

HESLINGTON HILL

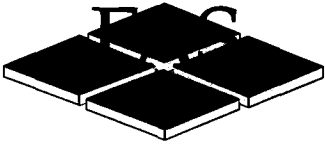
HESLINGTON

YORK

POST-EXCAVATION ASSESSMENT

REPORT
JUNE 2003

EXCAVATION AND EVALUATION SECTION



POST-EXCAVATION ASSESSMENT
HESLINGTON HILL
HESLINGTON

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REPORT
June 2003



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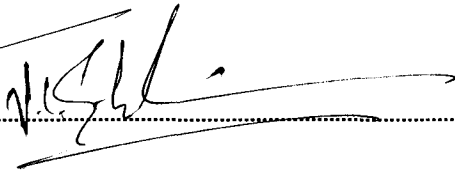
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Summary

A watching brief was undertaken in two phases by Field Archaeology Specialists Ltd on behalf of Portland Planning Consultants for the University of York during the construction of a new car park (Intervention 1) and medical school building (Intervention 2) on the northern part of the University of York campus, Heslington, York. Fieldwork was carried out during September and October 2002.

Both interventions produced evidence for intact archaeological deposits sealed beneath make-up material deposited during landscaping of the University campus in the 1960s. These deposits include material which indicates the presence of Roman agricultural activity, as well as occupation activity dating to the Anglian period, (c.550 - 650 AD). Finds include pottery, glass beads, metal objects, loomweights and metal-working debris as well as animal bone.

This report presents the results of the assessment of the potential of the deposits and associated assemblages for further analysis and research.

Acknowledgements

Field Archaeology Specialists Ltd would like to thank Jane Parkin of Portland Planning Consultants, Eric Hannah of the Strategic Projects Office at the University of York, the staff of Houseman and Falshaw and Dorman Long, and John Oxley, Principal Archaeologist of City of York Council for their help and support throughout the project.



1.0 INTRODUCTION

This document reports on the post-excavation assessment of the results of a watching brief undertaken by Field Archaeology Specialists Ltd on behalf of Portland Planning Consultants for the University of York. The watching brief was carried out in two stages during the construction of a new car park (Intervention 1) and a new medical school building (Intervention 2) on the northern part of the University campus, Heslington, York. The fieldwork was carried out during September and October 2002.

1.1 LOCATION AND LAND USE

The proposed car park site (NGR SE 6227 5086) and medical school (NGR SE 6240 5085) lie to the north of University Road. The car park is less than 100m to the east of the mound known as Siward's Howe and immediately to the north of the new computer science building, the medical school is slightly to the east of this (Figure 1). Prior to the construction of the car park, the southern part of the site comprised a tarmac road forming a loop around several parking spaces and leading eastwards towards Alcuin College accommodation. From this road the ground was landscaped up some 3m to the northwestern edge of the site which was defined by a recently constructed cycle track. Beyond this the land is still apparently undeveloped, covered with grass and some trees and sloping further upwards to the northwest. On the northeastern boundary of the car park was a group of trees set in a steep hollow, and on the eastern boundary was a large excavated hollow used for dumping waste vegetation. Beyond this to the east the ground sloped down to a temporary car park, which was the site of the new medical school.

1.2 AIMS AND OBJECTIVES

The aim of the watching brief was to identify and record any archaeological deposits or features disturbed by the development which could give context to previous finds in the area, or which could help with the interpretation of the mound, Siward's Howe, which despite being a Scheduled Ancient Monument, has never been dated or characterised. The post-excavation assessment report represents a statement on the analytical research potential of the deposits and finds from the watching brief in accordance with project management guidelines published by English Heritage (Managing Archaeological Projects 1991).

1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The site lies in an area of 'high archaeological potential' (Perring 1999) and the area has been the subject of a number of studies over the last few years, particularly since the proposals for development of the University campus to the north of University Road. A study of the impact of these proposals on the archaeology of the area was prepared by Cross in 1985, and a further assessment was undertaken by Perring (1999).

Chance finds from the area include scatters of flintwork and pottery from the prehistoric to medieval periods (Cross 1985). A hoard containing over 2000 Roman coins buried in a late 4th century Crambeck ware vessel was discovered near Alcuin College (Carson and Kent 1971) and furnished Roman burials, including a gypsum burial have been found to the east near St Paul's Church, Heslington (Gomme 1902, Sheahan and Whellan 1856). An unaccompanied inhumation came to light to the southwest of Siward's Howe in 1980 (YAT, 1980).



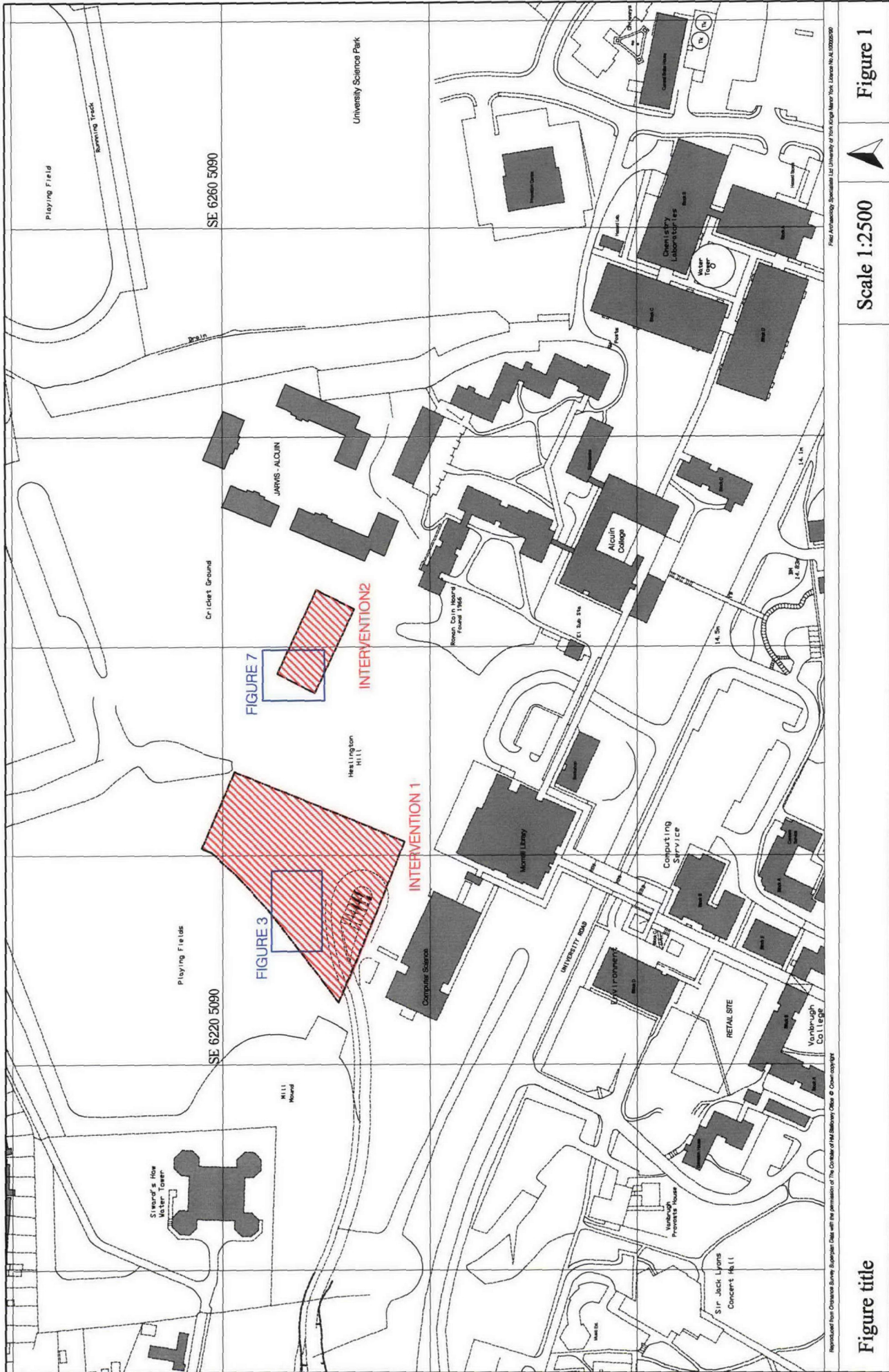


Figure 1



Scale 1:2500

Figure title

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The main focus of interest in this area is the large mound, presently referred to as Siward's Howe. This is a large earthwork (Scheduled Ancient Monument NY205) over 30m in diameter and rising up to 6m above the crest of the ridge on which it is sited. It has never been excavated and little is known about it, although it is assumed from its size and position to be a burial mound of prehistoric or early medieval date, later used as the base for a windmill.

It is also the name of Siward's Howe, from the Old English *hlaew*, that has been used to suggest its function as an early medieval burial mound. However, consideration of historical and cartographic evidence indicates that this interpretation, based on place-name evidence alone, is unfounded, and that there is no direct evidence to suggest that the mound pre-dates its use as a windmill base from the 18th century onwards (Cross 1985; Ramm 1966).

Siward's Mill Hill, or Siward's How Mill, is mentioned in documents of the late 15th and 16th centuries, indicating the use of this monument as a mill base at this time (Cross 1985; Ramm 1966). Ramm (1966) has demonstrated that these references, in documents of 1484, 1546 and 1587, actually refer to the mound in Fulford, commonly known as Lamel Hill. In boundary descriptions of 1484, recorded in Drake's *Eburacum*, mention is made of 'Seward How-Mill'. Ramm's study of these descriptions does seem to suggest that the feature referred to does not lie on the site in Heslington, but is more likely to refer to Lamel Hill. This is further supported by the document of 1546, which mentions 'a hill and waste called Seward Myll Hill where a windmill formerly stood, in Fulford beside York' (L and P. Henry VIII, xxi (I); in Cross 1985, 14).

Excavations of Lamel Hill in 1847 and 1848 revealed that this mound was in fact used as an early medieval inhumation cemetery, providing a context for the attribution of a *hlaew* name to this monument (Thurnam 1849; Tweddle *et al.* 1999, 170). It seems, therefore, that any conclusions made based on the place-name 'Siward's How' must refer to Lamel Hill, rather than the mound that currently bears this name.

The mound at Heslington is first referred to, apparently erroneously, as Siward's Mount, on the Ordnance Survey map of 1853 (Figure 2) and as Siward's How on the 1891 edition. The identification of this mound as 'Siward Houe' is attributed by Thurnam to R. Davies, apparently based on the documents published by Drake (Thurnam 1849, 29). Prior to this, it seems that the mound at Heslington was generally referred to simply as Heslington Mount. This is the case on the 1846 map by Newton, while maps by Greenwood (1818) and White (1785) label the mound as Mill Hill, illustrating its use at this time. Similarly, on Lund's map of 1772, the mound is marked as 'Mill Hill and trees' (Ramm 1966, 584). On the basis of this evidence, and the historical sources, both Ramm and Cross conclude that, without further evidence, interpretation of Siward's Howe, Heslington, as a burial ground, remain spurious (Cross 1985, 14; Ramm 1966, 587).

At Lamel Hill, c.720m to the west, excavations undertaken during the mid-19th century revealed inhumation burials and a possible urned cremation (Thurnam 1849). The nature of this mound and cemetery is not easy to interpret. The 1848-9 excavations revealed that the main make-up of the mound contained disarticulated human remains, with some animal bone and metal artefacts. At a level of 10.5-12 feet (3.15-3.60m) below the summit of the mound, Thurnam identified a horizon of articulated human remains, at 'regular intervals', orientated west-east. Some 20 to 30 burials were recovered. In the centre of the mound, a single, upright urn was revealed



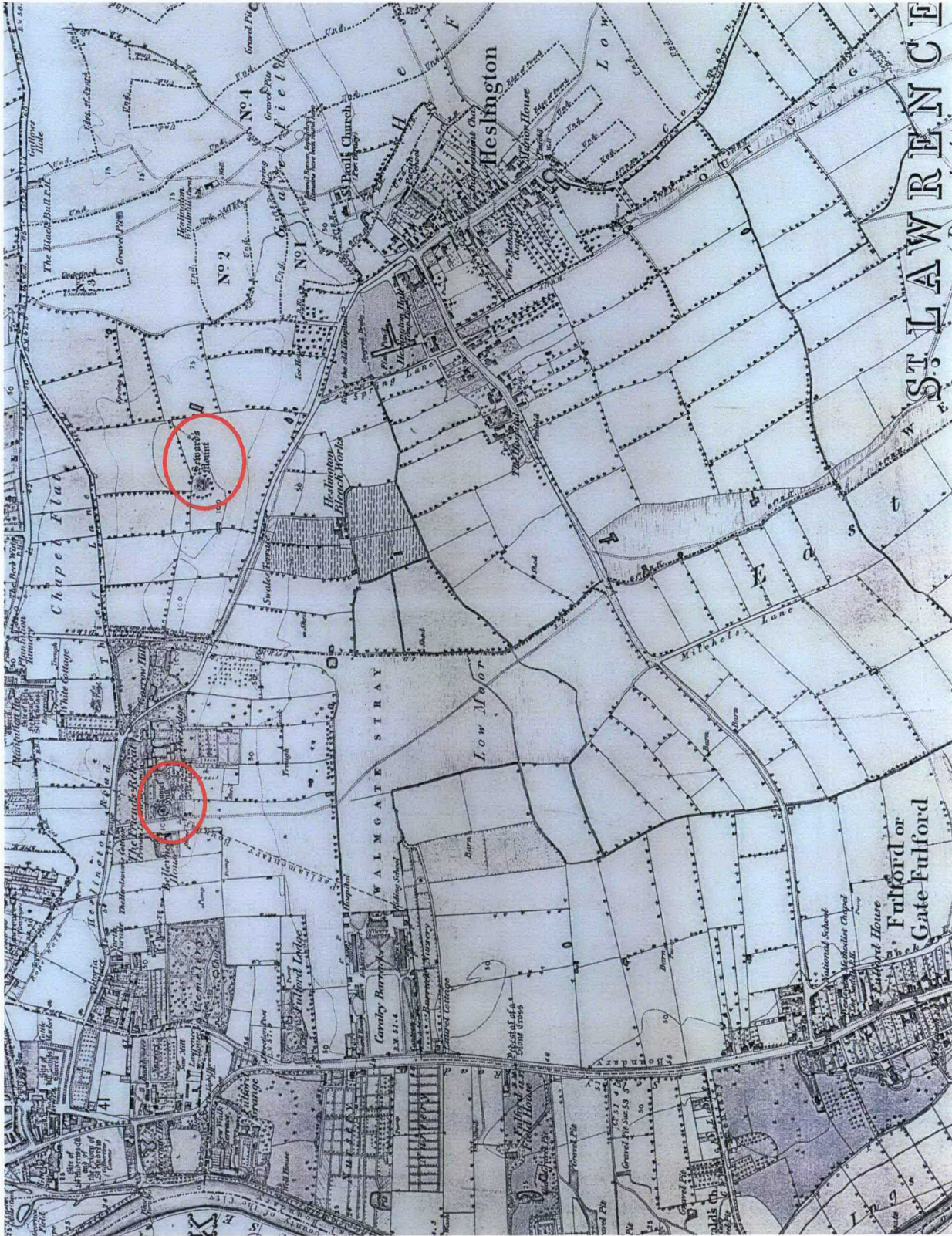


Figure 2 Extract from the Ordnance Survey map of 1853 showing the location of Seward's Howe in relation to Lamel Hill

'raised only a few inches above the level of the skeletons', which does not appear to have contained any cremated remains (Thurnam 1849, 36). Several iron objects were recovered from the disturbed make-up of the mound, and associated with the skeletons, which appear to have included iron fittings (corner pieces, hinges, and lock plates) that would suggest burial in chests (Tweddle *et al.* 1999, 233).

The disturbed nature of the material has been attributed to the heightening of the mound by the Parliamentarians in 1644 (Thurnam 1849, 36; Tweddle *et al.* 1999, 233). Thurnam remained convinced that there would originally have been a mound erected above these burials, as the skeletons were contacted some three feet above the surrounding fields to the north, and seven or eight feet above fields on the south side (due to the slope of the land). He later states, however, that 'the cemetery had formerly a much greater superficial extent, and that its outskirts were for some reason dug up and piled on the central part, which was allowed to remain undisturbed' (Thurnam 1849, 124). A layer of 'moist black matter', containing burnt human bone and charcoal, located some one or two feet above the inhumations is interpreted as having been, at one point, the ground level over the site (Thurnam 1849, 38).

