YORK ARCHAEOLOGICAL TRUST

HESLINGTON EAST
HESLINGTON
YORK

A report on an Archaeological Evaluation

Part 2

by Neil Macnab

REPORT NUMBER 2004/23

6. POTTERY

Ailsa Mainman

6.1 Summary

The pottery from this site covers a wide chronological span from the prehistoric period to the modern. Some periods are better represented than others and there are gaps in the sequence. The earliest material is a group of soft porous sherds (Context 13030) which might be Late Bronze Age or Iron Age in date.

There is also a small group of contexts which have produced what appears to be handmade Iron Age pottery, although there is potentially some confusion with possible later Anglian (5th-9th century) material. Where there are only body sherds found, it is very difficult to be certain of the correct dating of this material; essentially both are handmade, gritty sherds, often quite thick and crudely made in simple bonfire kilns. The clays and tempering agents used draw from what is locally available. Where rims or bases were recovered the ascription is more credible although this too can be difficult as the forms are usually simple cooking pots.

Roman pottery makes up most of the assemblage with a range from the very early 2nd century (as represented by the Ebor wares) to the 4th century (indicated by calcite-gritted wares). The whole Roman period is represented as there are several different types of grey wares of 2nd and 3rd century date. Very few fine wares or imported wares, including samian, were recovered and the assemblage was not large. Contexts often produced few sherds making a tight chronology difficult to establish. Nonetheless the Ebor white-slipped flagon, mortaria and red-painted wares in Context 33002 establish an early date for the beginning of the sequence.

Of particular interest is the small group of black, well-burnished, thin-walled jars or beakers which were recovered together as a group, probably as a votive offering (contexts 36000-36006). Only the lower parts of these beakers survive intact (presumably the tops were destroyed by ploughing), but sherds from the upper part of one show a rusticated upper part with lattice-burnished decoration. All are smaller than the usual jars or beakers of this type, and are narrow-bodied, straight-sided forms with a good burnish inside and out. Small, even miniature, vessels have been found elsewhere used as votive pots (Monaghan 1997, 850) and these seem to be clearly associated with the bathhouse.

The soils have caused the calcite or shell used as a temper within the later Dales and calcite-gritted wares to be leached out completely (removed by the reaction of acidic water with the calcite and shell in the pottery, as the water filters down through the soil strata in which the pottery is contained). This makes identification of some of the late Roman pottery types difficult, especially when no rims, bases or other features are present.

The next group in the sequence is a small group of Anglian sherds. The possibility of confusion with the Iron Age material has already been discussed. Further analysis, in

particular comparison with the pottery fabrics of the Anglian vessels recovered by Field Archaeology Services at Heslington Hill (Mainman 2003), will help to clarify this distinction. On the basis of form, however, there is material that is clearly Anglian in date.

Following this period, which probably dates broadly to the 6th-8th centuries, there is nothing at all which relates to the Anglo-Scandinavian period. There is also very little of the Norman period other than a few sherds of the normally ubiquitous 12th century gritty wares. The medieval material is also poorly represented and many sherds are too abraded to allow for clear identification. The 15th and 16th century is represented by a few sherds of Humber ware and Cistercian ware, and there are contexts which produced the typical range of post-medieval and modern types.

