of these deposits and date of these extensive deposits across the southern end of the site. The different categories of evidence - environmental evidence, with the stratigraphic evidence and material culture – need to be analysed separately and subsequently integrated, compared and discussed to understand how and when this deposit formed. (Section 7.2, Task 3.3.1)

Illustrations

- Plan of 2m squares and north to south sections
- Distribution plots of surface finds and those from 2m squares (pottery, CBM, small finds by type and animal bone).
- A 3D plot showing the distribution of finds within the 2m squares and layers within hollow way 2160 will be produced.

The hollow way and associated features

Like the colluvial deposit, detailed work is required to establish the stratigraphic sequence within this area of complex archaeology (Section 7.2, Task 3.3.2) . Further work is required to establish the character of the deposits infilling the hollow and date of all these deposits. The different categories of evidence - environmental evidence, with the stratigraphic evidence and material culture – need to be analysed separately and subsequently integrated, compared and discussed to understand how and when these deposit formed. The date of the trackway and length of its use needs confirming, as does the date of the pits that appear cut the base of it.

Further work required to address the research questions for this element of the site activity includes:

- Examination of the stratigraphic sequence of all contexts within hollow way 2160.
- Examination of the form, origin, function and date of the pits cutting the base of the hollow way.
- Examination of the form of the track and wheel ruts and survey for parallels.
- Examination of the finds assemblages – types, quantity, dating, condition and distribution both within the pits and the material infilling the hollow way and comparison with other features types (colluvial deposit and SFBs).
- Integration of the evidence from finds and environmental assemblages, to further the discussion of the nature and origin of these deposits, and origin of material.

Ten radiocarbon dates from deposits infilling the sunken trackway.

Illustrations:

- Plans of hollow way 2160.
- Sections across 2160, and pits

Posthole Buildings

The long-house is a very unusual form for this period in England and the dating is, therefore, critical. Further work is required to establish its form, date and function. The other posthole building also needs defining and the other postholes in this area need re-examining to establish the evidence for fence lines and other possible structures. (Section 7.2, Task 3.3.3)

This will include:

- A detailed study of all the postholes in the area, to confirm which form part of the buildings and to identify information about the construction techniques employed.
- A study of the evidence for the physical appearance of both buildings but the long house in particular.
- Integration and discussion of the analysis of the chemical residues in the floor area and environmental data from the posthole fills, to inform discussion about its use and the activities taking place in the immediate vicinity.
- Absolute dating of carbonised material (should it be present) within the long house post holes.
- Comparison with continental parallels, and the origin of this building type.
- Discussion of how these buildings fit into the overall settlement pattern, and implications for the social and economic organisation.

Ten radiocarbon dates from the aisle posts are required.

Illustrations:

- Building plans and photo (2)
- Plan of fence lines and other structures (2)
- Sections along the wall lines and of the aisle posts (4 x long sections and 9 x aisle posts)
- Reconstruction drawing of long house

SFBs

The eighteen SFBs need to be examined in detail in order to collate the evidence for the form and function of these buildings. The evidence from their fills needs analysing in order to inform discussion of different craft and industrial activities taking place on the

site, spatial zoning of these activities and any chronological developments across the site. (Section 7.2, Task 3.3.4)

Further work will include:

- Examination and discussion of the details of the sunken features, and internal slots and other internal features and examination of posthole locations, size and shape.
- Discussion of the nature of their fills.
- Examination of the finds assemblages – types, quantity, dating, condition and distribution both within and between sunken features, and other features types, and integration of the different finds categories.
- Integration of the evidence from finds and environmental assemblages, to further the discussion of the nature and origin of their fills.
- Discussion of their function and also structural reconstruction.
- Absolute dating of material from a selection of sunken features to contribute to the discussion of the site sequence and chronological studies of the different building forms. This will contribute to phasing the buildings and understanding the settlement development. This will be in conjunction with diagnostic finds evidence. These dates will also inform the dating of material culture.
- Comparison with regional and national parallels, and also international parallels given the potential continental-style long house.
- Discussion of spatial distribution and sequence of SFBs, and life-span of individual buildings, and relationship to other features/feature types.

Thirty six radiocarbon dates (two from the fills of each of the SFB's) are required.

Illustrations:

- Building plans, sections and photos (18)
- Additional posthole sections
- Reconstruction drawings?
- Distribution plots of the finds and environmental data (3)

Features with industrial and craft production evidence

The burnt flint features were all very similar suggesting that they were used for a particular activity and the fills suggest that they may have been single use. Further examination of these (Section 7.2, Task 3.3.4) is required to address research

questions regarding the nature of Early Anglo-Saxon industrial technologies and this will include:

- Detailed examination of the finds, environmental and stratigraphic data from all the pits, including the burnt flint pits, phased to the early Anglo-Saxon period for evidence of industrial activity and craft production, and comparison to other features types.
- Examination of the function, and date of the pits (including absolute dating), and their spatial distribution. Comparison with other sites for parallels.
- Examination of the furnace pit, absolute dating of this features and comparison with other sites in England and on the continent. Discussion about how it was constructed and used.
- Discussion of the particular activities represented by the evidence, e.g. metal working, brooch manufacture, antler working, trading, water heating (for what) and evidence for spatial or chronological distributions, and potential for identification of concentrations or zones of activity.
- Discussion of role played by SFB's in this activity, evidence for workshops.

Radiocarbon dates from the burnt flint pits with a view to taking two samples from seven of the pits (14 samples), and two samples from the furnace pit.

Illustrations:

- Plans and sections of sixteen burnt flint features and furnace pit.
- Plans to show concentrations of activity.
- Reconstruction drawings depicting industrial activities on the site.