The date of the cemetery has not been firmly ascertained, although Thurnam strongly suggests a 7th-9th century date (Thurnam 1849), and this has generally been accepted (Tweddle *et al.* 1999, 233). The presence of the urn is not fully explained in his report. He notes that there can be 'little doubt of its having been made by those who had been instructed in the art of fictile manufacture as practised by the Romans' (1849, 126). However, he also notes that, as the Saxons emulated Roman ceramics and reused Roman pottery, it is 'not improbable that this urn would have contained the ashes of some Northumbrian Saxon' or that it might even represent an empty urn, deposited when the body could not be recovered (Thurnam 1849, 133). In the absence of any human remains, or datable material, such suggestions must remain highly tentative. Others (Tweddle *et al.* 1999, 233) have read Thurnam's finds as demonstrating that the mound was of Roman date, subsequently reused as an inhumation cemetery, although this too, is recognised as tentative. The use of chests for burial, paralleled at other known Christian cemeteries of the 7th to 9th centuries (Ripon, Dacre, Repton and Monkwearmouth: Tweddle *et al.* 1999, 233), the orientation of the bodies and the fact that the cemetery is not located in an established ecclesiastical burial ground have all been used to support a late Anglian date.

In the 1980s, York Archaeological Trust carried out excavations at Belle Vue house, close to the site of Lamel Hill, which revealed further inhumations, also oriented west-east. Some 38 individuals were identified, nine of which had apparently been decapitated or mutilated (Tweddle *et al.* 1999, 172). Finds from this site were sparse, but included a probable post-Roman knife (found with a burial), one sherd of Anglian pottery, and significant quantities of Roman tile, pottery and window glass, and a sarcophagus lid. These finds seem likely, though not certainly, to be part of the Lamel Hill cemetery, and also attest significant levels of Roman activity in this area.

The date of construction of a mill on Heslington's Siward's Howe is not known. Two windmills stood to the northeast of Heslington village in 1787 (Tuke's Map of York: in Allinson 1976, 72), one of which seems likely to represent this mound. This, with the marking of 'Mill hill and trees' on Lund's 1772 map indicate a date at least as early as the late 18th century, and likely to be earlier.

During the medieval and post-medieval periods the area of Heslington Hill appears to have been used for



agriculture and extant ridge and furrow survived to the east of Siward's Howe until 1997, when the computer science block was built and some landscaping took place behind it. Topographic surveys of Heslington Hill (FAS 1997) and of Siward's Howe (Short 1993) suggest that the ridge and furrow post-dated the mound, and Copp (FAS 1997) suggests that the ground to the southeast and east of the mound was completely remodelled even before the computer science block was built. A geophysical survey (FAS 1997) confirmed this, particularly in the area immediately to the northwest of the J.B. Morrell Library.

As well as the assessments and surveys, various small-scale excavations and watching briefs have been undertaken: a watching brief by Cross (1985b) on the construction of a NEGAS governor kiosk on Windmill Lane suggested that the land to the east of the present site had also been extensively landscaped during or since the initial construction of the University in the early 1960s; three small trial trenches excavated on the site of the computer science block produced no datable archaeological remains (FAS 1997); a watching brief on the construction of the cycle path which forms the northern boundary of the car park failed to identify any archaeological features and significantly, did not encounter any evidence for a ditch around Siward's Howe (OSA 2001).

2.0 FIELDWORK PROCEDURE

2.1 INTERVENTION 1

The fieldwork was undertaken in two phases. The first phase involved stripping of the topsoil, using a wheeled back-acting mechanical excavator fitted with a toothless ditching bucket under strict archaeological supervision. However, there was very little build-up of topsoil and it soon became apparent that the whole area had been recently landscaped. Since the underlying topography was clearly variable beneath the landscaping, it was decided to resume the watching brief during groundworks for the car park, since there was a possibility of deposits surviving beneath areas of made-up ground.

The second phase of the watching brief monitored machine excavation of the western end of the site and monitoring continued until it was clear that archaeological deposits would not be affected beneath a large build-up of levels to the east. Whilst all mechanical excavation was undertaken using a toothless ditching bucket, visibility was often very poor due to the diverse nature of the subsoil. When archaeological features and deposits were identified, the immediate area was cordoned off to allow hand excavation and recording to take place.

2.2 INTERVENTION 2

Piles for the foundation of the medical school had already been sunk when the watching brief was undertaken, and the hardcore had been removed from the surface of the temporary car park which had previously occupied the site. The soil between the piles was then excavated to a depth of *c.*0.70m beneath the car park surface using a 360° mechanical excavator fitted with a toothless bucket. The piles were in clusters of three or four spaced *c.*4.5m-5.0m apart allowing recognition of deposits in plan. When archaeological deposits were recognised, the area was set aside for hand excavation and recording.



The recording system followed *Field Research Procedure* (Carver 1990), the standard operating system employed by Field Archaeology Specialists. A single index was created for contexts, starting at C1000, and for features starting at F1. A local site grid was established during fieldwork and later aligned to the Ordnance Survey National Grid. All co-ordinates in this report relate to the National Grid and all heights are expressed in metres above Ordnance Datum (AOD).

3.0 FIELDWORK RESULTS

3.1 INTERVENTION 1

3.1.1 Topsoil stripping

The initial stripping of the topsoil showed that there was very little build-up of soil and turf, with modern debris immediately beneath it suggesting that the whole area had been recently landscaped, probably at the time of the construction of the computer science building and the access road to the north of it in 1997, or even when the cycle path to the north of the site was built in 2001.

Beneath the patchy topsoil over the entire area was a layer of mixed orange-brown clayey sand (C1000) containing fragments of stone such as that used as hardcore for road construction, fragments of wooden plank and plastic sewer pipe, tin cans and plastic and paper waste. At the northern edge of the site, the highest part, there was a build-up of some 0.5-0.6m of this deposit and it varied in depth over the rest of the site, although generally it appeared thicker towards the eastern side. On the southern edge in a strip alongside the tarmac road, subsoil was visible immediately beneath the topsoil.

Although no archaeological features were visible during this operation, a darker soil was seen beneath this deposit in one or two places where the machine went a little deeper, suggesting that there was some hope of deposit survival beneath the landscaping. It was therefore decided to continue the watching brief during the construction of the car park.

3.1.2 Construction

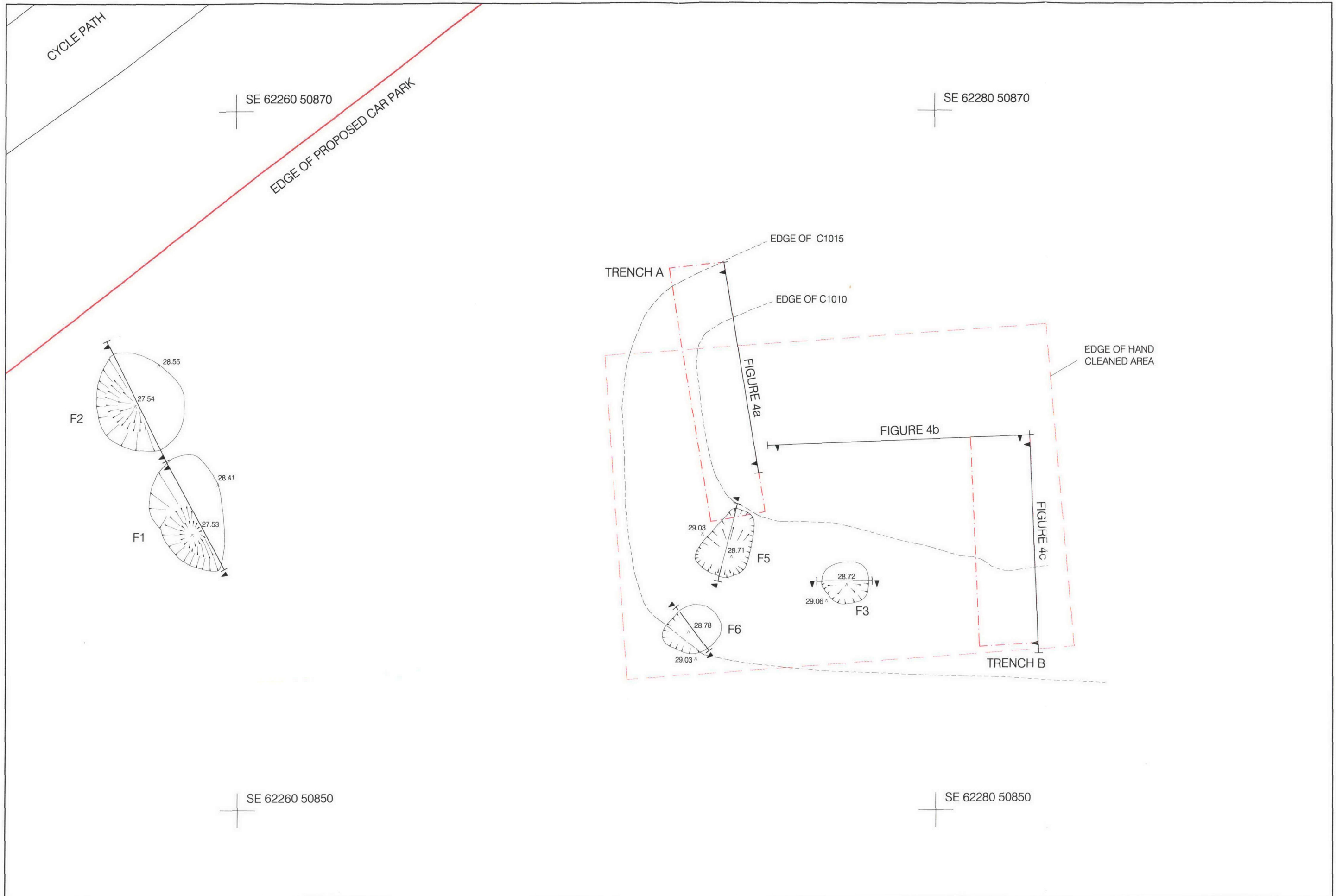
During the construction phase of the car park, at the western end of the site, nearest to Siward's Howe, the truncation of ground level necessary during groundworks was at least 2m, whereas towards the east the required levels rose and the extent of truncation was less. As a result archaeological deposits were only encountered on the western side of the area (Figure 3).

Despite the variable nature of the subsoil, several features were defined as well as an extensive depression containing two archaeological deposits. Although the areas containing features were hand cleaned, definition on the surface was difficult and the presence of some intrusive material may be due to machine excavation.

Deposits

Covering the subsoil over most of the area investigated was a layer of mottled clayey sand, C1015, containing sparse, tiny fragments of poorly preserved animal bone and abraded Roman ceramic. The nature of this layer was reminiscent of a ploughsoil, although it was only recorded where it dished into a large depression and





Intervention 1 - map of features and deposits

Scale 1:100



Figure 3

reached a depth of 0.60m. This depression was initially allocated F4, and an attempt was made to define its extent by hand-cleaning the surface of as large an area as possible within the constraints imposed by plant access to the site. Two machine cut trenches, A and B, showed that it petered out or was truncated to the north and south respectively, but it clearly continued towards the east beneath previously landscaped ground and further make-up for the new car park (Figure 4). The depression, F4, has been interpreted as a natural undulation in the subsoil with C1015 dishing into it before it was backfilled with a deposit of dark brown mixed clayey sand (C1010) containing dumps and concentrations of animal bone, ceramic material and other finds (Plate 1).



Plate 1 C1010 south facing section (Scale 1.0m)

Due to the mixed interface between C1010 and C1015 an arbitrary definition spit was allocated (C1011) in order to reduce the possibility of contamination. Additionally, finds from surface cleaning of C1010 were allocated to a recovery context (C1014). C1010 was at least 0.5m deep and was excavated in an area of approximately 32m². Although the deposit was fairly homogenous, finds were recovered from concentrations thought to represent different lenses and dumps within it and in section a possible horizon of material was identified that was not detectable in plan.

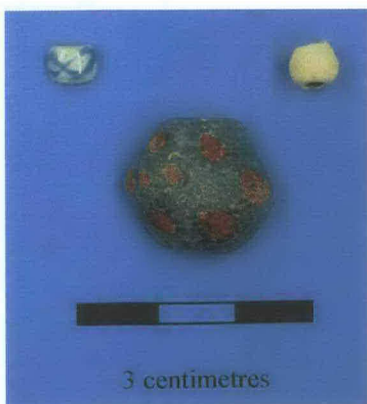


Plate 2 Glass beads recovered from Intervention 1 and 2

The pottery assemblage (Appendix A) included at least seven vessels dated to the 6th century, two of which are decorated in the form of applied bosses or stamps have been reported as funerary urns, and the other five, although undecorated are also thought to have had a funerary function due to the presence of the two decorated urns. Other finds which could be indicative of a funerary deposit include an iron knife (Appendix B), and two glass beads (Plate 2, top right and bottom centre), dated to the mid-6th to mid-7th century (Appendix C). However, no human bone, cremated or otherwise, was observed or recovered from this context. Interestingly, finds clearly associated with domestic occupation activity were also present including animal bone (Appendix D), a ceramic loomweight, a rubber stone (see Appendix B), and metal-working residues (Appendix E).

Trench A - west facing section

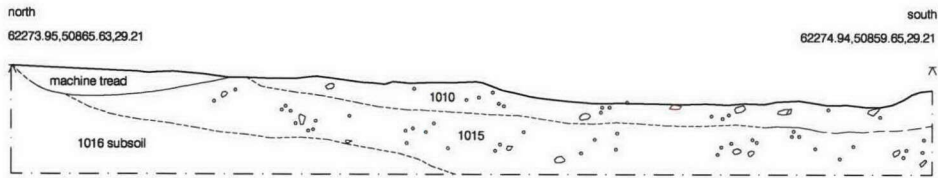


Figure 4a

South facing section

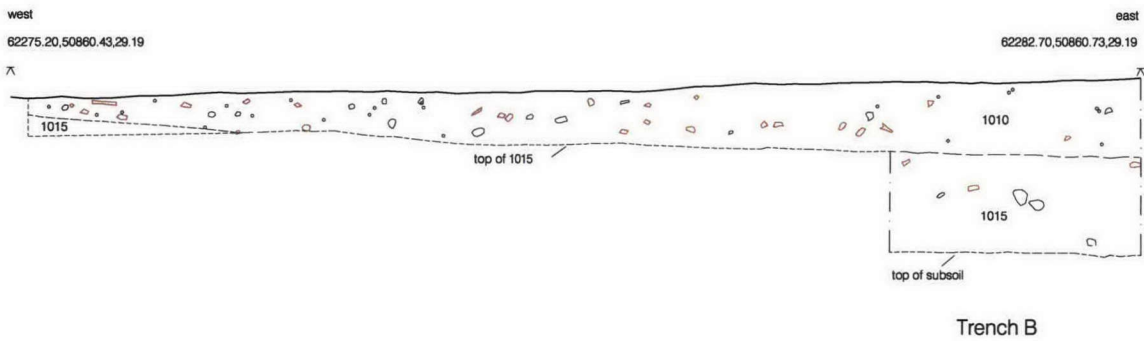
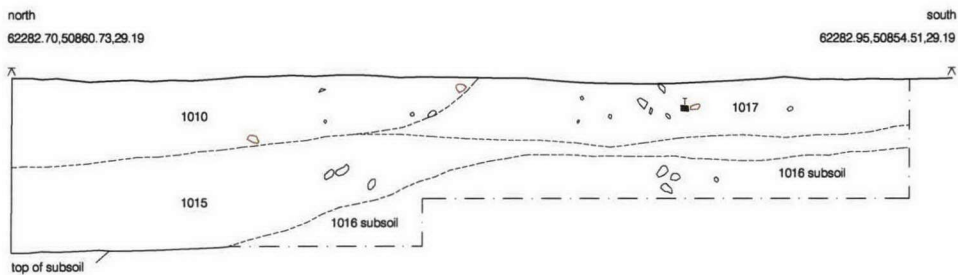


Figure 4b

Trench B - west facing section



- ▷ animal bone inclusion
- stone inclusion

Figure 4c

A small amount of Roman pottery and ceramic building material (Appendix F) was recovered from this context but it was mainly in small abraded fragments thought to derive from the underlying ploughsoil, C1015. Occasional small abraded fragments of plain medieval tile and one sherd of an 11th-12th century cooking pot are thought to be intrusive to the context, possibly the result of later ploughing. Some lithic material was also retrieved but represents residual prehistoric material (Appendix G).