CONTEXT	NO. OF SHERDS	SPOT DATE	DETAILS
1004	11	20th Century	miscellaneous sherds
3002	2	Iron Age	Two large thick gritty handmade rim sherds, one of which has the possible start to a raised lug or handle. Probably Iron Age; other possibility is Anglian but they appear too crude.
4009	1	12th Century	Gritty ware
5006	5	16th Century	1 12th century gritty ware, 3 Cistercian wares, 1 yellow ware
5010	3	15th Century	2 gritty wares, 1 Humber ware
9000	1	2nd Century	1 Ebor ware
11000	6	19th Century	Includes English stoneware, tin-glazed earthenwares and Brown glazed ware.
11011	7	Early 19th Century	Includes post medieval pancheon sherds and Black wares
12000	1	19th Century	1 English stoneware
13000	8	Anglian	4 Anglian, 3 grey wares, 1 pale ware
13030	20	Prehistoric	20 sherds of a very soft porous handmade pottery, likely to be early Iron Age or Bronze Age. No rim or base sherds. Undecorated
15000	2	17th Century	2 post medieval 17th century earthernwares
16000	1	19th Century	1 tin glaxed earthernware
17000	6	Post Medieval	6 post medieval earthenwares
18000	1	12th Century	1 gritty ware
19000	6	Post Medieval	6 post medieval earthenwares
20000	1	12th Century	1 12th Century gritty ware
22003	1	Anglian	1 handmade possible Anglian sherd
25013	3	Iron Age	3 handmade sherds, probably Iron Age, including a base
26004	1	18th Century	1 Blackware
29000	3	Uncertain	3 unidentified abraded sherds
31000	1	Roman	1 grey ware
31009	2	13th Century	2 very abraded fine oxidised sherds with copper green glaze. Possibly Scarborough ware

31014	1	?Roman	1 abraded pale ware
33000	11	2nd Century	1 Ebor ware, 1 Ebor mortarium fragment, 1 Ebor red painted, 1 Samian, 6 grey wares
33002	59	2nd Century	1 Ebor mortaris, 1 Ebor red painted ware, 47 sherds from an Ebor white-slipped flagon, 4 sherds from a fine carinated grey ware form, 6 other early grey wares
33024	2	2nd/ 3rd Century	2 grey ware rims
33028	1	Uncertain	1 small abraded sherd
33033	2	Roman	2 small abraded sherds
33041	1	2nd Century	1 Ebor ware
34000	4	2nd/3rd Century	Roman grey wares
34002	1	2nd/ 3rd Century	1 grey ware rim
35000	1	2nd/ 3rd Century	1 grey ware
35005	4	2nd Century	3 very abraded colour-coated sherds, 1 Ebor ware
35009	7	14th Century	3 calcite gritted wares, 3 pale wares, 1 abraded medieval glazed fragment
35014	4	2nd/3rd Century	4 Roman grey ware fragments
36000	54	2nd/3rd Century	1 amphora sherd, 7 samian, 7 BB1, 13 BB2 and other grey wares, 2 calcite-gritted wares, 1 Dales ware, 23 sherds from a small narrow straight-sided beaker includes rusticated surface and lattice rouletting
36003	5	2nd Century	5 sherds from small grey straight-sided beaker
36004	1	2nd Century	1 base of small narrow straight-sided beaker
36005	5	2nd Century	5 sherds from a narrow straight-sided beaker
36006	5	2nd Century	5 sherds from a small straight-sided narrow beaker
36007	1	Anglian	1 everted jar rim with soot marks. Probably Anglian in date, possibly Iron Age.
36008	1	2nd/ 3rd Century	1 grey ware handle
36009	2	2nd/ 3rd Century	2 grey wares
36019	1	2nd Century	1 grey ware
36022	7	2nd Century	4 grey wares, 1 samian, 2 Ebor wares
36024	4	2nd/ 3rd Century	2 grey wares, 2 oxidised wares
36033	13	Late 3rd/ 4th Century	3 Calcite-gritted wares, 8 grey wares, 2 Ebor wares
36036	1	Uncertain	1 abraded oxidised sherd
36037	1	2nd Century	1 grey ware
36045	19	Late 3rd/ 4th Century	6 Roman calcite-gritted wares, 1 samian, 1 Ebor, 11 grey wares
37000	1	19th Century	1 tin glazed earthenware