Settlement layout and overview of Early Anglo-Saxon activity

Examination of the settlement organisation and phasing will be undertaken, combining the different strands of dating evidence from the site (stratigraphy, distribution of diagnostic finds, absolute dating). The character and status of the site suggested by the evidence will be also discussed. Comparison will be made to the different models proposed for settlement structure and organisation during this period, and comparisons will be made with regional, national and continental sites. (Section 7.2, Tasks 3.3.6, 3.3.7 and 3.3.8)

This will include the following aspects:

- Character, status and longevity of the settlement, and comparisons with other sites (e.g. West Stow, Bloodmoor Hill, Mucking) and current settlement models.
- Examination of the spatial and chronologically development of the settlement. This will require a programme of absolute dating of carefully selected features.
- Examination of the relationship between the posthole buildings, SFB's and other early Anglo-Saxon features, both spatially and chronologically.
- Discuss of the distribution of material across the site, and discussion of rubbish deposition and implications for understanding the use of space and organisation of activities.
- Examination of the evidence for Early Anglo-Saxon farming practices.
- Examination of the landscape context of the site, including a consideration of the finds from the nearby cremation cemetery (YAX 016) and other nearby sites.
- Comparison of the results from this site and those from Roman site EYE 094 and the evidence for the period of transition from Roman to early Anglo-Saxon

Illustrations:

- Phase plans to show the development of the site.
- Plan of the site in comparison to other contemporary sites.
- Plan to show local context.
- Plan to show trade contacts.

Other features

It is suggested that these features, particularly ditches and undated features, are re-examined once the main site interpretation has been established. (Section 7.2, Task 3.3.5)

The work required is:

- Re-examination of each feature relating to the established site sequence and interpretation.
- Examination of the ditches in relation to evidence for medieval field alignments.

Production of publication text

Following all specialist analyses, the information from the separate specialist sections will be integrated and synthesised into a general discussion and interpretation of the

evidence that will set the settlement into the local, regional, national and international contexts. Publication will also require text for the introductory chapters, including documentary study and discussion of the development of Eye. (Section 7.2, Task 10.6).

There is no proposal to produce an archive or 'grey literature' report, in addition to the publication report, and archive, for this site.

Illustrations

Reconstruction drawing (1)

5.2.4 Recommendations for further work for the finds and environmental evidence

The recommendations, by the relevant specialists, for further work on both the finds and the biological and environmental material are presented in the following section, and includes selected method statements, together with a detailed breakdown of tasks within specialism. The total time for each specialist is listed in Section 7.2, Task list.

General updating of finds records

The finds and environmental remains recovered from the processing of the soil samples will be processed, catalogued and integrated and recorded with the rest of the finds from the excavation and included in any specialist analyses. (Section 7.2, Tasks 1.2.4, 1.2.5, 1.2.6 and 1.2.9)

Prehistoric pottery (Section7.2, task 4.1)

Sarah Percival

The recommendations for further work have been subdivided by major prehistoric period:

Early Neolithic

- Incorporate any group or phase information into pottery catalogue.
- Write publication text describing the fabrics, forms and distribution/deposition of the pottery and including a discussion of function, dating and regional parallels.
- Three sherds should be selected for illustration, including one Peterborough Ware sherd and an example of the each of the plain bowl rim forms.

- Examination of the taphonomy of the earlier Neolithic pits and consideration of any possible patterns of deposition (of pottery and flint) using the broad categories described by Garrow *et al*. (2006, 53).

Late Neolithic to earlier Bronze Age

- Incorporate any group or phase information into pottery catalogue.
- Write publication text describing the fabrics, forms and distribution/deposition of the pottery and including a discussion of function, dating and regional parallels.
- The accessory vessel, the comb-impressed Beaker and a Grooved Ware sherd should be drawn and a catalogue description provided for each illustration.
- Grooved Ware is often considered to be placed in structured deposits and a full examination of context of deposition and any other artefactual evidence associated the Grooved Ware should be undertaken.

Earlier Bronze Age

- Incorporate any group or phase information into pottery catalogue.
- Write publication text describing the fabrics, forms and distribution/deposition of the pottery and including a discussion of function, dating and regional parallels.

Later Bronze Age

- Incorporate any group or phase information into pottery catalogue.
- Write publication text describing the fabrics, forms and distribution/ deposition of the pottery and including a discussion of function, dating and regional parallels.
- Check for cross context joins between pit and posthole groups.
- Select 15 sherds for illustration and prepare a catalogue of illustrated sherds.

Earlier Iron Age

- Incorporate any group or phase information into pottery catalogue.
- Write publication text describing the fabrics, forms and distribution/deposition of the pottery and including a discussion of function, dating and regional parallels.
- Check for cross-context joins between posthole groups.
- Select eight sherds for illustration and prepare a catalogue of illustrated sherds.

Later Iron Age

- Incorporate any group or phase information into pottery catalogue.

- Write publication text describing the fabrics, forms and distribution/deposition of the pottery and including a discussion of function, dating and regional parallels.
- Select four sherds from pit 3087 for illustration and prepare a catalogue of illustrated sherds.

Pottery from environmental samples

A considerable quantity of additional sherds of prehistoric pottery was identified amongst the finds retrieved through the flotation of environmental samples. In one case this was over 50 sherds (99g) (Context 2839, Sample 520). This material should be scanned in order to see if it can augment any of the dating for specific features.

Radiocarbon dating

Contexts containing prehistoric pottery that would benefit from absolute dating:

Earlier Neolithic:	Pits 0503, 0513 and 0736
Later Neolithic to earlier Bronze Age:	Pit 2857
Earlier Bronze Age:	Pit 0850
Later Bronze Age:	Features 0083, 2786, 2989, 2992, 3047 and 3242
Iron Age:	Pit 3087

Roman Pottery (Section7.2, task 4.2)

The Roman pottery has been catalogued for the assessment. It will need to be compared with the assemblage from EYE 094, to the north of this site. A full publication text and discussion of dating, significance and regional parallels is required. Any pottery recovered from the environmental samples should be added to the catalogue.