Pits

Towards the western side of the area investigated were two discrete pits, F1 and F2 (Figure 5). F1 was approximately 1.00m in diameter and 0.90m deep, with a shallower shoulder on the northern edge. It was backfilled with two deposits, C1002, tipping in from the south, followed by C1001, a dark greyish-brown clayey sand containing animal bone and one sherd of samian. It is therefore possible that this pit dates to the Roman period. Immediately adjacent to this was another pit, F2, oval in shape measuring 1.30m x 1.50m and c.1.00m deep. This was backfilled with a series of deposits C1004 - C1008. After the initial silting, C1007, a thick deposit of silty sand (C1006) tipped in from the north and contained fragments of animal bone and several sherds of Roman grey ware pottery. C1005 and C1008 were deposited over this and C1004 dished into the surface of the backfilled feature. C1004 was a dark grey sandy clay deposit with animal bone and ceramic fragments dating to the Roman and Anglian periods.

During excavation these pits were thought to be of Roman date, however, assessment of the pottery has confirmed that some of the material from C1004 belongs to the Anglian period. This suggests either that F2 could belong to the Anglian period but contains residual Roman material, or that C1004 may represent the remains of the Anglian layer C1010, dished into the top of a backfilled Roman pit. The animal bone assemblage from these two pits is certainly different in character and preservation to that from the Anglian layers, but this may be due to the fact that bone survives better in a confined pit than in a midden layer, rather than to any cultural differences between periods.

Other pits excavated in Intervention 1 (Figure 6) were all in the vicinity of the depression containing C1010. F3 and F6 were superficially defined by concentrations of animal bone on the surface of C1015. On excavation they proved to be deposits within this layer rather than clearly cut features. F5 was another small amorphous scoop but contained a deposit (C1012) similar to C1010 with a high concentration of animal bone and occasional ceramic material. It is possible that this feature represents a depression in the surface of C1015 which then became filled with the same deposit as C1010.

Table 1 Intervention 1, summary of contexts

Context	Feature	Type	Description	Munsell
1000	-	make-up	mixed orange-brown clayey sand make-up layer containing modern rubble and construction debris	-
1001	1	backfill	dark greyish-brown sandy clay with frequent charcoal flecks, some gravel and fragments of animal bone and ceramic	10YR 4/2
1002	1	backfill	mixed brown sandy clay with frequent charcoal flecks, some gravel and fragments of animal bone	10YR 4/3

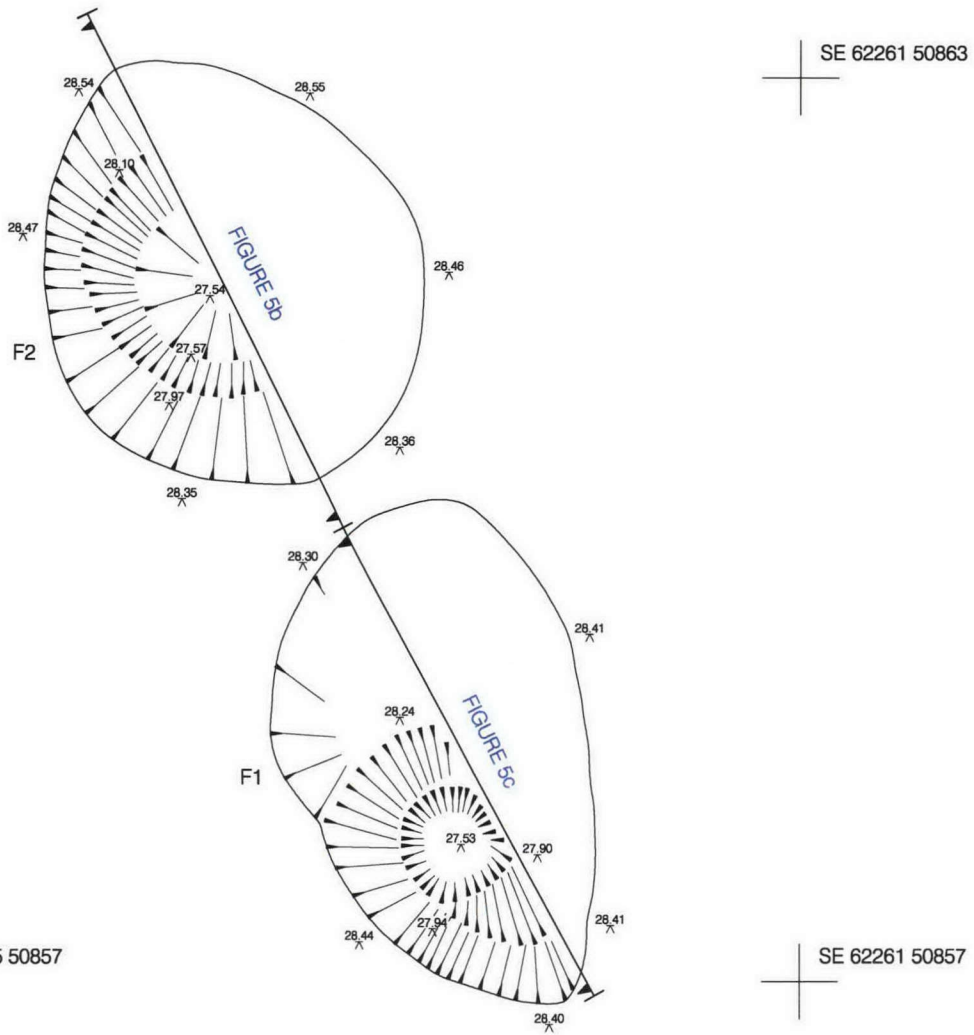


Figure 5a

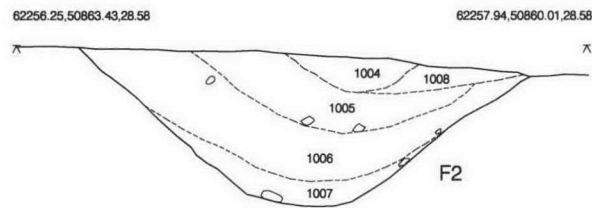


Figure 5b

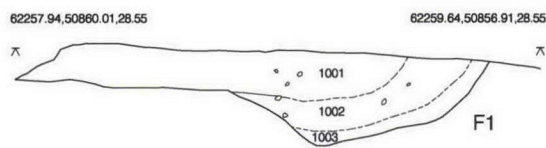


Figure 5c

Intervention 1 - plan and sections of F1 and F2

Scale 1:50



Figure 5



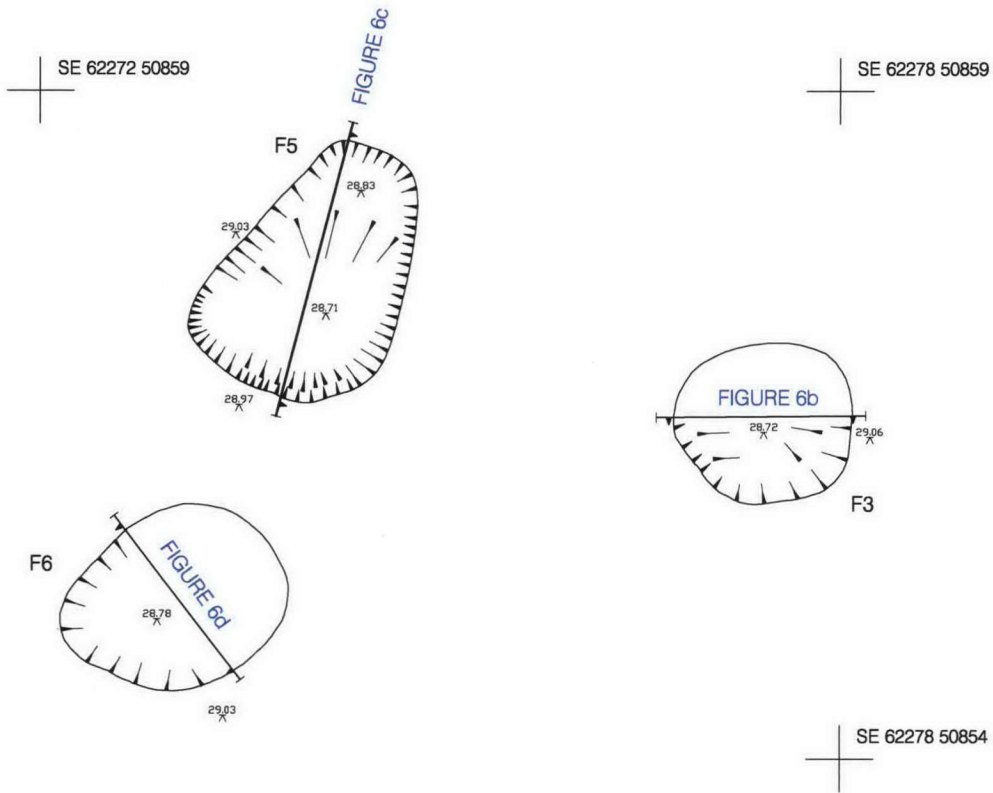


Figure 6a

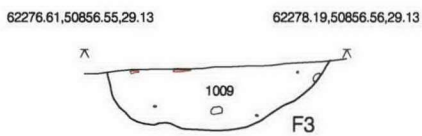


Figure 6b

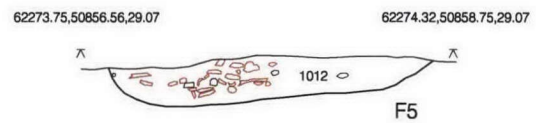


Figure 6c

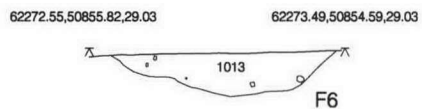




Figure 6d

-  animal bone inclusion
-  stone inclusion



Context	Feature	Type	Description	Munsell
1003	1	backfill	strong brown clayey sand with some large fragments of decayed sandstone, occasional gravel, fragments of animal bone and flint	7.5YR 4/6
1004	2	backfill	dark grey sandy clay with occasional gravel, charcoal flecks and ceramic	10YR 4/1
1005	2	backfill	greyish-brown clayey sand with some gravel and Fe mineralisation	10YR 5/2
1006	2	backfill	yellowish-brown silty clay with occasional gravel and ceramic	10YR 5/6
1007	2	backfill	brown silt sand with frequent pebbles	10YR 4/3
1008	2	backfill	dark greyish-brown clayey sand with rare gravel inclusions	10YR 3/2
1009	3	backfill	dark yellowish-brown silty sand with flecks of charcoal, fragments of animal bone and occasional gravel	10YR 3/6
1010	(4)	layer	mixed dark brown clayey sand with frequent charcoal flecks and gravel, contains frequent animal bone fragments, Roman pottery and CBM, early medieval pottery, slag, metalwork, and fragments of ceramic loomweight	7.5YR 3/2
1011	(4)	recovery	context allocated to the mixed interface between contexts 1010 and 1015	-
1012	5	backfill	mottled dark brown sandy clay with frequent charcoal flecks, a high concentration of animal bone, occasional pebbles and ceramic	7.5YR 3/3
1013	6	backfill	dark yellowish-brown silty sand with flecks of charcoal, fragments of animal bone and occasional gravel	10YR 3/4
1014	(4)	recovery	context allocated to finds recovered from cleaning the surface of contexts 1010 and 1015	-
1015	-	layer	mottled brown clayey sand with occasional charcoal flecks and gravel and some animal bone	7.5YR 4/3
1016	-	subsoil	variable, composed predominantly of soft orange-brown sand with bands of clean grey clay, dark brown gravelly clay, dark red sandy clay and dark red gravelly clay. Also contains streaks and patches of black manganese stained sand and some layers of running sand	
1017	(4)	layer	brown clayey sand layer with frequent charcoal flecks, very few inclusions of gravel (= C1010?)	7.5YR 4/2

Table 2 Intervention 1, summary of features

Feature	Type	Description
1	pit	sub-oval pit measuring 3.20m x 1.90m x 0.80m deep. Steep sided with a shallow shelf to the north
2	pit	sub-circular pit measuring 3.10m in diameter, 1.00m deep. Regular sided
3	?pit	possible cut but probably a deposit within C1015
4	depression	large depression at least 12m wide N-S, eastern limit not seen, up to 1.15m deep, containing deposits C1010 and C1015.
5	?pit	possible cut but probably a small natural depression filled with a deposit similar to C1010
6	?pit	possible cut but probably a deposit within C1015

3.2 INTERVENTION 2

Whereas the construction of the car park had raised levels at the eastern end of Intervention 1, the construction of the medical school building necessitated cutting into this made-up ground at the western end of Intervention 2. This provided a north-south section which showed that at least 2.0m of mixed material (equivalent to C1000 in Intervention 1) had been dumped over an earlier but still recent ground surface composed of compacted hardcore. The base of the preparation for this surface was at *c.*25.5m AOD, and since archaeological deposits discovered immediately to the east of the section were seen at *c.*24.8m, it is likely that they survive here and beneath the new car park.

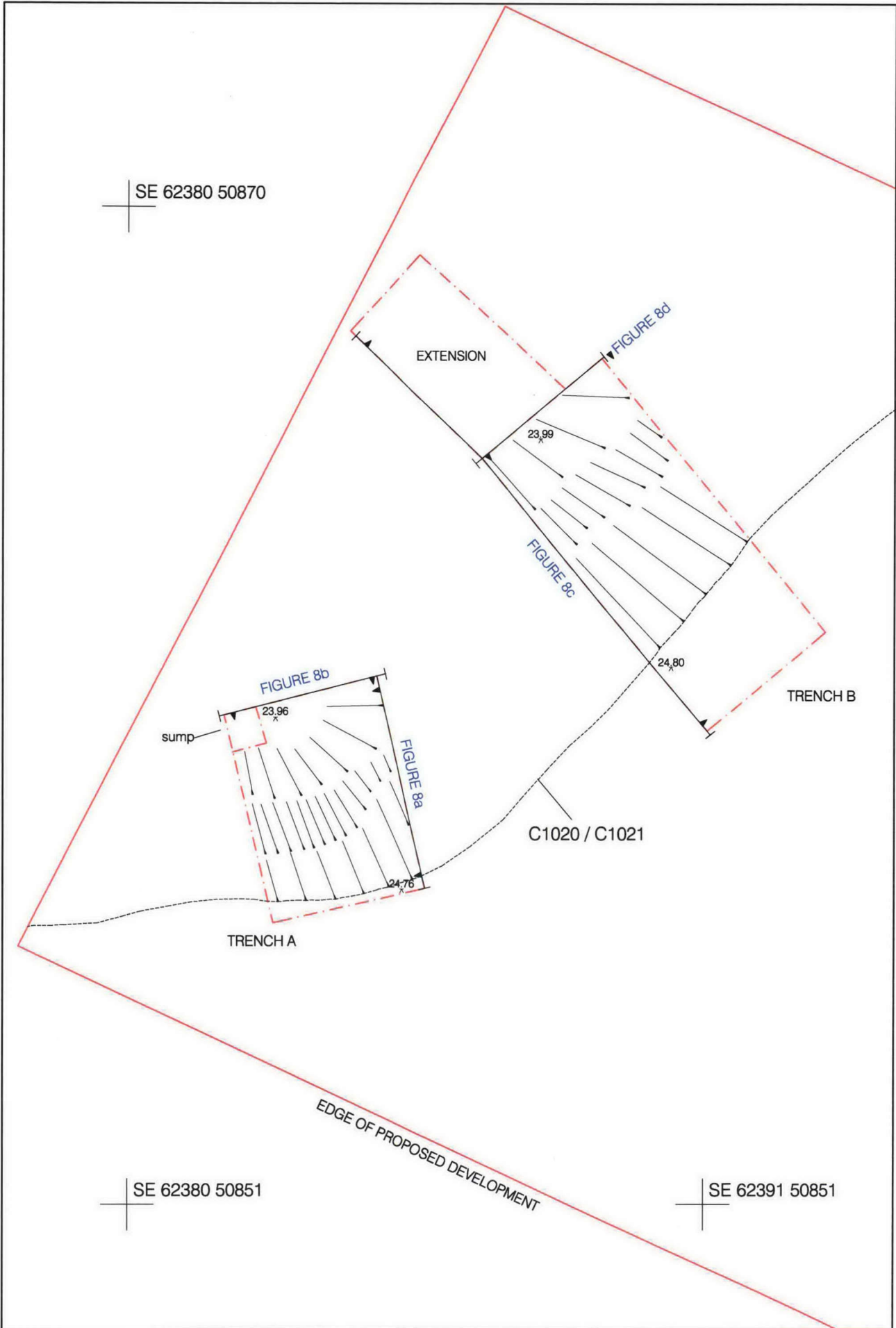
Machining in Intervention 2 revealed that the southeastern part of the site had already been truncated to subsoil during an earlier levelling operation. The northeastern part of the site still had green turf beneath the temporary car park make-up, and since this was already at the desired level for construction, no further excavation took place.