38000	25	Anglian	6 amphora fragments, 1 samian, 11 grey wares, 2 pale wares, 5 sherds from an Anglian cooking pot base
38004	3	3rd Century	3 late grey wares
38005	14	2nd/ 3rd Century	3 pale wares, 1 amphora fragment, 10 grey wares
38007	3	Late 3rd/ 4th Century	2 mortaria fragments, 1 calcite gritted ware
38017	2	2nd Century	2 amphora fragments
38018	1	2nd/ 3rd Century	1 grey ware
39000	30	2nd/ Early 3rd Century	7 pale ware, 3 leached ?Dales ware, 1 mortarium, 5 BB2, 14 grey wares
39002	1	Medieval	1 oxidised abraded ware with glaze
39003	1	Medieval	1 oxidised sherd, very abraded
39007	1	2nd/ 3rd Century	1 Roman grey ware
39009	2	?Anglian	2 handmade shelly or calcite gritted (now leached) probably Anglian in date
39011	9	2nd Century	1 samian,1 oxidised sherd, 7 grey wares
39013	7	3rd Century	4 grey wares, 3 leached Roman wares, possibly calcite-gritted types
39015	9	2nd Century	8 grey wares, 1 samian
39017	16	Late 3rd/ 4th Century	1 handmade calcite-gritted, 8 burnished grey wares, 7 other grey wares
39020	1	2nd Century	1 Ebor ware
39021	4	2nd/ 3rd Century	3 grey wares, 1 leached sherd
40000	2	2nd/ 3rd Century	2 pale Roman wares
42004	1	Uncertain	1 unidentified oxidised sherd
42009	1	13th Century	1 13th century sherd
43000	2	?Anglian	1 handmade sherd, 1 handmade rim, both possibly Anglian
45002	1	Post Medieval	1 post medieval earthenware
48006	1	2nd Century	1 Ebor ware
49000	1	15th Century	1 late Humber ware
49013	5	Uncertain	5 oxidised abraded sherds
50000	5	19th Century	2 Ebor ware, 3 tin glazed earthenwares
50002	5	18th Century	3 grey wares, 2 Brown glazed wares
53002	3	19th Century	2 Humber, 1 tin-glazed earthenware
54003	3	4th Century	3 calcite-gritted wares
55002	8	15th Century	3 Ebor wares, 4 Roman grey wares, 1 sherd of Langewehe stoneware
56000	20	2nd/ 3rd Century	2 Ebor wares, 3 samian, 4 pale ware, 2 BB2 wares, 9 grey wares
56003	7	Roman	7 pale Roman wares
56004	7	2nd/ 3rd Century	6 grey wares, 1 BB1 ware

56009	2	Roman	2 Roman grey wares
56011	2	2nd/ 3rd Century	1 mortaria fragment, 1 sherd from fluted beaker
56015	1	2nd/ 3rd Century	1 grey ware
56018	36	?Iron Age or Late Roman	36 sherds of leached handmade vessels (1 or 2). Possibly Iron Age but more probably a late Roman type
56022	45	2nd/ 3rd Century	6 leached wares, 1 samian ware, 3 folded beakers, 1 amphora, 34 grey wares
56030	3	2nd/ 3rd Century	3 BB2 sherds
58010	10	?Iron Age/ 2nd Century	9 handmade sherds (includes 4 scraps) probably Iron Age in date but possibly Anglian
62005	2	19th Century	2 tin-glazed earthenwares
66022	1	Post Medieval	1 post medieval earthenware
75006	1	Uncertain	1 unidentified lump of clay
79007	1	Roman	1 pale Roman ware
80001	2	15th Century	2 Humber ware sherds
80003	1	13th Century	1 13th century ware
81003	1	Post Medieval	1 post medieval earthen ware
83003	1	13th Century	1 13th century sherd
84007	4	17th Century	1 Black ware, 2 scraps, 1 pale ware
88012	6	16th Century	5 Humber wares, 1 Ryedale ware
93003	2	14th / 15th Century	1 Humber ware, 1 Brandsby flanged cooking pot rim
100003	1	Uncertain	1 unidentified
102005	1	Medieval	1 medieval sherd
103008	1	Roman	1 abraded Roman
103019	1	Anglian / Iron Age	1 Anglian or Iron Age handmade sherd
103022	1	Anglian	1 Anglian sherd
103029	1	Iron Age	1 Iron Age sherd
106012	1	Anglian	1 everted jar rim with soot marks. Probably Anglian in date, possibly Iron Age
106015	3	Iron Age? / Anglian?	3 gritty sherds including a base fragment. Could be either Anglian or Iron Age
107014	15	?Anglian	15 sherds from a single vessel including rim sherds. Probably Anglian
107016	3	?Anglian / Prehistoric	3 small scraps of handmade pottery
107018	2	17th Century	1 Ebor ware, 1 Black ware
110005	2	13th Century	2 13th century wares
110011	1	2nd Century	1 Ebor ware
112008	1	Roman	1 pale ware
120000	2	19th Century	2 tin-glazed earthenware
122000	6	19th Century	3 tin-glazed earthenwares, 1 English stoneware, 2 Ebor wares