Post-Roman pottery (Section7.2, tasks 4.3 and 4.4)

Methodology for analysis

A full quantification by fabric, context and feature has already been completed, and a catalogue of this data will be prepared for the archive.

Early Anglo-Saxon pottery

- The following tasks will be carried out during the analysis stage:
- The majority of recording work for this assemblage has been carried out at the assessment stage.
- Further work is required on spatial and stratigraphic analysis once final phasing and more detailed site information are available.

- Data from the 2m grid squares will be fed back to SCCAS for incorporation into Vertical Mapper plots, and the resultant plans will be used to interpret distribution of the pottery in comparison with underlying features. Comparisons with the distribution of other artefact assemblages will also be of value for the interpretation of activity within the settlement.
- Sherd refitting, with and between features.
- Up to thirty-four vessels are worthy of illustration, two of which could simply be photographed (list in Access database). These will require more detailed fabric and form description for the published catalogue.
- Refine dating of vessels where possible, based on forms and fabrics and by comparison to other dating evidence from the site (association and absolute dating)
- Identification of potential sherds with charred residues for absolute dating from appropriate contexts, and subsequent incorporation of the dating evidence into the report.
- Identify parallels for the small, near complete decorated jar with footring base.
- Comparisons with other East Anglian sites will be required.
- A more detailed report on fabrics, forms and decoration will be prepared for publication.
- Stamped sherds should be sent to Diana Briscoe for addition to the Archive of Anglo-Saxon Pottery Stamps, and for reporting by her.
- Distribution plots showing fabric types, occurrence of decorated pottery and sherd refits will be required.

Later material

Spotdates have been provided, and no further work is required on this small assemblage.

Pottery from environmental samples

A small number of Anglo-Saxon sherds was identified from twenty-nine samples taken for plant macrofossils. These should be scanned by the pottery specialist with a view to providing further dating evidence and increasing the data for the catalogue.

Ceramic building material, plaster and mortar (Section7.2, task 4.5.1)

This assemblage has not yet been catalogued. The following tasks are recommended:

- Full recording by fabric, form, count and weight of these materials.

- Discussion of the spatial and temporal distribution across the site.
- Discussion of the use of fabrics for particular types of ceramic building material e.g. the flue tiles. Were certain keying-in patterns used with particular fabrics?
- Discussion on the residuality and/or possible reuse of the cbm during the Anglo-Saxon period, in hearths and other features.
- Discussion of the CBM evidence and what it suggests in terms of a Roman building in the vicinity.
- Comparison with other sites

Fired clay (Section7.2, task 4.5.2)

The fired clay has not yet been fully catalogued. The following is recommended:

- Full recording by fabric, form, count and weight and diagnostic features.
- Discussion of the spatial and temporal distribution of the fired clay across the site.
- Is it possible to assign individual fabrics to the prehistoric, Roman and Anglo-Saxon periods?
- Fired clay associated with the pits and possible Iron Age round houses should be described and discussed.
- Any fragments with structural impressions should be discussed in relation to where they were found on site. Is there any evidence of wattle and daub which can be considered to be early Anglo-Saxon in date rather than Roman?
- Any fired clay associated with buildings will be particularly worthy of study.
- The fragments of vitrified clay lining may provide evidence of hearths and ovens associated with industrial features of Anglo-Saxon date. The fired clay distribution and the slag and animal bone distribution could be compared to see if there is any correlation between features which have an industrial character relating to iron-working and the processing of animal bones during the Anglo-Saxon period.
- Any artefactual remains such as ceramic loomweights will be separated out and added to the small finds record.
- Is it possible to discuss how much preparation had been undertaken for the clay? What materials had been deliberately added to improve its properties? Did the basic raw material come from nearby or had it been brought in?
- Any particularly interesting fragments of fired clay (indicating structural form) should be considered for photography, especially if they can be associated with a building.
- Comparison with other sites both regionally and beyond if appropriate.

Worked flint (Section7.2, task 4.6.1)

- The flint should be considered in the light of any revised dating evidence and structural/stratigraphic analysis.
- The distribution of flint across the site, and its depositional context should be considered. Struck flint from a number of features of possible early Anglo-Saxon date will be considered more closely once further dating evidence is clarified and stratigraphic information is available.
- Parallels should be sought for the unusual flint anvil/quernstone. It is possible that some further wear-analysis of the anvil/quern stone may inform on its use but this depends partly on further research on parallels etc.
- A summary flint report should be prepared for the final report.
- Pieces should be selected for illustration and a catalogue of illustrated pieces prepared (this might be a maximum of 20 pieces, depending upon the further analysis of the material).
- Worked flint recovered from the bulk samples should be added to the catalogue and included in the publication report.

Burnt flint and stone (Section7.2, task 4.6.2)

Richenda Goffin

The spatial and temporal distribution of the burnt flint and stone should be considered to determine whether it is associated with prehistoric activity or whether any of it is related to Anglo-Saxon industrial features. The stone should also be scanned to find out whether it is mainly quartzite or if there are more unusual petrological types present. If informative, plots of the distribution of this material on site should be considered for inclusion in the publication.

Quernstones (Section7.2, task 4.6.3)

Richenda Goffin

A catalogue of the lavastone fragments and other quernstones should be prepared, and their context examined in order to establish where possible the types which were being used and any diagnostic features such as handle voids and wear patterns. An examination of their spatial and temporal distribution should be made, and a distribution plot of this material across the site should be considered. The assemblage should be

compared with other early Anglo-Saxon sites in the region. The quern fragments should also be considered against any other artefact types associated with food production and preparation.

Slag and associated debris (Section7.2, task 4.7)

Lynne Keys

The assemblage may be either Iron Age or early Anglo-Saxon but, either way, the smelting method is the same as that used in north-west Continental Europe during the Iron Age.

The recovery of possible iron ores makes the assemblage of more significance because it should be possible to say something about the type of iron that was obtained from the smelt. The possible ores require identification by a geologist with knowledge of iron ores and their regional sources.