At the western end of the area, the subsoil sloped down and several archaeological deposits were encountered. A curving edge was seen against the subsoil running approximately NE/SW across most of the intervention. Hand-cleaning to define this edge produced animal bone and a sherd of early medieval pottery, suggesting that the deposits were similar to those investigated in Intervention 1.

Two trenches, A and B, were positioned in order to sample the deposit where it was accessible between piles. An area of approximately 32m² was excavated by hand and Trench B was later extended a further 3.5m by machine to look for a western edge to the deposits (Figure 7). No edge was defined and the deposits were seen to increase in depth in this direction (Plate 3).

The defined eastern edge was gently sloping, and gave the impression of being a natural depression rather than a deliberately cut feature. Four distinct deposits were recorded (C1019, C1020/1021, C1022 and C1024), although three of these were defined and recorded only in the section of the machined extension to Trench B. The earliest layer was C1021 in Trench A and its equivalent, C1020 in Trench B. This was a dark brown sandy clay with charcoal flecks and pebbles. It was extremely wet, and despite bad weather during the investigation, it would appear that it had always been at least seasonally waterlogged, since the animal bone was reduced to a soft friable state and smeared or crumbled on recovery. Had the deposit been permanently waterlogged, survival of plant and insect remains would have been expected, but this was not the case (Appendix H).

A small amount of Roman pottery and ceramic building material was recovered as well as occasional sherds of early medieval pottery, some slag and metalwork fragments and a small decorated glass bead (see Plate 1, top left). Although the assemblage in Intervention 2 was smaller and in a poorer state of preservation than that of Intervention 1, it is thought that deposits C1020 and C1021 represent the same episode of activity as that represented by C1010. The Anglian pottery was seen to be of the same fabric and some decorated sherds were recovered (see Appendix A). This pottery and the bead, an opaque white disk bead with crossing blue/green trails, are thought to be contemporary with the finds from Intervention 1, dated to 550 to 650 AD. As with C1010, these contexts also contained domestic material such as a whetstone and metal-working residues.



Intervention 2 - Location of trenches and deposits

Scale 1:100



Figure 7





Plate 3 Excavation of C1020, Intervention 2

C1021 was the only layer excavated in Trench A, whereas in Trench B, the machined extension showed that this layer, C1020, dished down beneath a build-up of other deposits (Figure 8). Immediately over C1020, was C1019, a mixed layer of dark brown clayey sand containing occasional fragments of Roman pottery and animal bone. Only a small section of this layer was excavated by hand. Overlying this was C1022, a dark grey deposit of laminated gritty clay, which looked as though it had been formed in water and contained only occasional fragments of abraded Roman, Anglian and medieval pottery. Above this, C1024 was a layer of mixed brown sandy clay with ferrous staining which may have been the truncated remains of the recent make-up layer (C1000, Intervention 1), although no modern inclusions were seen.

Layers C1019, C1022 and C1024 were extremely compacted and very difficult to excavate, in contrast to C1020/C1021, which was firm but not hard. It may be suggested that they were deposited in different ways with C1020/C1021 being a gradual build-up of domestic waste or midden material, and the later layers representing a deliberate backfilling or levelling episode.

Table 3 Intervention 2, summary of contexts

Context	Trench	Type	Description	Munsell
1018	-	recovery	context allocated to surface finds over the whole intervention	
1019	B	layer	very compact layer of mixed dark brown clayey sand with occasional charcoal flecks and pebbles, some CBM, ceramic and animal bone	7.5YR 3/3
1020	B	layer	very dark brown sandy clay with charcoal flecks and pebbles throughout, containing CBM, ceramic, metal and extremely badly preserved animal bone (= C1021)	10YR 2/2
1021	A	layer	dark brown sandy clay with frequent charcoal flecks and some pebbles, containing CBM, ceramic and extremely badly preserved animal bone (= C1020)	7.5YR 3/2
1022	B	deposit	very compact laminated dark grey silty clay with grit and mixed gravel, containing occasional abraded fragments of CBM	2.5Y 3/1

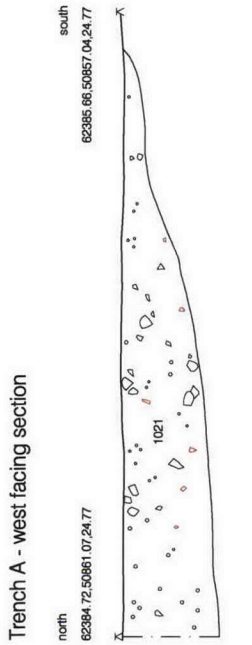


Figure 8a

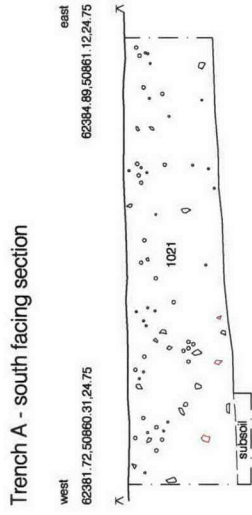


Figure 8b

South facing section

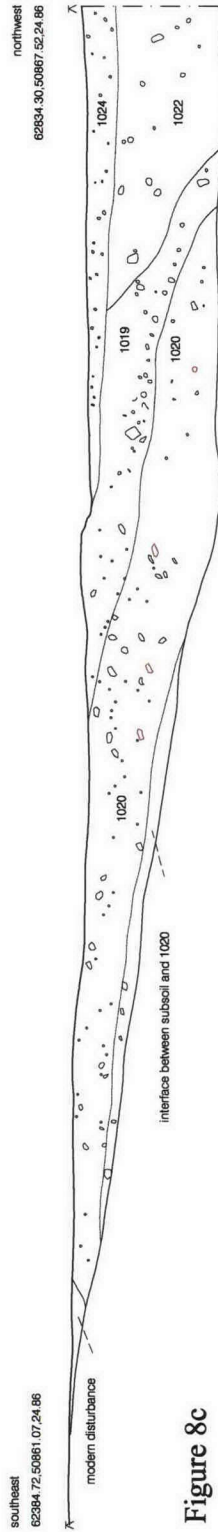


Figure 8c

Trench B - southeast facing section

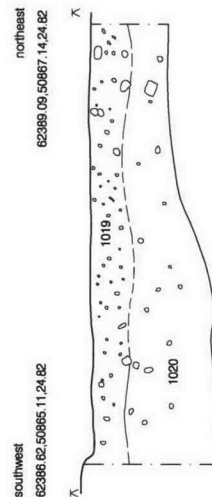


Figure 8d

Intervention 2 - sections through deposits

Scale 1:50



Figure 8

Context	Trench	Type	Description	Munsell
1023	-	subsoil	brown silty sand with a fairly high pebble content near Trenches A and B, elsewhere becomes variable like 1016 in Intervention 1	7.5YR 4/4
1024	B	layer	very compact mixed brown sandy clay with rust coloured staining and mixed gravel, possibly equivalent to 1000 in Intervention 1	7.5YR 4/2

4.0 DISCUSSION

4.1 BROADER CONTEXT

Heslington, as an early English place-name, is likely to denote an Anglian settlement (Allinson 1976, 66). The tumulus of Siward's Howe has been proposed as an early medieval burial mound since 'howe' is the old English name for a barrow, however, there is little archaeological evidence for burial of the Anglian period and documentary research suggests that the 'howe' place-name may be a misnomer. There is an archaeologically known inhumation cemetery, 720m to the west at Lamel Hill. It is thought to date to the 7th to 9th century or the middle Anglian period. There is also some evidence for significant Roman activity in the area, including the large coin hoard located during construction of Alcuin College, and a gypsum burial in the vicinity of St Paul's church. The reuse of Roman sites for burial during the early medieval period is a common phenomenon (Williams 1998), and this, with the prominent topographical position, may have made this an attractive location for such activity.

Cremation cemeteries dating to the Anglian period are also known in York at sites on The Mount and at Heworth. At The Mount, burials were found on the site of an earlier, extensive area of Roman burial, whilst at Heworth, they were found on a site that was close to, though not directly associated with, the Roman cemetery.

The finds of Anglian funerary urns at The Mount were first recorded in 1859, and are believed to have been recovered from a site on Dalton Terrace between 1858 and 1860 (Stead 1958). It is not known how many cremation urns were recovered during this time, as only six survive, together with a single ancillary vessel. Associated artefacts include a pair of iron shears, a comb fragment and a Roman coin (Tweddle *et al.* 1999, 170). Subsequent excavations in the 1950s revealed an Anglian comb and sherds of several further cremation urns (Stead 1958).

At Heworth, a 5th and 6th century cremation cemetery was contacted during the cutting for the Foss Islands railway between 1878 and 1880 (Tweddle *et al.* 1999, 170). Somewhere between 80 and 90 urns were recorded during excavation, but only 40, and four associated artefacts reached the Yorkshire Museum. In 1965, excavations by Lawrence Keen confirmed that Raine had accurately recorded the extent of the cemetery and that it had apparently been destroyed entirely by the railway cutting and later excavations (Tweddle *et al.* 1999, 170).

There is a suggestion that a second cemetery existed in the Heworth area, raised by Raine's note in 1879 of a 'Saxon urn ...found at the side of the Tumulus in the garden at Heworth' (Tweddle *et al.* 1999, 173). The site



of the known cemetery was on flat, open ground, and the only known mound in the area is that which appears on a drawing by Ridsdale Tate in 1920 (Tweddle *et al.* 1999, fig. 43), and on the Ordnance Survey map of 1931, possibly representing a windmill base. All of these burial grounds occupy sites outside the main settlement of York, and seem to be associated with areas of Roman burial.

4.2 ARCHAEOLOGICAL INTERPRETATION

There are two principal models for the origin and nature of the archaeological material recovered during the watching brief:

1. The material may be an Anglian or later rubbish midden that accumulated in or near occupation areas and was subsequently deposited into the depression. This midden material incorporated the remains of 6th to 7th century Anglian funerary deposits from a cremation or inhumation cemetery in close proximity to the site.
2. The material may be a 6th to 7th century Anglian rubbish midden that accumulated in or near occupation areas and was subsequently deposited into the depression. This midden material derives wholly from Anglian domestic occupation and the identification of the pottery as cremation urns or inhumation accessory vessels, and the glass beads and knife as grave accessories, is not proven or substantiated. This would challenge assumptions about the nature of the finds recovered, the interpretation of which has been skewed by the traditional focus on material from cemeteries. The pottery and beads, as the primary artefactual dating material, would therefore be contemporary with the other domestic refuse in the deposit, and indeed would come from the same source.

The results of the watching brief on these two areas have proved that although this part of Heslington Hill was extensively landscaped during the construction of the University in the 1960s and later, some of the landscaping has served to protect archaeological deposits of considerable significance. It has been shown that the landscape originally sloped more gently southwards and eastwards from the ridge of the York moraine at the north of the site and included a number of undulations and depressions in the surface of the subsoil, and it was in two of these depressions that the excavated deposits were preserved. Cut features, in the form of rubbish pits, were also buried beneath modern landscaping. Although no structural remains were discovered on the site during the watching brief, the excavated deposits seem to represent midden material containing a variety of cultural material and it is likely that the material recovered represents primary refuse material from occupation nearby. It has been suggested that domestic refuse strategies in the Anglo-Saxon period involved the accumulation of middens which were subsequently disposed of in negative features, and the material is unlikely to have been moved a great distance. The nature of the ceramic assemblage, i.e., few vessels with multi-sherd representation and joins, clean breaks alongside little erosion, supports this theory. Both Models 1 and 2 concur with theories for refuse disposal strategies for Anglo-Saxon sites.

The suggestion that the bossed and stamped pottery and the glass beads derive from a funerary context may in part be owed to the experience of early medieval archaeology. The study of archaeology of this period is dependent on cemeteries since, by and large, they are much more readily identified, and have naturally preoccupied scholars to the detriment of the more diffuse and less commonly encountered settlement sites. Even



the excavation of notable early Anglo-Saxon settlements like Mucking (Essex), West Stow (Suffolk) and West Heslerton (Yorkshire) has not yet redressed the balance. However, the material recovered from Heslington Hill need not derive from a funerary context: stamped and bossed pottery was found in *grubenhäuser* at Mucking and West Stow (Hamerow 1993; West 1985); glass beads were common stray finds at these two sites; a girdle hanger was found in a *grubenhäus* at West Heslerton (Christine Haughton *pers. comm.*); whittle-tang knives are ubiquitous in funerary *and* domestic contexts.

West Heslerton and Mucking produced stamped and bossed pottery from settlement areas but in both cases the settlements also had cemeteries close by, although the recycling of stamped and bossed pottery by settlement areas encroaching upon burial areas is possible. In any case, the finds of stamped and bossed pottery in settlement areas, presumably sometimes in primary refuse, would suggest that these 'urns' were not as restricted in deposition as was once thought. Material recovered from two *grubenhäuser* at Wharram Percy, where stamped and bossed pottery also made an appearance, also demonstrates that the quantity and range of material from Heslington Hill does not suggest an unusually rich artefactual assemblage (Milne and Richards 1992). Finds from Wharram included pottery, a spindlewhorl, an amber and a glass bead, an iron knife, pottery and quernstone fragments from two structures.

The site's location has also had sway over the interpretation of the assemblage since it has long been supposed that Siward's Howe was an extant prehistoric or early medieval barrow that would form a focus for folk burial. It is clear that Heslington Hill would provide an obvious site for a prominent mound, possibly within viewing distance of, Lamel Hill. However, the phenomenon of early Saxon settlements being in close proximity to, or in sight of, its burial ground has been encountered at West Heslerton and Mucking. Settlement and burial at Mucking shifted but nevertheless the site has two cemeteries closely related to the settlement areas. Heslington Hill is as likely a spot for settlement as for burial. Moreover, the juxtaposition of domestic activity at Heslington and funerary space at Lamel Hill adds a dimension to the Anglian landscape that was previously absent.

The geographic location of Heslington Hill away from the centre of York but associated with Roman burial activity and early medieval burial activity (in the form of Lamel Hill if not Siward's Howe) suggested immediately that the area has been the focus of prehistoric and later activity. The well-drained promontory of Heslington Hill would make a suitable site for prehistoric settlement, burial activity and territorial divisions and the same can be said, in varying combinations, of following periods. In East Anglia, Anglo-Saxon settlements have been seen as located close to water communications but this may be less true of Anglian Yorkshire. There is a trend emerging from recent investigations that suggests that more upland settlement away from major waterways was also favoured making Heslington Hill a more likely setting for a farm unit. Wharram Percy, situated in upland in the Wolds away from rivers, is a notable example. West Heslerton, a much more substantial and complex community in the Wolds, is situated away from a major waterway.

The residuality of Roman cultural material in the Anglian deposits at Heslington implies that Anglians exploited land that had already been worked in the Roman period. This phenomenon has also been identified at West Heslerton (Powersland 1999, 58).

As a whole, the Heslington Hill assemblage is likely to derive from early Anglian settlement. The bun-shaped

loomweight, small-scale iron-working residues, animal bone and burnt grain are clear evidence for subsistence activities and the pottery, glass beads and blade can have been in use in a settlement. The small presence of decorated pottery, amongst other plain jar and cooking vessel forms, not usually associated with burial, is quite normal. Analysis of the overall percentage of decorated pottery from *grubenhäuser* from Mucking was between 3% and 5% (Hamerow 1993, 52). The ratio of decorated to plain pottery at Heslington is 1:3.5 which admittedly is a high percentage (28%) but significantly, Hamerow (1993, 314) asserts that at Mucking 'few obvious contrasts are apparent between the settlement and cemetery pottery' and notes only that bossed pottery is 'mostly found in the cemeteries'. With this in mind, the presence of stamped and bossed pottery at Heslington Hill should by no means be seen as an indicator for funerary activity. Inhumed or cremated human bone, despite intensive sampling and sieving regimes, is also conspicuous by its absence.

Domestic occupation belonging to a 6th to 7th century settlement so close to York would be a notable addition to the early Anglian landscape. Although small, the Heslington Hill material offers the only evidence for early Anglian settlement activity in vicinity of York. The almost complete removal of this settlement by subsequent activity demonstrates how easily early Anglo-Saxon sites may be erased from the archaeological record and should alert archaeologists to the importance of inspecting likely occupation areas over large surfaces. It is likely that further remains of this settlement still survive in deposit traps on Heslington Hill.

The exact location of the Anglian settlement suggested by the place-name Heslington remains unresolved but the results of the watching brief suggest that pre-Christian early Anglian settlement and possibly burial were situated on the promontory of Heslington Hill. The unfurnished inhumation burial found to the southwest of the watching brief area, while undated, area offers a tantalising hint of the proximity of an Anglian cemetery. The middle Anglo-Saxon period might see the focus for settlement and burial shifting to a church serving the settlement. As well as the place-name evidence, Heslington's appearance in the Domesday book demonstrates that by 1086 there was an established estate and the possibility that the simple rectangular 13th century church with a tower at the west end, demolished in 1857 to make way for the present St Paul's Church (Perring 1999, 23), contained earlier guises of an Anglian church should not be discounted.