123000	5	19th Century	5 tin-glazed earthenwares
123002	1	19th Century	1 tin-glazed earthenware
124000	12	19th Century	Includes flower pot, tin-glazed earthenwares and stone ware
125000	3	19th Century	1 slipped ware, 1 tin-glazed earthenware, 1 post medieval earthenware
125002	1	Post Medieval	1 post medieval earthenware

Table 1: *Pottery spot-dates and brief descriptions*

6.2 Recommendations for future work

- The prehistoric and Anglian material should be studied in detail, especially using fabric analysis, to help to define and characterise these wares and their forms. All finds of these periods are important as the ceramic sequence for them in the York area is still little understood.

- The votive group should be further researched and comparanda examined.

- Further work on the grey and coarse wares may help to establish the Roman sequence in more detail.

  Little further work needs to be done on any of the other material.

7. CERAMIC BUILDING MATERIALS

Jane McComish

7.1. Introduction

A total of 54.894kg of Ceramic Building Material (CBM) was examined from the site. A number of forms were identified including imbrex, tegula, Roman brick (listed as Rbrick in the tables below), flue tile, medieval peg, plain, nib and ridge tiles, brick, pan tiles, field drains, modern brick and possible stone roof tile. The CBM was recorded following standard YAT procedures.

7.2 Fabrics

The Roman material on site is in a wide range of fabrics: R0, R1, R2-3, R6-12, and R14, but the dominant fabric is clearly R10, which accounts for 74.05% of the Roman material by weight. One fragment of Roman brick was in a highly unusual fabric (designated R99) which was very similar in composition to R10 but with occasional large voids up to 9mm x 3mm, moderate limestone fragments up to 4mm x 4.5mm in size, but typically 0.5mm x 0.5mm in size, and frequent small black grains, possibly clay pellets. It is possible this single fragment represents a variant of R10.

The medieval material on the site is also in a wide variety of fabrics as listed in Table 1 below, each of which is often represented by just a few fragments. There was a single fragment of plain tile in an unusual fabric (M99), which was a dark red, streaky fabric with infrequent quartz grains up to 0.3mm x 0.3mm, occasional pebbles up to 13mm x 7mm, frequent dark grains, possibly mudstone, up to 3mm x 2mm, and occasional limestone up to 2.5mm x 1mm in size.

It is possible that the wide variety of both Roman and medieval fabric types, each represented by just a few fragments is as a result of material being tipped on the site from a variety of sources. Much of the material may have arrived associated with night soil from privies across the city of York, the tile getting into this material through the cleaning out of these features. It is notable, however, that many of the medieval fragments are in fabrics that are not particularly common within York itself (M23, M33, M46, M48, M54, M60, M62 and M63) and this may imply that some of the material at least originated from sources outside the city. The same may be true of the R99 and M99 fragments. It is of interest that where Roman structures are present on site (notably Trench 36, but to a lesser extend Trench 56) they are overwhelmingly in fabric R10. It is reasonable to suppose that these buildings, severely damaged by ploughing, are the source of the R10 material spread across much of the site.

There is no clear link between fabric and form for either the Roman or medieval periods.