Refinement of dating and stratigraphic relationships may or may not reveal the date of the smelting activity. Radiocarbon dating of single fragments of any short-life charcoal (such as twigs, sapwood or bark from oak) clearly associated with the slag block should, however, refine the available dating and distinguish between an Iron Age or early Anglo-Saxon date for the smelting.

Spatial and dating information will be required in order to analyse the assemblage and write up the slag for publication. Additional fragments recovered from the environmental samples should also be catalogued and included in the final report.

Samples of iron ore will be examined by an appropriate specialist with a view to determining whether it is likely to be local to the area, and a resource that was exploited on site.

The small finds (Section7.2, tasks 5.1-4)

Ian Riddler

- The early Anglo-Saxon small finds should be catalogued and discussed by category and material. Comparisons can be drawn with contemporary sites, principally in East Anglia but extending also to Lincolnshire and the Midlands, to examine regional

distinctions. No imported items have been identified but several objects should be checked against Continental literature, given the affiliations of some of the site structures. The small finds text will be written by Ian Riddler, with the exception of the brooches and wrist clasps, which will be discussed by Faye Minter, under supervision from Ian Riddler. John Hines will write up the object with the runic inscription.

- The copper alloy assemblage, including both securely dated material and metal-detected finds, should be closely examined and related to the processes of non-ferrous metalworking, which include both casting and cold working. This would also include a survey of the brooches, for any traces of their manufacture.
- The lead alloy model forms a separate but closely related component of the waste material and would need to be placed within its early Anglo-Saxon context. It can be compared with the lead model from Brandon (Tester et al, forthcoming).
- The spatial patterning of the small finds should be examined.
- It is recommended that eighty of the early Anglo-Saxon small finds should be illustrated; a list of these finds has been provided. Drawings should be checked when completed.

A breakdown of the tasks relating to the small finds is as follows:

1. Catalogue of early Anglo-Saxon small finds	5 days
2. Search of comparative literature	2 days
3. Spatial analysis of small finds	1 day
4. Preparation of final report	4 days
5. Checking of illustrations	1 day
6. Supervision of Faye Minter	2 days
7. Runic inscription (John Hines)	0.5 day

The coins (Section7.2, task 5.5)

Faye Minter

Following cleaning and the removal of corrosion products, further identifications of some of the Roman coins may be possible.

- A fuller catalogue of the Roman coins may result in a better basis for a more accurate chronology for the coins. The results of the Reece graph, which shows a large peak from AD 388-402 (Reece Period 21), need comparing with other sites in Suffolk and elsewhere which appear at this stage to have the most similar chronology. The updated graph should be compared with other datable evidence on site.
- The Roman coin evidence needs examining in terms of spatial and context distribution within the excavation area.
- The probable re-use of the Roman coins in the early Anglo-Saxon period should be discussed in relation to other sites, such as West Stow where evidence of such re-use was high. This data needs to be compared with any similar patterns in the other Roman material from the site – the question of 'curation' of Roman material has been highlighted as a research objective in the regional research framework (Brown and Glazebrook, 2000).
- The relatively large quantity of lower denomination medieval coins is worth investigating further, as the identifications could be refined to sub-groups within the reigns of individual kings. An investigation of their site distribution may shed light on the possible reasons for their presence there. The high proportion of lower denominations also needs comparing with other sites, such as Dunwich, where a similar pattern seems to occur. Dr Martin Allen of the Fitzwilliam Museum to provide guidance for this particular area of research.

Scientific analysis of small finds and conservation work (Section7.2, task 6)

- Around 20–30 samples of the waste material from the copper alloy assemblage could be sampled for compositional analysis using SEM-EDX. This may include the copper alloy ingot, but would concentrate otherwise on the sheet metal waste.

A breakdown of the time required for this work is as follows:

- Survey of copper alloy objects and waste to detect traces of manufacture (Cath Mortimer) 3 days
- Sampling of selected items by SEM-EDX (Cath Mortimer) 2 days
- Report on sampled material (Cath Mortimer) 2 days
- Report on lead alloy model (Cath Mortimer) 1 day
- (Plus cost of access to analytical equipment)

In addition, it is recommended that a further fifty objects should be cleaned and repackaged. The Roman coins should also be cleaned so that they can be fully recorded (see above).

Animal bone (Section7.2, task 7.2)

Lorraine Higbee

Methods Statement for further analysis

The following standard methods will be applied during full analysis of the Hartismere assemblage:

Quantification

The Davis (1992) method of analysis is generally recommended as the most cost-effective for large assemblages since it reduces the over-recording of fragmented bones but still provides an accurate indication of species proportions. A selective suite of mammalian skeletal elements will be recorded as standard and used in counts. Countable bones are those that usually show a good survival and recovery rate in most assemblages and also provide useful age and biometric data. A few additional bones will also be counted; these include the zygomatic, atlas and axis vertebrae, proximal ulna, and horn cores and antlers with a complete transverse section.

The recording of avian bones will be limited to bones from the wing and leg, and these will only be recorded if they retained one complete articular surface. Ribs and vertebrae (other than the atlas and axis) will be assigned to size categories only and small unidentifiable fragments to general mammal and avian categories. This will provide an overall fragment count.

The number of specimens identified to species (or NISP) will be calculated for all taxa but the minimum numbers of individuals (or MNI) will only be calculated for the most common taxa. The MNI will be calculated by simply dividing the total number of fragments of each skeletal element by the number present in the body.

Species differentiation

The following methods will be used to distinguish between related taxa and wild and domestic forms:

- sheep and goat - Boessneck (1969), Payne (1985) and Halstead *et al* (2002),

- equid teeth - Davis (1987),
- cat - O'Connor (2007),
- pig - Payne and Bull (1988),
- *Gallus, Numida and Phasianus* - MacDonald (1992).