5.0 ASSESSMENT

Chance finds, previous archaeological investigations and desk-based research suggested the presence of archaeological activity from the prehistoric period to the present in the general area of Heslington Hill but earlier evaluation work in the vicinity of the watching brief produced little evidence. Clearly, the discovery of deposit traps in the watching brief area that had survived truncation demonstrates the remaining archaeological potential of the area. The possibility that the site may have been an early Anglo-Saxon settlement is significant, since settlement activity in this period is thought to disperse away from the heart of the Roman city. Not only are the results of the watching brief of local importance but finds of Anglian domestic activity are also rare nationally. The possibility that remains, other than the Anglian archaeology encountered, are present in the vicinity should also be a consideration for future development proposals in the area.

6.0 RECOMMENDATIONS FOR FURTHER ANALYSES AND RESEARCH

Dating of the activity currently relies on the pottery and glass beads which are dated by funerary sequences elsewhere. Consideration of the future recovery of appropriate samples on site for radiocarbon, thermoluminescence or optically stimulated luminescence dating might present a reliable, albeit broad, date for the material. The present assemblage offers the opportunity to radio-carbon date animal bone. This would also rule out the possibility that the pottery and beads represent earlier redeposited cemetery material amongst later domestic refuse. While radiocarbon dating results for the early medieval period are notoriously broad the result would be significant in terms of the depositional history of the Anglian deposits but may also offer a tighter date bracket than the beads, i.e., about one hundred years.

Comparison of the pottery types to the vessels recovered from known funerary sites in the city at Lamel Hill, the Mount and Heworth is important since pottery is thought to have been produced locally (see Appendix A). The pottery deriving from these cemeteries can provide a broader context for analysis of the Heslington material. Notably, links from York to further afield have been made by analysis of pottery and inclusions, for example, the mica inclusions seen in fabrics from Wharram Percy, have been compared to fabric from Whitby and the early cemetery at Heworth (Green in Milne and Richards 1992, 27). Thin-section and ICPS analysis of the pottery fabric is recommended to allow wider comparative analysis of the source of the fabrics to be undertaken. Physical reconstruction, illustration of the vessel forms and stamp-type comparison will also contribute to the picture.

The animal bone assemblage is of particular interest since there are no clearly dated assemblages from this period in the York area and the assessment suggests that as a rural assemblage it differs significantly from assemblages recovered from sites within the later principal settlement of York (see Appendix D). The interpretation of the nature and status of Anglian settlement often hinges on the animal husbandry strategy of a site and full recording and analysis is recommended in order to increase our understanding of the nature of settlement, society and economy at the site. The carbonised grain should be subject to full identification and the stage of processing at which the grain was burnt might offer information about activity at the site.

Deposits encountered during the watching brief had clearly suffered truncation in antiquity and during more recent activity. In addition, the level of preservation of some of the material was poor. Soil pH testing of the deposits recovered showed that the site pH was slightly alkaline to neutral. Notably the preservation of animal bone was poor and the 'friendly' pH levels suggest that changing levels in the water table was a more significant taphonomic factor. The near-neutral pH did mean that more robust inorganic material survived very well, the ironwork, glass beads and to a greater extent the pottery had fared much better. While no uncharred organic material was present, the presence of charred organic material including grain makes a strong case for comprehensive sampling of deposits which are encountered in future groundworks. The regime of fine-mesh sieving that was implemented during the watching brief on the Anglian deposits was rewarded by the recovery of a comprehensive animal bone assemblage and the retrieval of two of the three glass beads which otherwise would have evaded discovery.

Given the controversial nature of the assemblages recovered at this site, it is important to undertake further analyses and research on the majority of the material and to publish the results. A study of settlement sites that



have been excavated and have produced a similar array of finds would not only put the assemblage into a firm context but may also strengthen the case for domestic occupation at Heslington Hill. The variability in assemblages from a broad range of settlement-types including hamlet or village farm units, estate centres either monastic or Royal and, of course, cemeteries can be quite marked and publication of the material from Heslington Hill would not only be valuable for the York area, but would also add to a growing body of data from all over the British mainland.

A comprehensive field report detailing and illustrating the deposits and the analysis of the material assemblage should be followed by publication. Ideally, dissemination should take the form of an extended article in a regional journal, for example, the Yorkshire Archaeological Journal. Additionally, detailed notes should be prepared for inclusion in appropriate national journals, for example, Medieval Archaeology.

7.0 ARCHIVE

A medium assemblage of Roman, Anglian and medieval ceramic (2.5kg) was the subject of a specialist assessment and should be retained for further analysis. A medium assemblage of animal bone (18.55kg) was recovered and was the subject of a specialist assessment. The Anglian animal bone should be the subject of full analysis and the Roman material should be recorded for the electronic archive. A small assemblage of Roman and medieval ceramic building material (5.18kg) was recovered and has been the subject of a full catalogue and appropriate disposal strategy. The retained sample should be held in archive for a comparative city-wide study of York CBM. A small assemblage of metal-working residues (1.89kg) was recovered and was the subject of a specialist assessment. The material has been dated by artefacts to the Anglian period and should be the subject of comparative analysis with other published Anglian assemblages. Nine flints were the subject of a specialist assessment and are of no further analytical value. Small finds of glass, metal and stone were the subject of specialist identification and assessment and should be compared to assemblages from other published Anglian settlements. Approximately 200 litres of soils were taken for environmental assessment. Approximately 150 litres were processed by flotation and fine-mesh sieving and were sub-sampled for pH analysis to assess their potential. The retained soils should be fine-mesh sieved for cultural material.

The archive is of local and national significance and should be retained and deposited in the Yorkshire Museum.



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APPENDIX A CERAMIC ASSESSMENTDr Ailsa Mainman (*York Archaeological Trust*)**1.0 INTERVENTION 1****1.1 THE ANGLO-SAXON POTTERY**

The remains of 5 or possibly 7 vessels were recovered from Intervention 1, C1010, and had been provisionally recorded under one find number (Number 5). These vessels are Anglo-Saxon in date, belonging broadly to the 6th century (this dating would fit with the provisional dating of three glass beads to 550 - 650 AD), and appear to be the remains of an Anglo-Saxon cremation cemetery. All are handmade, two (Pots 1 and 2) are decorated and the rest are plain. The vessels have been given separate pot numbers to facilitate description.

Pot 1

No. of sherds:	14 sherds - some joining
Form:	slightly biconical vessel of large diameter - no rim or base unless sherds listed below will join following further analysis
Fabric:	compact, dense reduced fabric with moderate/dense scatter of quartz sand grains 1-2mm in size throughout and exposed on abraded surfaces
Decoration:	decoration arranged in horizontal zones on the shoulder. There are at least 3 zones of stamp decoration each delineated by groups of 4 incised horizontal lines. There are 4 different stamp types.
Wall thickness:	10 - 12mm
Surface treatment:	reduced matt surface, smoothed rather than burnished, surface somewhat abraded
Comment:	part of a cremation urn, decoration and form suggests a 6th century date. Less than 50 % survives

Further work recommended:

- 1 reconstruction as far as is possible for illustration
- 2 illustration (line drawing and photography)
- 3 analysis - thin section and ICPS analysis
- 4 stamps to be compared with the Briscoe catalogue of Anglo-Saxon stamps

Pot 2

No. of sherds:	4 joining sherds
Form:	bossed biconical vessel, no rim or base surviving or obvious amongst body sherds
Fabric:	loosely compacted fabric with dense scatter of quartz sand grains visible in section and on surface where abraded. Grain size commonly 1-2 mm but up to 3mm in size
Decoration:	neck groove comprising a simple stamp pattern delineated by 2 horizontal lines. Below this are crossed curvilinear swags with stamps both infilling the enclosed zones and between the paired lines, which create the zones. Below these is a row of bosses on the carination of the vessel, of which three survive positioned closely together; they presumably continued around the body of the vessel.
Wall thickness:	7 - 8 mm
Surface treatment:	surface smoothed rather than burnished, abraded in parts. Blotched oxidised/reduce patches of colouration typical of simple firing techniques
Comment:	part of bossed cremation urn, decoration and form suggests a 6th century date. Less than 20 % survives

Further work recommended:

- 1 reconstruction as far as is possible for illustration
- 2 illustration (line drawing and photography)



- 3 analysis - thin section and ICPS analysis
 4 stamps to be compared with the Briscoe catalogue of Anglo-Saxon stamps

Pot 3

No. of sherds: 10 sherds - many joining
 Form: simple, uneven jar form
 Fabric: dense compact sandy fabric, smaller more evenly distributed quartz sand grains than Pots 1 and 2
 Decoration: none
 Wall thickness: 5-6mm
 Surface treatment: smoothed matt surface - very uneven - sooted, uneven firing
 Comment: if found isolated would have been considered a cooking vessel but in the context of Pots 1 and 2 could have functioned as a funerary vessel

Further work recommended:

- 1 reconstruction as far as is possible for illustration
 2 illustration (line drawing and photography)
 3 analysis - thin section and ICPS analysis

Pot 4

No. of sherds: 3 sherds including 2 joining rim sherds, 1 other rim sherd - possibly 21 additional body sherds (see comment)
 Form: uncertain - slightly everted rim suggests simple cooking vessel/jar form
 Fabric: quite fine tempered with small quartz-sand grains, soapy texture
 Decoration: none
 Wall thickness: 6-7mm
 Surface treatment: burnished, traces survive best on interior, exterior slightly abraded and sooted
 Comment: Pot 4 and Pot 5 may be the same vessel as the fabrics are similar, although the surviving rim fragments do not join and are a slightly different shape. This might, however, be due to the uneven character of handmade Anglo-Saxon pottery. 21 body sherds have similar fabrics and wall thickness and may be part of either Pot 4 or 5

Further work recommended:

- 1 reconstruction as far as is possible for illustration
 2 illustration (line drawing and photography)
 3 analysis - thin section and ICPS analysis

Pot 5

No. of sherds: 3 joining rim sherds and possible additional body sherds (see above)
 Form: uncertain - slightly everted rim suggests simple cooking vessel/jar form
 Fabric: quite fine tempered with small quartz-sand grains, soapy texture
 Decoration: none
 Wall thickness: 6-7mm
 Surface treatment: burnished, traces survive best on interior, exterior slightly abraded and sooted
 Comment: as above for Pot 4

Further work recommended:

- 1 reconstruction as far as is possible for illustration
 2 illustration (line drawing and photography)
 3 analysis - thin section and ICPS analysis



Pot 6

No. of sherds:	4 joining rim sherds
Form:	uncertain - small stubby rim suggests a simple jar form
Fabric:	dense fine sandy fabric with some larger quartz sand grains
Decoration:	none
Wall thickness:	10 mm
Surface treatment:	smooth burnished surface, slight sooting
Comment:	this appears to be separate vessel of which only these few sherds survive. It is just conceivable that it is the rim of Pot 1 but unlikely

Further work recommended:

- 1 reconstruction as far as is possible for illustration
- 2 illustration (line drawing and photography)
- 3 analysis - thin section and ICPS analysis

Pot 7

No. of sherds:	1 small rim sherd
Form:	simple jar?
Fabric:	fine but with large voids resulting from leaching of calcareous inclusions
Decoration:	none
Wall thickness:	8-10mm
Surface treatment:	smoothed as far as can be ascertained
Comment:	may not be Anglo-Saxon but possible Romano-British on the basis of fabric

Further work recommended:

- 1 illustration (line drawing and photography)
- 2 analysis - thin section and ICPS analysis in order to compare fabrics

Anglo-Saxon body sherds

Additional plain body sherds can be placed into 2 groups on the basis of the density of the quartz sand grains in otherwise similar fabrics and on the thickness of the walls. There are 22 more moderately tempered sherds which might be part of Pot 2 while the 19 more coarsely, densely gritted thicker walled sherds are probably part of Pot 1. There are joins within the two groups and these in turn might help reconstruct Pots 1 and 2.

Further work recommended:

- 1 reconstruction as far as is possible for illustration
- 2 illustration (line drawing and photography) when joined to Pots 1 and 2

Context C1010 Find 5 also included 2 very abraded oxidised sherds which might be Roman in date, 1 Roman colour-coated sherd and the base of a 11th/12th century gritty ware cooking pot.

1.2 OTHER POTTERY FROM INTERVENTION 1

C. No	F. No	Find No	No of sherds	Spot Date	Description
1000		1	13	Roman; 12th - 14 th ; modern	5 x Roman sherds (2nd - 3rd century); 2 x 11/12th century gritty wares; 4 x medieval jug fabrics; 1 x modern tin glazed earthenware
1001	1	2	1	Roman	samian base



C. No	F. No	Find No	No of sherds	Spot Date	Description
1004	2	3	3	Roman; Anglo-Saxon	1 x Roman grey ware (3rd century); 2 x Anglo-Saxon handmade sherds in fabrics similar to Pots 1 and 2. Burnished, slightly micaceous exteriors
1006	2	4	5	3rd century	Roman grey ware jar fragments
1010		13	c.5 scraps	?Roman; Anglo-Saxon	scraps include a sherd of Anglo-Saxon pottery
1010		18	4 scraps	?Roman	abraded tiny scraps
1011		6	1	Anglo-Saxon	1 x fabric similar to Pots 1 and 2
1012	5	7	2	Anglo-Saxon	1 x fine grog-tempered fabric; 1 x fabric similar to Pots 1 and 2
1015		14	5 scraps	?Roman	
1015		19	3 scraps	?Roman	abraded tiny scraps

2.0 INTERVENTION 2

Pottery from Intervention 2

C. No	F. No	Find No	No of sherds	Spot Date	Description
1018	-	8	6	Roman; 11th-12th	1 x tiny samian fragment, 2 x abraded oxidised scraps, 1 x thin-walled 11th-12th century gritty ware sherd
1019	-	9	2	?Roman	2 x abraded oxidised sherds
1020	-	10	19	Roman; Anglo-Saxon; 13th century	3 x samian, 11 x Roman sherds, miscellaneous 2nd-3rd century fabrics, 1 x handmade Anglo-Saxon sherd, 2 x partly glazed 12th-13th century sherds
1020	-	15	c.10 scraps	?Roman; Anglo-Saxon	scraps include a sherd of Anglo-Saxon pottery
1021	-	11	20 inc. scraps	Roman; Anglo-Saxon	3 x abraded Roman grey wares incl. base; 7 x Anglo-Saxon sherds in fabrics similar to Pots 1 and 2; 1 x similar sherd with scar where a boss or lug has broken off - poss. from a similar vessel to Pot 2; 1 very fine grass-tempered sherd; 1 x sherd in fabric similar to Pots 1 and 2 with traces of stab and linear incised line decoration; 1 x sherd in fine grass-tempered ware with comb teeth impressions
1021	-	16	c.10 scraps	?Roman	
1021	-	20	6 scraps	?Roman	abraded scraps
1021	-	21	c.20 scraps	?Roman; Anglo-Saxon	scraps include a sherd of Anglo-Saxon pottery
1022	-	12	2	?Roman	abraded small oxidised sherds - ?Roman
1022	-	17	5	Roman; Anglo-Saxon; 11th-12th century	3 x scraps Roman, 1 x Anglo-Saxon rim with leached out inclusions; 1 x scrap of 11th-12th century gritty ware
1022	-	22	3 scraps	?Roman	



3.0 ASSESSMENT

3.1 SUMMARY

This is a very important collection of material and should be carried through to further analysis and publication. Anglo-Saxon pottery is very rare in the York area and both the pottery and the beads suggest that this is the remains of a ploughed-out Anglo-Saxon cremation cemetery, the first such to be encountered in a century. The decoration, forms and use of grass-tempering are all consistent with a 6th century date.

The position of the discovery on the south-east side of the city is of particular interest as it is not far from similar discoveries of broadly the same date made at Heworth at the end of the 19th century, as well as being close to the slightly later 7th century inhumation cemetery at Lamel Hill. Its discovery makes a significant contribution to our understanding of early Anglo-Saxon occupation in this area, which is still a very poorly understood period in York.

Although the pottery is fragmentary there is sufficient of it reconstruct at least 3-4 forms, 5 stamp types and 4 styles of decoration, which can be compared with existing bodies of data both in the area and nationally. There are at least 7 different fabrics represented, some quite distinct, others blending into each other in terms of relative coarseness. These too can be compared with existing material collected in the 19th and early 20th centuries and with the types of pottery which followed in the 7th and early 8th centuries.