FABRIC	WEIGHT	WEIGHT AS A % OF TOTAL	FORMS PRESENT
R0	191	0.35	Rbrick
R1	755	1.37	Rbrick, tegula
R2	1160	2.11	Rbrick, imbrex, tegula
R3	275	0.50	Rbrick
R6	390	0.72	Rbrick, imbrex
R7	25	0.05	Rbrick
R8	225	0.41	Rbrick, imbrex
R9	1835	3.34	Rbrick
R10	22508	40.94	Rbrick, imbrex, tegula, flue
R11	1475	2.68	Rbrick, imbrex, tegula
R12	1245	2.26	Rbrick, imbrex, tegula
R14	110	0.20	Imbrex
R99	200	0.36	Rbrick
M0	1440	2.62	Plain, brick
M1	1310	2.39	Plain
M3	515	0.94	Plain
M4	1775	3.23	Plain, ridge
M7	50	0.09	Plain
M15	660	1.20	Plain
M23	475	0.86	Brick
M26	1875	3.41	Brick
M30	275	0.50	Brick
M31	6650	12.09	Brick
M33	175	0.32	Plain, nib
M46	25	0.05	Brick
M48	75	0.14	Brick
M54	125	0.23	Plain
M60	265	0.48	Plain
M62	260	0.47	Brick
M63?	250	0.45	Peg
M99	150	0.27	Plain
P4	75	0.14	Pan
PO	7575	13.78	Brick, drain
SO	500	0.91	Possibly stone roof tile
TOTAL WEIGHT	**54894**		

Table 2: *Summary of CBM fabrics present*

7.3 Forms

A number of forms were identified ranging from Roman to 19th/20th century in date.

7.3.1 Roman forms

A small number of Roman forms were identified including brick, tegula, imbrex and flue tile. Most of the material recovered from the site was very fragmentary and in some cases highly abraded; no tile or brick lengths or breadths were preserved and in some cases it was impossible to obtain the original thickness of the fragment. Where it was impossible to determine the form the fragment was classified as Roman brick. Most of the forms present on site were in use throughout the entire Roman period, and they are therefore of relatively little help in dating, however the flue tiles had narrower date ranges (see below). Most of the trenches contained minute amounts of Roman material, and this often comprised small fragments, which as stated above could represent material tipped on the site with its origins elsewhere. Significant collections of CBM were recovered however from both Trenches 36 and 38, with a smaller group from Trench 39 (the material from these three trenches is described in detail below).

FORM	TOTAL WEIGHT	WEIGHT AS A % OF TOTAL
Rbrick	20999	38.25
Tegula	4595	8.37
Imbrex	4690	8.53
Flue	110	0.20
Plain	4450	8.11
Peg	250	0.46
Nib	125	0.23
Ridge	525	0.96
Brick	11000	20.04
Pan	75	0.14
Modern brick	7300	13.30
Modern drain	275	0.50
Stone roof tile?	500	0.91
TOTAL WEIGHT	**54894**	

Table 3: *Forms present as a percentage of the total CBM on site*

The commonest form over the whole site was Roman brick which consisted of small fragments that could have either been tegula or brick (but this could not be determined), together with larger fragments which were clearly brick. Bricks could be used in a number of differing ways including walling, as *pilae* in hypocausts, or for flooring. The bricks on site ranged from 13-57mm in thickness. The thinner fragments were possibly originally tegula, but this cannot be proved.

Five of the fragments had signature marks on the upper surface. Four of the fragments were probably originally tegula as they were below 19mm in thickness (walling bricks would tend to be thicker than this). In addition signature marks are common on tegula, but relatively rare on bricks (Betts, 1985, 200). Two of the signatures were in the form of a narrow loop drawn with a finger (Context 36000 and 38000) while the third (Context 39007) had a broader loop again drawn with a finger. As none of these marks survived in their entirety it was difficult to relate them to the signature marks listed in Betts (ibid.,

192-4), but it is possible that they may be Types 5 and 25 respectively. A fragment from Context 49000 had a tiny groove roughly in the shape of a letter V on the upper surface, which had been made with a pointed stick or other implement. A fragment from 38004 had a pair of parallel lines, with a third shorter line at a diagonal on the upper surface that had been drawn with a pointed stick. Neither of the marks drawn with sticks bears any resemblance to the signature marks listed in Betts and they are therefore unusual pieces. The fragment from 38004 is also of interest as it is 32mm thick which implies it is a walling brick rather than a tegula, which again is unusual as relatively few walling bricks have signature marks.