Taphonomy

Bone preservation will be scored on a scale from one (very good) to five (very poor). Information on burning and gnawing will be recorded where present.

Butchery

Lauwerier's (1988) coded system with later additions by Sykes (2007) will be used to record butchery marks. Anatomical templates and/or photography may also be used to illustrate common patterns.

Pathology and non-metric traits

These will be categorised were possible and detailed descriptions made as to form and location (after Vann and Thomas 2006). The following non-metric traits will also be recorded where possible: reduction/absence hypoconulid, presence/absence of p2, presence of premolar foramina and characteristics of the mental foramina.

Biometric data

Measurements will be taken using an osteometric board and digital callipers according to the conventions of von den Driesch (1976), Payne and Bull (1988), Davis (1992) and Cohen and Serjeantson (1996). Statistical comparisons using summary descriptive statistics, student's t test and the log ratio technique will be applied where appropriate.

Withers height calculations for the main domesticates will use the conversion factors of Kiesewalter for horse, Matolcsi for cattle, Teichert for sheep and pig (see Von den Driesch and Boessneck 1974) and Harcourt (1974) for dog.

Ageing data

The ageing data of Silver (1969) will be used to assess epiphyseal fusion of the post-cranial skeleton and fusion categories will follow O'Connor (1989). Bird bones with 'spongy' ends will be recorded as 'juvenile'.

The eruption and wear stages of the lower cheek teeth will be recorded using Grant (1982) for cattle and pig, and Payne (1973; 1987) for sheep/goat. Mandibular age

stages will follow Halstead (1985) for cattle, Hambleton (1999) for pig and Payne (1973) for sheep/goat.

Sexing

The following methods will be applied to specific anatomical elements:

- cattle and sheep/goat pelvis - Greenfield (2006),
- pig canines and their alveoli - Schmid (1972, 80-81),
- cattle horn cores - Sykes and Symmonds (2007),
- horse teeth and pelvis - Getty (1975),
- chicken tarsometatarus - Sadler (1991).

Reporting

Tables and charts of summary data will be produced from the resulting dataset and will form the basis for discussion and comparison. The report will include detailed discussion of the following: analysis methods, preservation, occurrence and relative importance of different animals, skeletal element representation, age and biometric data, abnormalities and pathologies, butchery and bone working, food provisioning, diet, craft, status, spatial patterning and disposal practices. Comparison will be made with datasets from other assemblages with a view to establishing how the Hartismere assemblage fits with local, regional and national trends. Analysis and discussion will also attempt to address the points highlighted above.

The initial stage of reporting will involve the production of a detailed archive report, which will then be scaled down to produce a final publication report following initial comments.

Fishbone

Any fish bone will be separated for analysis by an appropriate specialist. No fish bone was observed in the assessment sub-sample but some material could be present in the un-scanned hand-recovered and sieved assemblages.

Fishbone has also been recorded in the environmental residues and it should be separated out and submitted for identification and discussion. (Section7.2, task 7.3)

Eggshell

The fragments of eggshell should be identified and the type of species discussed in relation to its likely date. (Section7.2, task 7.5)

Coprolite

The identification of the possible coprolite should be confirmed and further investigation should be considered, if it is considered worthwhile as it was recovered from a ditchfill. Additional remains present in the bulk samples may be worthy of further investigation. (Section7.2, task 7.6)

Integrated recommendations for chemistry and magnetic susceptibility, phytoliths, pollen and soil micromorphology

Dr Richard Macphail, Dr Mike Allen, Dr John Crowther, Dr G. Gruise and Philippa Ryan

On the basis of this assessment, it is recommended that post-excavation analyses include further soil micromorphology and bulk analyses, and full counting and analysis of one pollen sample (Appendix 17 Table 1). At present, the phytolith assessment does not indicate that further analyses will provide additional insights (P. Ryan, pers. comm.). (Section7.2, task 7.7). Unfortunately, there is no potential for further mollusc analyses.

On the basis of assessed material, the following studies are suggested. Additional samples are also highlighted (Appendix 17):

- Subsampling, processing and manufacture of 8 new thin sections (from monoliths).
- new bulk analyses.
- Pollen counting and reporting on one sample (388 2/2 89.5cm).
- Soil micromorphology (description, counts, digital scanning, photomicrographic archive, microprobe where necessary) on 17 thin sections.
- Production of an integrated report.

Plant macrofossils (Section7.2, task 7.8)

Val Fryer

For the purposes of the assessment, the majority of the samples (with the exception of the cremation deposits) were sub-sampled (one 10l bucket from 30-40l samples). To supplement the data gained from these sub-samples, and for the purposes of analysis, it is recommended that the following samples are fully processed:

SFB 0013 – Samples 2, 5, 12, 13, 17, 18, 19 and 26 (Total of 21 buckets)
SFB 0740 – Samples 238, 239, 240 and 241 (Total of 4 buckets)
SFB 2009 – Samples 15, 16, 20 and 23 (Total of 6 buckets)
Posthole Building 2623 – Samples 528, 561, 564 and 566 (Total of 7 buckets)
Pit 3104 – Sample 525 (Total of 1 bucket)

Processing of these extra 39 buckets would take 4 days. The material from the collected assemblages would then be incorporated within an overall analysis of data from the site. Until the extra processing has been completed, it is unknown whether full quantification of the assemblages will be necessary, but it is currently considered unlikely. In the event that quantification is not required, analysis and preparation of a publication standard report should take no more than 4.5 days. If quantification does prove necessary, a further estimate will be provided at the earliest possible opportunity.

N.B. The above estimates will remain current until April 2009. After this time, a further estimate will be submitted upon written application. This needs to be checked.

Charcoal (Section7.2, task 7.8.3)

Charcoal from the Early Bronze Age cremation and the burnt flint deposits will be identified for species and fragments selected for absolute dating. Charcoal from the furnace pit 0735 will also be examined in order to select suitable fragments for dating.