3.2 FURTHER WORK RECOMMENDED

3.2.1 Tasks

- 1 illustration of Pots 1-7 and 3 decorated sherds from Intervention 2 C1021 - 7 vessels and 3 sherds
- 2 thin-section and ICPS analysis of Pots 1-6 plus 3 sherds from Intervention 2 C1021 (the grass-tempered and decorated sherds) - 9 analyses
- 3 five stamp (4 from Pot 1 and 1 from Pot 2) comparisons with the Briscoe catalogue
- 4 reconstruction for illustration
- 5 comparison with Anglo-Saxon vessel forms, decoration and fabrics from the collection in the Yorkshire Museum from the Mount and Heworth cemeteries
- 6 literature search for other and wider comparative material
- 7 publication report preparation



APPENDIX B ANGLIAN SMALL FINDS ASSESSMENT

Cecily Spall

1.0 INTRODUCTION

Thirteen small finds recovered during a watching brief undertaken by Field Archaeology Specialists on Heslington Hill adjacent to the JB Morrell Library, University Campus, were submitted for identification and assessment. The material included, ferrous and non-ferrous metalwork and stone and clay objects. Material from the site suggested a funerary content due to the presence of possible cremation urns and glass beads.

2.0 BUN-SHAPED LOOMWEIGHT

Two fragments of bun-shaped clay loomweight were recovered, both from C1010, Intervention 1 (Find numbers 66 and 117). Although small and abraded, it is clear from their shape and external oxidised colouring and the reduced core that the pieces derive from bun-shaped loomweights. Find number 117 also has part of its base and central hole intact.

It is not clear whether the two fragments derive from one loomweight, although under x10 magnification the fabric of the weights is very similar. Both pieces are made of a fine clay with frequent rounded quartzite inclusions, occasional grog and evidence for a vegetable temper. The weights are likely to have been made in a bonfire kiln from local clays.

Bun-shaped loomweights, used in some numbers with an upright loom, are frequent finds on domestic sites of the Saxon period and are not normally associated with funerary contexts. They are known from Saxon sites of various dates, for example, West Stow (Suffolk), West Heslerton (Yorkshire) and Fishergate (York). Given the associated finds from the site, an early Saxon date for the loomweights would not be controversial.

3.0 FERROUS METALWORK

Five ferrous objects were recovered from C1010, C1020 and C1022, Interventions 1 and 2 (Find numbers 78 and 80 to 83 inclusive and 118).

A hobnail or small iron tack (Find number 83) was recovered from C1022 from a flotation sample and may date from the Roman period. It measures 9mm in length and is slightly bent and its head measures approximately 11mm in diameter. Approximately half an iron disc with a central perforation was recovered by hand from C1020 (Find number 80). Its approximate diameter is 35mm and the central perforation measures approximately 6mm in diameter. A small rivet consisting of a bar with heads at either end was recovered from C1010 by fine-mesh sieving (Find number 82). It measures 17mm in length and each head measures 5mm in diameter,

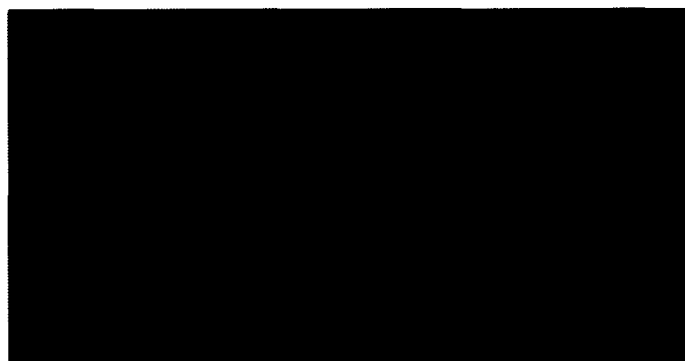


Plate 1 Find number 78, complete whittle-tang knife blade

A complete whittle-tang blade was recovered from C1010 (Find number 78) (Plate 1). Its full length is 133mm, the tang measures 37mm and the blade measures 96mm. The cutting edge of the knife shows wear from continuous sharpening particularly towards the handle.

While blades such as Find number 78 are common in early Saxon funerary contexts in both male and female graves and this is a reflection of their common use in everyday life. The blade may have been offered as grave equipment; it could equally have been included in midden material from a domestic site.

A small fragment of an iron blade was recovered from fine-mesh sieving (Find no 118). It measures 12mm x 8mm (widest) x 3mm (thick). It appears to be either the tip of a blade or the tip of a whittle-tang, although in profile the object narrows towards one edge suggesting the former.

4.0 NON-FERROUS METALWORK

Three non-ferrous objects were recovered from C1010, C1015 and C1020. Two objects were copper-alloy (Find numbers 81 and 79) and one was lead alloy (Find number 77).

Find numbers 81 appears to be a fragment of copper alloy finger ring. It is broken at either end and is in two pieces. When joined the two fragments form approximately 25% of the object and suggest a circumference of approximately 20mm. In profile, the object is a characteristic D-shape measuring 3mm x 2mm.

Find number 79 is a copper alloy folded sheet. It measures 28mm (reconstructed length) x 11m x 0.5mm. When found in quantities, copper alloy sheet or offcuts have been used to suggest recycling for metalworking (Richards 1993), although Find number 79 is clearly not indicative of such on its own.

Find number 77 is a bent strip of lead alloy measuring 108mm in length with a hooked end. In profile, the object is suggestive of a lead window came although it is too small and the groove is irregular disappearing completely in places (the object measures 3mm thick with a central groove measuring *c.* 1mm x 1mm). The function of Find number 77 is not clear, although its hooked end might be suggestive of suspensory function.

5.0 STONE OBJECTS

Four stone objects were recovered from C1010 and C1020 (Find numbers 46, 47, 48 and 104). Two objects were clearly recognisable as a whetstone and rubberstone while the remaining two were not clearly worked but must have been imported to the site from elsewhere.

Find number 46 is a trapezoidal whetstone made of fine-grained micaceous red sandstone. It has suffered damage and only two small areas of its original surface are present, but where intact are worn smooth by use. The whetstone measures 125mm x 65mm (widest) x 31mm (thick).

Find number 47 is a possible rubberstone made of dense, quartz-rich sandstone measuring 157mm x 147mm x 62mm. It has one smoothed surface, worn from use; all other edges appear to have been roughly hewn to be easily handled. Hand-milling using a rubberstone is normally attributed to a pre-Roman date but the form and dimensions of the object are misleading and the object may well be reused from a larger, possibly rotary, quern or grinding stone.

Find number 48 is small flat piece of fine-grained micaceous sandstone measuring 100mm x 79mm x 21mm. It has one smooth face, although this appears to represent a clean break along a bedding plane rather than wear. It is not clear what the object may originally have been or come from although the stone is not native to the site and must have been imported. Under x10 magnification the sandstone is very similar to Find number 46.

Find number 104 was recovered from C1010 and is a roughly shaped disc of coarse oolitic limestone and while not clearly an object is not native to the site and its immediate environs. It measures 155mm x 128mm x 29mm.

6.0 ASSESSMENT

Although small, this assemblage of material is unique in the city of York. It is possible that deposits which yielded this material comprised elements of an Anglian cemetery but also included refuse material of a domestic nature dateable to the



Saxon period. As such these small finds constitute a rare find and significant evidence for the nature of Anglian settlement in the post-Roman period. The study of refuse disposal strategies in the Anglo Saxon period suggests that material initially accumulates in middens and is subsequently disposed of into pits. Comparative research with assemblages from sites of Anglo Saxon date is recommended.

The whittle-tang knife blade and copper alloy finger ring should be illustrated for publication.

The whole collection is worthy of retention in a museum or other archaeological store.

References

Richards, J.D.R. 1993. 'The Bedern Foundry', *The Archaeology of York*, 10/3, York



APPENDIX C GLASS BEADS

Birte Bruggmann

1.0 INTRODUCTION

Three Anglian glass beads were recovered during a watching brief undertaken by Field Archaeology Specialists at Heslington Hill, adjacent to the JB Morrell Library, University Campus, York. All three beads are characteristic of, and broadly dateable to, the Saxon period (c. 550 to 650 AD).

2.0 ASSESSMENT

2.1 FIND NUMBER 73

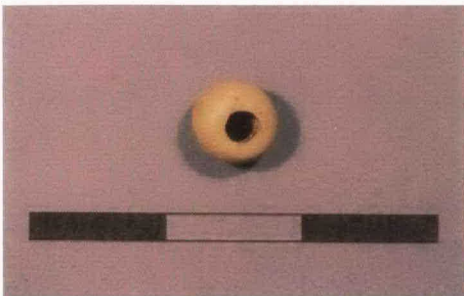


Plate 1 Find Number 73

Find number 73 was recovered during fine sieving and is a complete small monochrome opaque white glass barrel-shaped bead measuring 6mm (circumference) x 5.5mm (height) with a central perforation measuring between 2.5 and 3mm (Plate 1). The surface of the glass is matt in appearance, although this is probably due to its local burial environment. It is possible that this bead was manufactured in the Netherlands and it is dateable to c. 550 to 650 AD, although it could be earlier.

2.2 FIND NUMBER 74



Plate 2 Find Number 74

Find number 74 is almost half of a small bichrome disc-shaped bead (Koch type 33, 18) (Plate 2). The body of the bead is opaque white glass and has two marvered crossing trails of turquoise glass which appears to be translucent against the opaque body glass. The bead measures 6.5mm (reconstructed circumference) x 5mm (height). Again, it is possible that the bead is a product of the Netherlands and is broadly dateable to c.550 to 650 AD.

2.3 FIND NUMBER 75



Plate 3 Find number 75

Find number 75 was recovered during fine sieving and is half of a sharply biconical, opaque blue glass bead with regular rows of opaque red marvered spots (DotReg One)(Plate 3). The bead measures 19mm (reconstructed circumference) and tapers to 11mm at either end. It is likely that the bead was manufactured in England and this type of bead is dateable to no earlier than 550AD, and no later than 650 AD.

3.0 CONCLUSION

The beads are typical of the Anglo Saxon period (Phase B, 550 to 650 AD). Their origin could be funerary or domestic in nature, since glass beads are found both in cremation and inhumation burials and on settlement sites in the early Anglo Saxon period.

All three beads should be illustrated for publication, and in the case of Find numbers 74 and 75, illustration could be in colour.

APPENDIX D ZOOARCHAEOLOGICAL ASSESSMENT

Stephen Rowland

1.0 INTRODUCTION

This document reports on the zooarchaeological assessment of two and a half boxes (approximately 100 litres) of animal bone, collected by hand, flotation and fine-mesh sieving from a watching brief on Heslington Hill, to the north of the J.B. Morrell Library, University of York, Heslington, York. The excavation was carried out in two phases during September and October 2002 by Field Archaeology Specialists Ltd during the construction of a new car park (Intervention 1) and a new medical centre (Intervention 2). Deposits encountered in Intervention 1 include a modern plough-soil overlying a series of clearly defined pits and two more diffuse features of Anglian date identified as ponds or natural depressions, as well as an ancient soil horizon. Bone was recovered from two discrete pits, F1 (C1001 and C1003) and F2 (C1004 and C1006), while Anglian contexts C1009, C1010, C1011, C1012 and C1017 were interpreted as being analogous and overlay the ancient soil horizon C1015. The pits contained predominantly Roman pottery, but sherds of Anglian date from the latest context in F2, C1004, suggest either a Roman or Anglian date for this context. In Intervention 2, two further contexts of Anglian date, C1020 and C1021, also yielded bone.

1.1 AIMS AND OBJECTIVES

The aim of the watching brief was to record and characterise archaeological deposits threatened by construction. The aim of the zooarchaeological assessment was to establish the potential of the bone assemblage for further study towards the elucidation of past socio-economic systems and animal husbandry practices. This potential was determined in terms of state of preservation, degree of post-depositional disturbance and damage as well as the number of bones and teeth that could be used for metrical and ageing analysis.

1.2 METHODOLOGY

Zooarchaeological remains were systematically collected through the use of three recovery techniques of differing intensity. All excavated contexts were subjected to hand-collection whereby all visible bones were gathered and retained. In addition, 30 litre soil samples were taken from C1010, C1015, C1017, C1020, C1021 and C1022. This material was washed down in a water recycling flotation tank to remove the fine silt and clay particles, with the light fraction being washed into a 250 micron sieve and the more dense residue trapped in a 1mm mesh within the flotation tank. In each case, ten litres of soil was retained for further analysis. Once dried, the residue was sorted for both environmental and cultural material. A third method of recovery was fine mesh sieving which was applied to those contexts identified as being of Anglian date during excavation. A total of 70 litres of soil was retained from each of C1010, C1015, C1020, C1021 and C1022, and was washed with a hose gun over 2mm mesh to remove clay, silt and sand particles. The resultant residue was treated in a similar manner to that generated by flotation.

Assessment of zooarchaeological remains followed the Environmental Archaeology Unit protocol for recording animal bones (Dobney *et al* 1999). To increase speed of analysis and to maximise the potential of the most informative elements, strict criteria were used to selectively record a specific suite of bones. Limb elements were only identified to species if they had at least 50% of an articular bone zone (Dobney and Reilly, 1989), skulls, maxillae, horncores and teeth only if they were more than 50% complete, and mandibles only if they contained teeth or the condyle was present and undamaged. Elements of the torso, the ribs, vertebrae (with the exception of fish vertebrae) and sternum were not identified to taxon, regardless of completeness. Instead these, along with less complete elements, were identified to anatomic element where possible, but recorded generally as bird, fish, small mammal (rat sized or below), medium mammal 2 (dog, cat or rabbit sized), medium mammal 1 (caprovid and small deer sized) and large mammal (cow, horse and large deer sized). Sheep and goats were identified on the basis of the horncore, deciduous fourth premolar, distal humerus and tibia, proximal and distal radius, astragalus, calcaneus and the third phalanx according to the criteria of Boessneck (1969), Payne (1985) and Prummel and Frisch (1986).

Notes were made on zooarchaeological assessment proformae regarding the number of elements, mandibles, ageable or



sexable teeth, measurable bones, unfused epiphyses and metaphyses and newborn bones as well as the total weight pertaining to each taxon. Subjective notes were made on the state of preservation, angularity and colour as well as the degree of fragmentation and the proportions of butchery, burning, gnawing and fresh breakages. The completed sheets were then entered into a series of Microsoft Access 2002 databases and statistically manipulated in Microsoft Excel 2002.

2.0 ASSESSMENT

Where it was possible to make a distinction, all of the caprovid remains were identified as sheep.

2.1 ROMAN

Three Roman contexts contained a total of 94 fragments. Preservation was described as 'excellent' or 'good' and angularity generally as 'quite spiky'. Colour was largely brown, while fragmentation was moderate, with most bones measuring between 5cm and 20cm across. Butchery, burning and gnawing was not observed in significant amounts, while fresh breakages affected between 20% and 50% of bones in most contexts.

A total of 32 bones could be identified to species, of which eleven were measurable and seven were unfused. Species diversity was limited, with the identified remains dominated by cattle (21 fragments), followed by caprovid (5), and two bones each of pig, horse and red deer. C1001 contained three goose bones.

Only C1001 contained more than 40 fragments. Element representation in this case seemed to have very little in the way of head or foot elements, and could represent more meaty kitchen waste.

2.2 ROMAN/ANGLIAN

Only F2 C1004 was assigned a Roman/Anglian date. Bone preservation was described as 'excellent', angularity as 'quite spiky', and colour as brown. Fragmentation was moderate, with between 20% and 50% of bones less than 5cm across. There were no cases of butchery, burning or gnawing, but fresh breaks affected between 20% and 50% of fragments.

There was a total of ten bones, two of which were identified as unfused cattle bones along with a single caprovid metatarsal.

2.3 ANGLIAN

The vast majority of hand collected material, 1817 fragments, was assigned to the Anglian period, and was very much different in character to the Roman bones. A total of eight contexts were analysed for zooarchaeological remains, of which five were deemed to be analogous.

Preservation of hand-collected remains was generally described as 'fair', occasionally 'good', while angularity was mostly 'rounded'. Bones were light in colour, being either beige or fawn. Fragmentation tended to be high, with many bones less than 5cm across and hardly any greater than 20cm across. Indeed, over a third of the total sum of 1817 fragments was accounted for by the large numbers of very small fragments from C1021, recorded as either 'unidentified large mammal', or, more commonly, merely as 'unidentified'. This fragmentation was greatly influenced by the large proportion of fresh breakages, particularly in the case of C1010, C1012 and C1021 and, with the exception of C1011, freshly broken bones exceeded 50% in every context. However, some degree of fresh breakage was inevitable considering the friable nature of the bone when damp. Washing caused further damage as it removed the dirt that in many cases was all that maintained a bone's integrity. Once the bone was dry, although somewhat chalky in texture and brittle in nature, it had much greater strength, and preservation was therefore recorded as in a 'fair' rather than 'poor'. Burning was almost completely absent, as was gnawing, while butchery was present only in small amounts. This low level of identification of bone modification is likely to relate partly to the high degree of fragmentation and fresh breakage. The overall consistency of bone condition and modification supports the interpretation of all deposits apart from C1015, C1020 and C1021 as deriving from the same deposit. With only two fragments, C1015 is not sufficiently large to differentiate it from the others, while both C1020 and



C1021 were from a separate intervention likely to derive from a similar natural depression.

The material from both fine mesh sieving and flotation resembled that from hand-collection in terms of preservation, colour, angularity and post-mortem changes. Fragmentation was inevitably a little higher, with greater numbers of fragments below 5cm across, and because fragments were smaller, fresh breaks were not so prevalent as among hand-collected bones.

Of the 1817 hand-collected bones, just over a sixth (314 fragments) could be identified to taxon using the rapid recording method. However, this figure is greatly influenced by the high degree of fragmentation, particularly of long bone shafts. There were 47 measurable bones, of which five were complete enough to allow measurement of the greatest length. The number of mandibles and ageable teeth was quite high, 19 and 51 respectively, with an additional 16 unfused bones (see Table 2).

Species representation was limited (see Table 1). The assemblage was dominated by cattle (248 fragments), followed by much smaller numbers of horse (29), caprovid (25), pig (10) and red deer (2) bones. There were no birds or fish, and the vast majority of the assemblage consisted of large mammal or unidentified mammal fragments. Turning to element representation, all parts of the carcass appeared to be present in greater or lesser numbers. Teeth were particularly common, especially in C1021 where of 79 elements identified as cattle, 53 were teeth. On the whole there appeared to be a predominance of more dense elements such as the distal humerus and proximal radius, acetabulum, calcaneus and metapodials.

There was a total of 121 fragments from fine mesh sieving of which 11 were identifiable and, a further 83 from the flotation of C1010 (see Table 3). Fine mesh sieving provided one each of measurable and unfused bones along with single ageable teeth and mandibles. Of the six bones identified to species from flotation, four were identified as cattle (tooth, metacarpal, and measurable humerus and astragalus) and two as caprovid (both ageable mandibular molars). There were clearly defined knife marks on the medial surface of the distal humerus which could have derived from skinning, filleting or disarticulation by slicing through ligament attachments.

2.4 MODERN

Context 1000 was identified as a modern plough soil. A total of 36 bones were described as in 'fair' condition, 'rounded', and fawn in colour. Fragmentation was moderate, with over 50% of fragments between 5cm and 20cm across. Butchery, burning and gnawing affected less than 10% of bones, while over 50% were freshly broken. Cattle, horse and caprovid were identified with most of the assemblage comprised of large mammal fragments.

3.0 DISCUSSION

The Roman assemblage is really a little too small to provide much information of any , although the presence of red deer might be considered of interest. While wild animal bones have often been recovered from Roman sites, they are in fact rare from rural sites, a feature that Grant (1990) attributes to the efficiency of the Roman agricultural economy. Similarly, the amount of material from F2 C1004 is too small to be of analytical value, although the in terms of bone condition, fragments from this context are much more akin to those of Roman rather than Anglian date. However, this preservation is likely to relate to the deposition of these bones into a pit where they would have been less affected by weathering than those of Anglian date, which are thought to derive from a midden deposit.

Although not huge, one or two points of interest can be made regarding the Anglian assemblage. Cattle were of prime economic importance, and must have represented the mainstay of the diet, both through meat and through secondary dairy products. There was good potential for ageing the cattle, with twelve mandibles and 36 loose teeth, many of which were lower third molars. All of these mandibles and loose teeth from C1010 to C1017 seem to be quite closely defined into two main age groups. The younger group had a heavily worn deciduous fourth premolar (the most posterior and latest developing milk tooth, normally shed and replaced by an adult premolar before the beast reaches adulthood) still present, limited wear on the second adult molar and an unerupted, or erupting third adult molar. Such a pattern is consistent with



subadult cattle, perhaps of about three years of age, with these animals likely to have been slaughtered at optimum meat weight. The second group was of older, adult individuals with significant wear on the third molar. This might imply older cattle that had spent most of their lives as dairy or traction beasts slaughtered towards the end of their productive lives. Cattle from C1020 and C1021 appeared to have a slightly different pattern with some individuals with limited wear of the posterior cusp of the third molar. There were still examples of second molars with no, or limited, wear on the posterior cusp, but despite the higher numbers of teeth recovered from these contexts, there were no deciduous fourth premolars. Since these teeth are rather delicate they may have been damaged, but the frequent occurrence of unworn permanent fourth premolars might suggest that the deciduous teeth had been shed shortly before the animals had been slaughtered.

The high proportion of prime beef cattle may be seen as an indicator of status, although a large numbers of pig otherwise associated with status, at least in medieval assemblages (Dobney *pers. comm.*), is not present at Heslington Hill. Being slaughtered when immature, pig bones tend not to be fully ossified and are more greasy and less dense than the bones of other taxa. It is possible that due to intense taphonomic filters, many pig bones have largely decayed, leaving only a few fragmentary teeth.

Although sheep were present only in limited numbers, there were still six mandibles and seven ageable loose teeth, suggesting that sheep were likely to have been more important than indicated by raw fragment counts. The tooth wear patterns, albeit limited in quantity, implied that most sheep had been slaughtered as young adults, at about two to three years of age. This is just above prime meat age, but a little too young to gain much return in the form of wool, offspring or milk. As with the consumption of cattle, the exploitation of younger animals may imply a degree of status, or it is possible that sheep were closely managed in the local economy, being slaughtered after they had replaced themselves with offspring.

Horse also seems to have been of some importance, with at least one older and one younger individual represented. No evidence for butchery was observed on any of the horse bones, but their disarticulated state and admixture with food waste may imply that they too had been eaten upon reaching the end of their working lives. The oft quoted anecdote of St Cuthbert exalting the Saxons to refrain from horse consumption may be appropriate, and it may also be pertinent to note that butchered horse remains were recovered from a 7th century sunken floored building at Site 12 along the proposed route of the Silk Willoughby to Staythorpe pipeline (Jaques 2002), a site where horse was again present in significant quantities (FAS forthcoming). If it is assumed that oxen were used for traction, then the presence of a significant proportion of horses, presumably for riding, may again indicate some degree of status.

Although the element representation might be held to signify primary butchery, with greater numbers of head and distal limb elements, there are likely to have been fairly intense taphonomic filters that could well have destroyed many of the more fragile elements. Isolated teeth and metapodials have survived because they are durable, while vertebrae and ribs are more delicate. This is certainly the case with C1021 where taphonomic filters seem to have been at their most intense, rendering much of the bone highly friable and destroying many of the less robust elements. Soil pH analysis does imply that conditions were somewhat acidic. The high numbers of large mammal shaft fragments certainly suggests that plenty of limb bones had been disposed of along with the rest of the waste, and the overall appearance is of generalised butchery waste.

The assemblage is very different from Anglian material from York, particularly that from 46 - 54 Fishergate Period 3 (O'Connor 1991) and from Fishergate House (FAS forthcoming) (see Figure 1). At 46-54 Fishergate, using the modified fragment count (O'Connor 1991, 239), cattle comprised 49.4%, caprovid 35.5% and pig 15.1%, not dissimilar to the figures for hand collected bones from Fishergate House (cattle 56%, caprovid 32% and pig 12%). At Heslington Hill, cattle accounted for 87% of the main domesticates, caprovid 9% and pig 4%. While some differences may be accounted for in the variance of preservation conditions and small sample size from Heslington Hill, nevertheless, the assemblages are still very different. It is possible that this divergence relates to site function and status and it would be interesting to contrast the data from Heslington Hill with that from such rural sites as Yeavinger (Northumberland), Mucking (Suffolk), West Heslerton (Yorkshire), Dragonby (Lincolnshire) and possibly the middle Saxon manor at Flixborough (Lincolnshire). Indeed, there appears to be a clear distinction between rural sites and those from Anglian York, notably in the proportions of horse. For example, at Heslington Hill, horse accounts for 9% of all identified remains, at Site 12 on the Silk Willoughby to Staythorpe pipeline, this proportion is 17% (of an admittedly small assemblage), whereas at Fishergate House approximately 2% of identified remains were of horse, and of all the thousands of bones identified from 46-54 Fishergate, just over a third



of 1% was horse. While both cattle and horses may have been used for traction, horse meat does not appear to have had any value, either as food rent or as a marketable commodity. They are thus more likely to have remained, been slaughtered, and perhaps consumed, on rural sites.

4.0 POTENTIAL FOR FURTHER ANALYSIS

Due to its small size, the Roman assemblage is of limited use. However, it does have some worth in that spot dated rural assemblages from this period are not particularly common and, should the assemblage be combined with material from further excavations at Heslington Hill or, in a wider study of the hinterland of Roman York, then it will prove much more valuable. Material dated Roman/Anglian is even more limited, and the assemblage is too small and poorly dated for combined or comparative analysis. The Anglian material is, however, extremely important, not least because it is among the earliest dated Anglian material in the area. While it is true that the high incidence of fresh breakages may have limited the numbers of identifiable and measurable bones, the assemblage has the potential to be highly informative regarding the nature of Anglian settlement, society, economy and animal husbandry. This is particularly true of an, albeit small, age profile that can be reconstructed for cattle from the relatively high numbers of mandibles and loose teeth. Measurable bones are not so prominent, but there are a number of elements complete enough to calculate withers heights. While measurements of individual elements may not create data of statistical significance, conversion and combination of width and length measurements through log ratios would allow the assemblage to be used for comparative purposes at least.

It is recommended that the modern and Roman/Anglian material is disposed of by integration into a teaching or reference collection. The Roman assemblage should be curated until it can be combined with further material from the site should it arise. If it can be closely dated, and integrated into a wider, similarly dated data set from York, then it may be worth recording the assemblage in full. The Anglian assemblage should be recorded and analysed in full. The state of preservation may mean that Minimum Number of Individuals (MNI) would be of greater value for establishing the relative proportions of taxa than Number of identified specific parts (NISP).

5.0 ARCHIVE

All bones and digital records are currently stored at Field Archaeology Specialists Ltd.

References

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Table 1 Summary of hand collected fragments counts for each taxa by period from Heslington Hill

	Taxon	Roman	Roman/Anglian	Anglian	Modern	Grand Total
<i>Cervus f. domestic</i>	red deer	2		2		4
<i>Equus f. domestic</i>	horse	2		29	2	26
<i>Sus f. domestic</i>	pig	2		10		8
<i>Bos f. domestic</i>	cow	21	2	248	5	186
Caprovid	sheep/goat	5	1	25	1	26
<i>Anser sp.</i>	Grey goose	3				3
Large Mammal		40	5	752	28	506
Medium Mammal 1		14	2	35		41
Unidentified		5		716		320
Grand Total		94	10	1817	36	1957

Table 2 Summary of zooarchaeological information extractable from hand-collected animal bones from Heslington Hill.

	Roman	Roman/Anglian	Anglian	Modern	Grand Total
Contexts with bone	3	1	8	1	13
Measurable bones	11	0	47	2	60
Mandibles	0	0	19	2	21
Ageable Teeth	0	0	51	1	52
New Born	0	0	0	0	0
Unfused epiphyses/ metaphyses	7	2	16	1	26
Total Identified bones	32	3	314	8	357
Total Fragments	94	10	1817	36	1957
Bones/Context	31.3	10	227.125	36	150.53846
Identified bones/context	10.6	3	39.25	8	27.461538
Total Weight (g)	2636	128	14299	758	17821

Table 3 Summary of bones recovered by fine mesh sieving (FMS) and flotation (Flot) from Heslington Hill

Context	Recovery	Content notes
C1010	FMS	A total of 113 fragments: five cattle (four teeth and one carpal), one caprovid (measurable proximal metacarpal), and three pig (one each of ageable mandible, tooth and unfused distal tibia) bones. The rest of the material was recorded as either large or medium mammal, or completely unidentified, with elements of the head, torso and hind limb all represented.
C1015	FMS	A single fragment of calcined medium mammal rib fragment about 20mm across, plus three small fragments of unidentified mammal bone.
C1020	FMS	One small fragment of large mammal tooth.
C1021	FMS	A single damaged cattle lower third molar and a fragment of a pig upper premolar.
C1022	FMS	A single piece of calcined medium mammal 1 long bone shaft approximately 30mm across.
C1010	Flot	A total of 83 bones were removed from the sieved residue, the majority of which (60 fragments) were recorded as unidentified. Six bones identified to species, four were identified as cattle (tooth, metacarpal, and measurable humerus and astragalus) and two as caprovid (both ageable mandibular molars). There were clearly defined knife marks on the medial surface of the distal humerus which could have derived from skinning, filleting or disarticulation by slicing through ligament attachments.

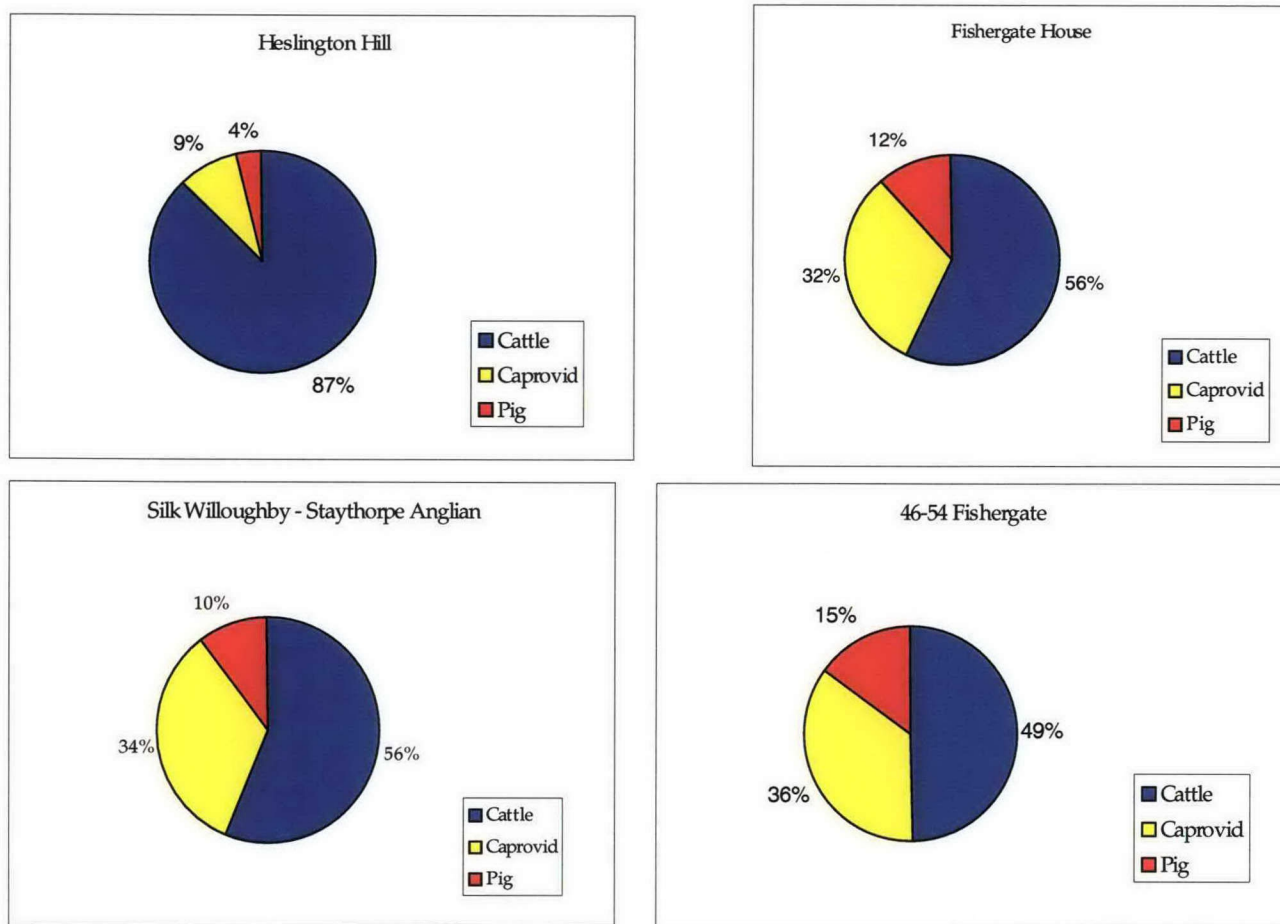


Figure1 Pie charts of proportions of the main domesticates from the Anglian phases at Heslington Hill, 46 - 54 Fishergate (O'Connor 1991), Fishergate House (hand-collected), York and Silk Willoughby to Staythorpe pipeline.