5.2.5 Scientific dating

Radiocarbon dating (Section7.2, task 9.1)

A targeted programme of radiocarbon dating will be required in order to enhance the results from the main studies. Material will be obtained from samples taken on site specifically for radiocarbon dating, from charcoal, cereal and seeds recovered from the bulk samples and from residues on pottery (see Appendix 20).

The aim of the dating programme will be to sample a range of features to address relevant research priorities relating to the prehistoric pottery chronology, prehistoric funerary practices, the development of the early Anglo-Saxon settlement (in particular how early is the long-house, when did activity stop) and the chronological sequence for

the industrial activities (in particular, dating of the furnace pit). Potential questions to be addressed by, and subjects for, radiocarbon dating are included in the table below.

Across the site the main dating questions relate to dates of the prehistoric burials, the structural sequence of the early Anglo-Saxon settlement to obtain an adequate spatial and temporal spread of datable material across the site (date of the longhouse, the dates of the SFB's, the dates of the industrial features and the date of deposits in the hollow way). The aim of the dating programme is not just to obtain absolute dates for individual features but to identify sequences of activity that will enhance interpretation of the development of the whole site. In addition, the dating of charred residues on pottery can also be used to date the pottery sequence, while contributing to the dating of their context (e.g. SFBs).

It is envisaged that the dates will be submitted to the Scottish Universities Environmental Research Centre (SUERC) and advice on the sampling and use of statistical analysis of the results will be sought from Derek Hamilton at SUERC. Provision has been made within the budget to pay for his time.

Feature type	**Period**	**No of dates**	**Features selected for dating**	**Research questions**	**Potential**
Cremation	Neolithic	1	0513	Dating of the pottery	40g of cremated human bone should be sufficient for a satisfactory date
Cremation	LNeo/EBA	2	0815 and 0850	0815 contains a whole LNeo pot and 0850 EBA pottery. Dating will help with research into the LNeo/EBA transition	0815 contains >5mm charcoal and 0850 a smaller amount of <2mm charcoal, charred roots and cremated bone.
Inhumation	?EBA	1	0681	Is it contemporary with the cremations?	
Pit	?Rom	2	3087 3104	3087 has good pottery assemblage 3104 has a high grain assemblage typical of LIA/Roman period, but lies in area where it should be either EIA or ESax	Lots of charred grain
Pit	Later Bronze Age/EIA, Iron Age	6	2787, 2992, 3047 + three others	Pottery dating and to date the occupation on the site, in particular the LBA against the EIA	3047 and 3087 have planty of charcoal, 2992 not much, but may be sufficient if good quality.
Holloway 2160		10		To establish length of time infilling covered	Charcoal and seeds and animal bone from a range of deposits

Feature type	Period	No of dates	Features selected for dating	Research questions	Potential
'Long-house' 2623 and posthole building 3404	EAS?	10	2624, 3093 and 2606	To date the building	Only very small amounts of charcoal but these are sub-samples so more available. DON'T THROW ANY SAMPLES AWAY
SFB's	EAS	36 (2 samples from each SFB)	?		Plenty of material available DON'T THROW ANY SAMPLES AWAY
Fire pits	EAS	16 (2 samples from 8 features)	0721, 2077, 0596, 0148, 0467 and one more from top of slope	To date the use of the pits and assist in the defining the site sequence	Plenty of material available DON'T THROW ANY SAMPLES AWAY
Furnace pit	EAS?	3	0735	To date the of the smelting	Only very small amount in sub-sample but more is available to sieve - DON'T THROW AWAY
Residues from pots	EAS	8	TBC	To enhance the chronology of the pot typologies	
Contingency	EAS	5		In case the need for additional dates arises during the work.	
TOTAL		**100**			

Table 46. List of radiocarbon dates

Dendrochronological dating (Section7.2, task 9.2)

A single sample of wood, I56y from context 2229, part of the lower colluvial layers in 0025 is suitable for dendrochronological dating, which would date the deposition of the earliest deposits, and define the period of accumulation, thus informing the site phasing and dating.

6. Preliminary publication synopsis

The regional and national significance of the Anglo-Saxon activity merits publication as a monograph in the East Anglian Archaeology Series. A preliminary publication synopsis is included below.

6.1. EAA Publication synopsis

The following is a synopsis for publication of the archaeological excavations at Hartismere High School, Eye which were undertaken in 2007. Evidence of multi-period settlement and funerary activity was found, dating from the prehistoric through to the Early Anglo-Saxon period. The most significant findings are the remains of an Early Anglo-Saxon longhouse, a structure which is so far unprecedented in Britain, and substantial evidence of manufacturing and trading activity which also dates to this period. The post-excavation assessment (SCCAS report no 2012/067) describes this in detail, and indicates that the analysis will be of national and possibly international importance which will be suitable for publication as a monograph in the East Anglian Archaeology Series.

Chapter 1 - Introduction

- Circumstances of fieldwork
- HER data
- Geology and topography
- Documentary evidence
- Archaeological and historical background
- Methodology

3 pages text, 4 figures.

Chapter 2 - Pre Saxon activity -

- Earlier Neolithic - 0.5 page incl. 1 figure - phase plan.
- Earlier Bronze Age - 1 page, 3 figures - phase plan, cremation and grave plans, 2 plates.
- Later Bronze Age and Earlier Iron Age - 2 pages, 4 figures - phase plan, building plans, page of sections and 2-3 plates
- Iron Age - 0.25 page, 1 figure - phase plan
- Roman - 1 page, including mention of Roman context and finds distribution. 2 figures - Roman context, phase plan.