APPENDIX E METALWORKING RESIDUES

Cecily Spall

1.0 INTRODUCTION

A small assemblage of slags and one piece of metalworking ceramic were submitted for assessment. The assemblage was retrieved during a watching brief undertaken by Field Archaeology Specialists on Heslington Hill adjacent to the JB Morrell Library, University Campus. The assemblage was largely hand-collected although some ferrous slag and hammerscale was retrieved from fine-mesh sieving and flotation residues. The assessment was undertaken in accordance with guidelines published by English Heritage (Jones 2001) and aimed to identify which metalworking processes were present in the assemblage.

2.0 IRON-WORKING

Ferrous smelting or smithing slag can often be classified by morphological classification. Tap slag, raked slag and bowl shaped slags (or smelting furnace bottoms) are clearly identified as deriving from the smelting process. Smithing slag resulting from a smithing hearth, working of iron blooms and the making of wrought iron objects normally generates smaller sized slag. However, some slag cannot be classified on morphological grounds and is identified as 'undiagnostic' slag, although due to its small size it is most likely that it derives from the smithing process. It has also been argued that sites of early medieval date produce slags from both the smelting and smithing process that are not readily distinguishable.

1.86kg of ferrous slag was recovered from deposits dated by pottery to the 6th to 7th century. The majority of the material can only be identified as undiagnostic slag but nevertheless indicates some form of iron-working at the site which is likely since small-scale iron-smithing is common on British sites of this period. One small piece of slag from C1021 has a black/blue lustre which is typical of tap-slag from smelting and though small, appears to have the characteristic rivulets of molten slag visible in its surface. One piece of dense slag from C1010 appears to be a fragment of a furnace bottom. It has evidence for an original circular shape which also had a skin of fine sandy clay adhering to the base. Another large piece of slag from C1010 can be identified as a smithing hearth-bottom due to its size, roughly plano-convex shape and small depression in the top which may have been caused by the air blast (Jones 2001, 15).

Hammerscale

The recovery of hammerscale is a clear indication of iron-smithing processes, although it can derive from primary smithing or secondary smithing and is not clearly indicative of either activity when found in a secondary context. Primary smithing takes place immediately after the bloom has been removed from the smelting furnace when the bloom is worked into a bar or 'ingot'; secondary smithing derives from the forging and working of iron into objects in association with a smithing hearth. Both flake and spheroidal hammerscale has been recovered from C1010, C1015, C1017, C1020, C1021 and C1022. The hammerscale was retrieved from flotation and fine-mesh sieving residues by scanning with a magnet. This procedure attracted hammerscale but also stones and nodules which were naturally iron-rich. In some cases only one piece of hammerscale was clearly visible in the material from magnet scanning.

The quantity of hammerscale recovered from deposits is not significant but its presence complements other metalworking residues from the site and due to its small size (c.0.5 - 2mm), is unlikely to have travelled far.

3.0 NON-FERROUS METALWORKING

One piece of ceramic metal-working mould, probably made from fire-baked clay (Find number 105), was recovered from C1011. The two conjoining fragments form part of a base of what appears to be part of a bivalve mould possibly used to cast small amounts of copper-alloy. However, the presumably original sub-rectangular shape of the mould base is only partially intact and the upper surface where the impression of the object might be found is not present making further identification impossible. The base of the mould displays superficial vitrification present as small bubbles in the surface.



This is unlikely to be due to deliberate heating from below and may have been caused during the baking of the mould to harden it.

4.0 FUEL ASH SLAG

One piece of fuel ash slag was hand-collected from C1010. It is lightweight, glassy and has vitrified clay within its makeup. This cannot be linked to metal-working and fuel ash slag can be a product of many high temperature activities.

5.0 CATALOGUE

Context no	Find no	Description
1010	52, 55, 56 and 61	Flake and spheroidal hammer scale, three pieces of possible iron-smelting slag, seven pieces of undiagnostic slag, one piece of fuel ash slag
1011	105	Possible clay mould
1015	57 and 62	Flake and spheroidal hammer scale
1017	58	Flake hammer scale
1020	53, 59 and 63	Flake and spheroidal hammer scale, five small pieces of undiagnostic slag
1021	54 and 64	Flake hammer scale, one small piece of possible tap slag, two pieces of undiagnostic slag
1022	60 and 65	Flake and spheroidal hammer scale

6.0 ASSESSMENT

The material recovered during the watching brief is clearly indicative of iron-working and although none of the material derives from primary contexts, the small presence of hammer scale suggests that the metal-working activity took place nearby. It is likely that the working of iron included smelting activity due to the possible fragment of furnace bottom recovered from C1010, and smithing is proven due to the smithing hearth bottom also from C1010 and hammer scale. On a domestic site of this date this is not surprising since small-scale smithing for repairs or the manufacture of tools is thought to be commonplace. The assemblage should be compared to assemblages from sites of the Anglo-Saxon period, for example, Mucking, Essex.

References

Jones, D.M. (ed.) 2001. 'Archaeometallurgy', *Centre for Archaeology Guidelines*, English Heritage



APPENDIX F CERAMIC BUILDING MATERIAL ASSESSMENT AND FULL CATALOGUE

Cecily Spall

1.0 INTRODUCTION

A small assemblage (46 fragments; 5.18kg) of ceramic building material (CBM) was submitted for assessment and full recording. The assemblage was recovered during a watching brief undertaken by Field Archaeology Specialists during the construction of a car park and new Medical School on Heslington Hill to the north of the J.B. Morrell Library.

2.0 ASSESSMENT PROCEDURE

The assemblage was recorded using a system based on that used by the Museum of London and was undertaken in accordance with the draft Minimum Standards for Recovery, Curation and Publication for Ceramic Building Material issued by the Archaeological Ceramic Building Materials Group (ACBMG 2002)

Each piece of CBM was recorded individually and information about form, date, dimensions and weight were captured alongside features of note such as stamps, glazes or imprints. Marks from manufacture were recorded such as indented borders and over- or under-firing. Evidence for re-use was also noted such as mortar or sooting. A small area of the CBM was broken off to inspect a clean section of fabric which was viewed using a hand lens (x10 magnification). The material was referenced to the fabric series of Roman and medieval fabrics compiled and maintained by Field Archaeology Specialists. Whether a piece of CBM was retained was also noted.

A disposal strategy was implemented, although given the small size of the assemblage the normal criteria for disposal were ignored. Only very small, abraded fragments of CBM, which were undiagnostic of form were discarded and this amounted to only approx. 5% of the overall assemblage.

All information captured was entered directly into a Microsoft Access 2002 database and forms the full catalogue (below) and part of the excavation digital archive.

3.0 ASSESSMENT

3.1 ROMAN MATERIAL

Roman CBM comprised approximately 52% of the total assemblage and included small amounts of roofing material and brick. The fabrics were limited to the typical range known in York and with the exception of one large brick fragment from C1010 all the CBM was relatively small and abraded.

Tegulae and imbrices were present in the assemblage but all were relatively small fragments of the forms. Two tegula flanges were present; one with a Betts' Lower cutaway type B (Betts 1985 160).

Brick fragments were also present. Some of these may actually have been from tegulae but no distinguishing features were present and they were subsequently recorded as brick. One exception was a large fragment of brick, the minimum breadth measurement of which suggested a pedalis-sized brick which is a brick measuring one Roman foot square (29.6cm). This fragment also displayed a signature mark of the brick maker executed with two or possibly three fingers. Unfortunately not enough of the signature mark survived to compare it to known signature series. The signature mark has a partial hobnail boot print on top of it. In total twelve hobnails are visible on the surface of the brick.



3.2 MEDIEVAL MATERIAL

Approximately 48% of the overall assemblage was dateable to the medieval period. The majority of the assemblage consisted of plain roofing tile which is broadly dated to the 13th to 16th century. One fragment of crested ridge tile was present in the assemblage and took the form of an interrupted ridge decorated with upstanding square tabs of clay crest forming a crenellated design. Crested ridge tiles are known in London from the 1190s onwards (Dr Ian Betts *pers.comm.*) but are broadly dated to the 12th to 16th century and complement roofs of plain or nibtile. One medieval brick was present in the assemblage and is dated to the 14th to 16th century. The medieval material was generally small and abraded.

4.0 ARCHIVE

The retained sample of CBM should be kept to enable integration within a city-wide study of the use of CBM during the Roman and medieval periods. The assemblage has some analytical potential should further excavation in the area yield CBM assemblages especially with regard to the hinterland of Roman York. A copy of the full catalogue will be deposited with the site archive and a copy will be held by Field Archaeology Specialists.

References

ACBMG, 2002. *Minimum Standards for Recovery, Curation and Publication of Ceramic Building Material* (Unpublished draft)

Betts, I.M. 1985. *A Scientific investigation of the brick and tile industry of York to the mid-eighteenth century*, Bradford University (unpublished DPhil thesis)

Catalogue

ID	CNo	FNo	EDate	LDate	Fabric	Form	Weight (g)	T (mm)	Retained	Comments
6	1000		12	16	27	ridge tile	150	19	Yes	crested ridgetile
7	1000		14	16	64	brick	230	52	Yes	light sanding
8	1000		13	16	6	plain	56	16	Yes	
9	1000		13	16	0	plain	24	0	No	6 small fragments not retained
10	1000		13	16	4	plain	24	0	Yes	
11	1000		13	16	27	plain	52	13	Yes	abraded
12	1000		13	16	40	plain	20	14	Yes	
13	1000		13	16	20	plain	236	19	Yes	
14	1000		13	16	53	plain	52	12	Yes	
15	1000		13	16	31	plain	32	15	Yes	under fired
16	1000		13	16	53	plain	14	0	Yes	
17	1000		13	16	40	plain	16	13	Yes	
18	1000		13	16	53	plain	8	0	Yes	
19	1000		13	16	23	plain	14	0	Yes	
20	1000		13	16	27	plain	16	13	Yes	
21	1000		13	16	7	plain	28	16	Yes	
22	1000		13	16	20	plain	20	0	Yes	overfired
23	1000		1	4	65	rbrick	556	0	Yes	
24	1000		1	4	0	rbrick	32	0	No	2 small fragments not retained
25	1000		1	4	61	imbrex	180	14	Yes	
26	1010	4	1	4	55	rbrick	2162	51	Yes	minimum pedalis, signature mark, hobnail imprint over signature
27	1010	4	1	4	55	rbrick	26	0	Yes	
28	1010	4	1	4	55	rbrick	34	0	Yes	
29	1010	4	1	4	55	imbrex	102	0	Yes	
30	1010	4	1	4	61	rbrick	38	0	Yes	
31	1010	4	1	4	54	imbrex	140	17	Yes	
32	1010	4	13	16	0	plain	18	0	No	7 small fragments not retained
33	1010	4	1	4	55	rbrick	36	19	Yes	
34	1010	4	13	16	23	?plain	46	15	Yes	
35	1020		1	4	61	imbrex	40	18	Yes	
36	1020		1	4	58	tegula	162	22	Yes	42mm flange height, Betts' lower cutaway type b
37	1020		1	4	65	rbrick	132	38	Yes	abraded
38	1020		1	4	65	rbrick	50	16	Yes	



ID	CNo	FNo	EDate	LDate	Fabric	Form	Weight (g)	T (mm)	Retained	Comments
39	1020		1	4	0	rbrick	34	0	No	3 small abraded fragments not retained
40	1020		1	4	55	rbrick	60	0	Yes	
41	1020		1	4	56	tegula	50	23	Yes	36mm flange height
42	1020		1	4	4	plain	16	23	Yes	
43	1017		1	4	60	rbrick	96	0	Yes	abraded
44	1012	5	13	16	23	plain	46	14	Yes	
45	1012	5	1	4	55	rbrick	14	0	Yes	small, abraded
46	1021		1	4	0	rbrick	20	0	No	6 small abraded fragments not retained
47	1021		1	4	55	rbrick	80	0	Yes	
48	1021		1	4	23	plain	24	0	Yes	
49	1021		1	4	58	?tegula	24	22	Yes	overfired
50	1015		1	4	0	rbrick	16	0	No	2 small abraded fragments not retained



APPENDIX G LITHIC MATERIAL ASSESSMENT
Andrew Copp

1.0 INTRODUCTION

A total of 9 pieces of flint were collected during the excavations at Heslington Hill, from contexts representing both feature fills and layers.

Context	Feature	No of frags	Notes
1000		2	
1004	2	1	
1010		1	possible scraper
1015		3	
1020		2	

2.0 DISCUSSION

The assemblage included two small flint spalls from C1020, recovered during flotation. The remainder of the assemblage represents a group of small waste flakes, although Find Number 70 from C1010 appears to be a crude scraper, steep retouch extending around the narrow proximal end and along one side.

Small amounts of cortex survived on two of the flakes and the pale brown/creamy colour and grainy texture suggest that the parent material derived from a local river or glacial deposit.

Only one of the flakes and the possible scraper were unpatinated and the flint was a brown/grey colour in these cases. All the other flakes were patinated and in all cases the patination covered the surface of the flakes. On one of the flakes the patination was a blue/grey colour, otherwise it was an opaque whitish grey colour.

None of the material showed signs of burning.

3.0 ASSESSMENT

No diagnostic elements were present in this small lithic assemblage which would suggest a date earlier than the Neolithic period. The presence of small flint spalls may suggest that some flint reduction processes occurred at the site.

The assemblage is of no further analytical value.



APPENDIX H PLANT REMAINS ASSESSMENT

Stephen Rowland

1.0 INTRODUCTION

This document reports on the plant remains recovered from an assessment of a total of five sediment samples (roughly 30 litres each) from the watching brief undertaken by Field Archaeology Specialists Ltd (FAS) at Heslington Hill near the J.B. Morrell library, University of York, Heslington. Samples were submitted for flotation for the recovery of plant remains along with small artefacts and bones, the latter of which are discussed in Appendix D. Samples were taken from C1010, C1017 (Intervention 1), C1020, C1021, and C1022 (Intervention 2), all of which derived from two depressions backfilled with deposits of Anglian date.

1.1 METHODOLOGY

Two tubs, c.20 litres, of material was washed down in a water recycling flotation tank to remove the fine silt and clay particles, with the light fraction being washed into a 250 micron sieve and the more dense residue trapped in a 1mm mesh within the flotation tank. In each case, ten litres of soil was retained for further analysis. Once dried, the residue was sorted for both environmental and cultural material, and the nature and frequency of each component (expressed as 'common', 'occasional' or 'rare') was noted on the soil sample processing record for each sample. If it contained no uncharred plant remains, the light fraction was also dried, but would otherwise have been kept wet.

2.0 ASSESSMENT

There were no uncharred plant or insect remains of ancient date. Indeed, even carbonised material was rather limited, being categorised as 'rare' in each of the sorted residues. Small numbers of charred grain were noted in the light fractions from C1010, C1015 and C1020.

3.0 DISCUSSION

Although the evidence from flotation is rather limited in real terms, it does provide one or two hints that could be of interest. The lack of uncharred plant material and insects is hardly surprising considering the nature of the soil conditions which lack the permanent waterlogging necessary for the preservation of these remains. It is possible that the depressed features from which the Anglian material was recovered could have been seasonally waterlogged, but continual alteration of the burial environment would certainly not have been conducive to uncharred plant and insect preservation.

The presence of charred grain does however suggest that cereal processing was carried out in the close vicinity, with the ashes from such activities as grain drying or malting being disposed of along with food remains. The fact that these remains were recovered in relatively small amounts could well be due to the open nature of the waste deposit where, left open to the elements, these lighter remains would have been extremely susceptible to dispersal by wind and rain. An alternative possibility is that grains left over from harvesting were carbonised during stubble burning and were then blown onto the midden.



4.0 POTENTIAL FOR FURTHER ANALYSIS

Although a tub of soil was retained from each of the samples, because of the preservation conditions, there is little that could be gained from processing this material under laboratory conditions, although it may be worth sieving them for the recovery of small artefacts such as beads that were found in some of the samples. It would be worth conducting further analysis on the light fractions of the samples containing burnt grain (C1010, C1015 and C1020), partly to establish the species of cereal, but also to determine the processing stage at which the grain was carbonised along with the presence of other, smaller plant remains such as weed seeds that could shed some light on the environment exploited for cultivation.

5.0 ARCHIVE

All light fractions, sorted materials and digital records are currently stored at Field Archaeology Specialists Ltd.