4.75 pages text, 11 figures, 5 plates

Chapter 3- Pre Saxon material culture -

- Introduction
- Prehistoric pottery 3-4 pages, 2 pages figs, 1 distribution plan, 2 tables
- Worked flint - 3-4 pages, 2 pages figs, 1 distribution plan, 2 tables
- Burnt flint - 1 page, distribution plan
- Fired clay – 1 page, distribution plan

- Prehistoric small finds – 1 page, 2 pages figs, 1 distribution plan
- Roman pottery – 2 pages, 3 tables, 1 distribution plan
- Roman cbm and fired clay – 1 page, 2 tables, 1 distribution plan
- Roman small finds – 2 pages coins, 2 pages other small finds, 1 distribution plan and 3 tables

17 pages text and 14 pages figs/distribution plans and 12 tables

Chapter 4- Pre Saxon economic evidence

- Introduction - 0.25 page
- Prehistoric faunal remains – 1 page, 1 page of tables, 1 distribution map
- Prehistoric human and cremated bone – 3 pages, 4 tables
- Prehistoric plant macrofossils – 2 pages, 3 tables
- Prehistoric soil morphology – 1 page, 1 table
- Roman faunal remains – 0.5 page, 1 table.
- Roman plant macrofossils – 0.5 page, 1 table

8.25 pages text, 1 distribution plan, 11 tables

Chapter 5 - The Anglo-Saxon settlement remains

- Introduction - 0.5 page, 1 figure
- Sunken featured buildings - 10 pages, 18 figures - building plans and sections, 5 distribution plots, 3 tables, 8 plates.
- Posthole buildings - 2 pages, 4 figures - plans and sections, 3 plates
- Other structures - 1.5 pages, 3 figures
- Industrial features - 4 pages, 15 figures - plans and sections and reconstructions, 1 distribution plot, 2 tables, 5 plates,
- Pits - 2 pages, 4 figures - plans and sections, 1 plate
- Gully 2160 - 2 pages, 8 figures - plans and sections, 3 distribution plots.

22 pages text, 62 figures/distribution plans, 5 tables, 17 plates

Chapter 6 - The Anglo-Saxon material culture

- Introduction
- The small finds - 27 pages (includes scientific analysis), 6 pages tables, 4 pages plates, 8 pages figures and 2 distribution plans
- The pottery - 12 pages, 6 pages figures, 4 distribution maps, 8 tables
- Fired clay (CBM) – 2 pages, 5 figures (1 page), 1 dist. map, 3 tables
- Burnt flint – Half a page, 1 distribution map, 1 table
- Querns – Half a page, 1 distribution map, 1 table

Slag - 2 pages, 2 tables, 1 distribution map, 1 page plates

44 pages text, 25 pages figures/distribution plans, 21 pages tables, 11 plates

Chapter 7 - The Anglo-Saxon economic evidence

- Introduction
- The faunal remains- 16 pages text, 10 pages tables, 2 distribution maps, 3 pages plates
- Fish and amphibian remains – 2 pages, 4 tables (2 pages), 3 distribution maps
- Eggshell and coprolites – Half a page
- Plant macrofossils – 6 pages, 9 pages of tables
- Charcoal analysis – Half a page, 1 table (half page)
- Pollen – 1 page, 1 page of tables
- Soil thin sections – 1 page and 2 tables (1 page)
- Bulk soil samples – 1 page and 1 table (1 page)
- Soil micromorphology – 1 page and 3 tables (3 pages)
- Integrated report – 3 pages

32 pages text, 5 distribution plans, 27.5 pages tables, 3 plates

Chapter 8 - Phasing, analysis and discussion of site activity

Introduction

Dating evidence (radio-carbon dates, evidence from small finds)

Phasing

Patterns of activity and site organisation (include combined finds and enviro distribution plans for Saxon period)

6 pages text, 3 figures

Chapter 9 - Synthesis and conclusions

The site and local, regional and national contexts

5 pages text.

Total volume size, 142 pages text, 132 figures/distribution plans, 67 pages of tables, 36 plates = 377 pages.

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Plate 1. Sample hole through colluvium at the bottom of the slope, looking south, 1m scale

Plate 2. Pot within cremation 0815 during excavation, looking east, 30cm scale

Plate 3. Cremation 0839, looking east, 30cm scale

Plate 4. Burial 0682, looking south, 30cm scale

Plate 5. 'Long house' 2653 looking west, 2m scales

Plate 6. SFB 0013 looking east, 2m scales

Plate 7. SFB 0191 looking east, 2m scales

Plate 8. SFB 0192 looking south, 2m scales

Plate 9. SFB 0221 looking south-west, 2m scales

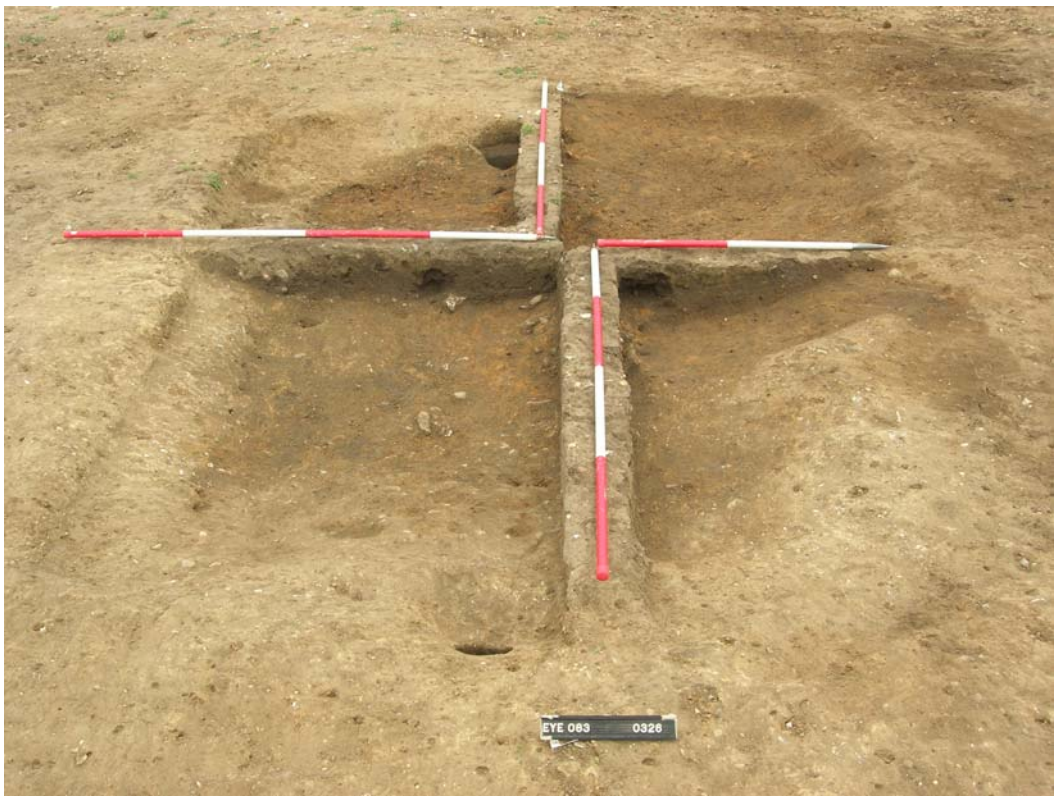

Plate 10. SFB 0326 looking east, 2m scales

Plate 11. SFB 0692 looking east, 2m scales

Plate 12. SFB 0740 looking north, 2m scales

Plate 13. SFB 0845 looking west

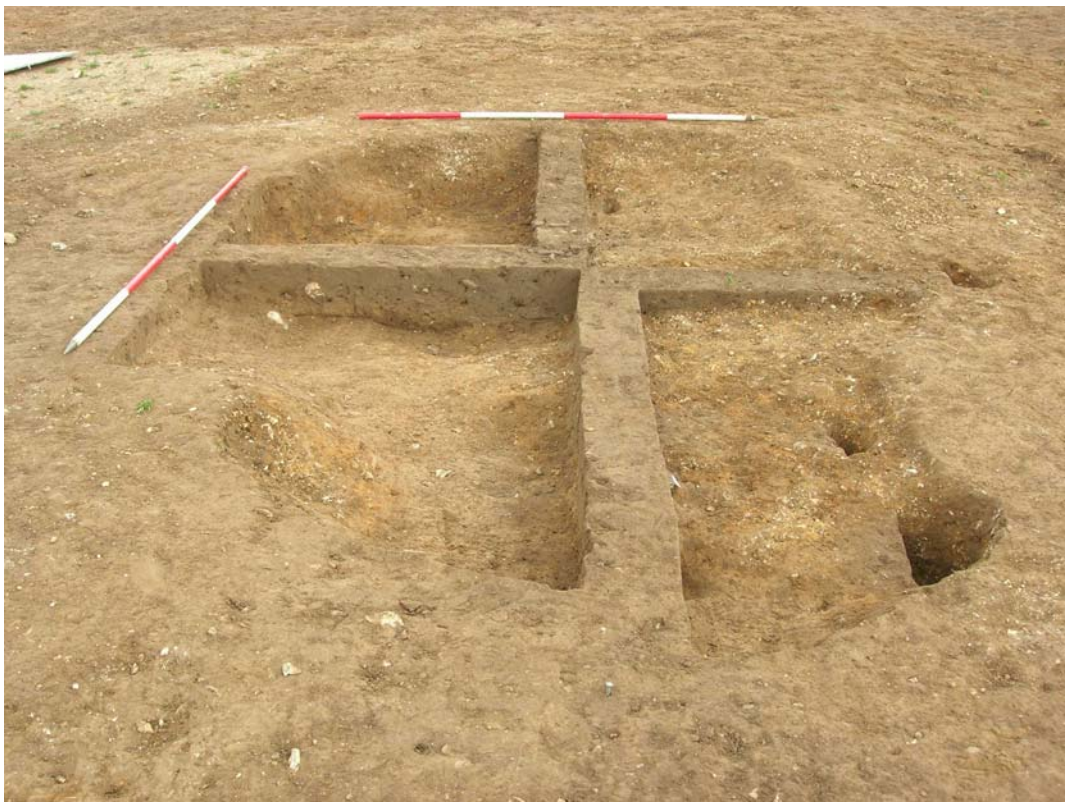

Plate 14. SFB 0876 looking east, 2m scales

Plate 15. SFB 0980 looking north-west, 2m scales

Plate 16. SFB 2009 looking east, 2m scales

Plate 17. SFB 2503 looking south, 2m scales

Plate 18. SFB 3108 looking south-west, 2m scales

Plate 19. SFB 3125 looking west, 2m scales

Plate 20. Pit 0467 before excavation, facing south, 2m scale

Plate 21. Pit 0467, facing north during excavation, 2m scale

Plate 22. Pit 0596, before excavation, looking west, 2m scale

Plate 23. Pit 0596 during excavation, looking west, showing the charcoal and burning beneath the flints, 2m scale

Plate 24. Slag pile 0735, looking east, 30cm scale

Plate 25. Hollow way 2160 during excavation looking south, 2m scale

Plate 26. Pits in hollow way 2160 during excavation (pit 2169), looking east, 2m scale

Plate 27 Pits in hollow way 2160 during excavation (pit 3304), looking south, 2m scale

Plate 28 Section across pit 3304 in hollow way 2160, looking north, 2m scale

Plate 29. Section of pit 3344 in hollow way 2160, looking south, 2m scale

Plate 30. Backfilling hollow way 2160 after the completion of excavations, looking south

Plate 31. Smelting slag in pit 0735 showing ashy deposits, looking east, 30cm scale

Plate 32. Smelting slag in pit 0735 after excavation, looking south, 1m scales

Plate 33. Fragment of human mandible showing unhealed cut.

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Rhodri Gardner

Tel: 01473 581743 Fax: 01473 288221

rhodri.gardner@suffolk.gov.uk

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