Most Roman bricks seem to have been dried in sheds and it is relatively rare to find examples with rain impressions on the upper surfaces implying the tiles were dried outside (ibid., 166). The presence of a single example with rain impressions from Context 36037 is clearly therefore unusual.

The roof tile was in the form of tegula and imbrex. The tegulae were often too fragmentary to determine the thickness or profile, but the surviving flanges ranged from 34-48mm high. There were portions of three upper cut-aways surviving and two lower cut-aways. One of the lower cut-aways was Betts Type E (ibid., 160), but the other was too fragmentary to determine a type. The imbrex ranged from 12-27mm thick, which is within the range suggested by Betts (ibid, 174). A fragment of imbrex from context 38000 had an extremely rectangular indentation on the upper surface, which may originally have been a tile stamp, but this was so severely abraded it was impossible to be sure.

There was only a single fragment of box flue tile from Context 38000 which is of 2nd century or later date. This fragment may imply a heated building nearby (though not the hypocaust building in Trench 36, which lacked associated flue tiles).

7.3.2 Roman Ceramic Building Material in Trench 36

Of particular importance to the CBM from the site is the Roman building in Trench 36, which was built with limestone walls and a hypocaust of brick *pilae* (none of which were lifted during excavation, they therefore do not appear in the Integrated Archaeological Data Base for the site). Six *pilae* survived, but clearly there were originally in excess of fifteen *pilae* in three rows. Three of the *pilae* were located immediately adjacent to the walls of the building. The initial course comprised of a basal brick (which were 300mm x 200mm, 340 x 240mm and 380 x 240mm in size respectively) with up to three courses of smaller bricks (210 x 200mm in size) above. In each case the smaller bricks were located adjacent to the wall, rather than centrally on the basal brick. The remaining three *pilae* were located away from the external walls. Two of the basal bricks were 280mm x 280mm in size while the third was 280mm x 320mm, with up to two courses of smaller bricks (210mm x 200mm in size) stacked centrally above. The hypocaust is of interest as it offers a rare opportunity to compare CBM material from the *colonia* and fortress with that from a site in the hinterland. Detailed study of the CBM may in turn help in determining the function of the building.

Roman bricks usually come in a variety of sizes, and average sizes for each type of brick in York are listed in Betts (ibid., 176-80). The smallest bricks, *bessales*, were typically 220m x 210mm in size and 55mm thick, and were usually used for *pilae* columns. Clearly the smaller bricks seen in Trench 36 conform almost exactly to this size (they are marginally smaller) and are clearly used in a hypocaust. The basal bricks are however more unusual. Two sizes of bricks were normally used for the base and capping tiles of pilae, *pedalis* and *Lydion* bricks. Pedalis bricks were roughly square and were typically 300mm x 305mm x 55mm in size in York, while Lydion bricks were rectangular and came in two sizes in York (360mm x 290mm x 50mm and 440 x 280 x 60mm). The basal bricks in the Trench 36 hypocaust clearly do not correspond to the typical sizes for either pedalis or Lydion bricks in York.

It is reasonable to assume that most, if not all, of the fragments of Roman CBM recovered from Trench 36 originated from the building structure described above. The presence of soot on some of the CBM surfaces clearly fits in with the presence of a hypocaust system. It must be noted that some of the sooting was on broken edges implying that material was reused. It is of interest that no flue tiles (used to channel hot air up the walls of buildings), armchair voussoirs or clay pipes (to channel hot air through roofing vaults) were present in Trench 36. This implies that only the floor of the building was heated. The presence of both tegula and imbrex within Trench 36 indicates that the building had a tile roof, as would be expected. It is also of interest that 87% of the Roman CBM in Trench 36 was of a single fabric type (R10). This may imply the material used in construction came largely from a single kiln and/or that the building was constructed in a single phase. The relatively small quantity of material in other fabrics could represent either sporadic repair to the building or simply dumping/spreading of material from elsewhere across the trench. The site is clearly of great use in dating the production of R10 fabrics in the York area.

7.3.3 Medieval forms

The medieval roofing tiles (13^{th} -16^{th} century in date) consisted mainly of plain tiles (where the fragment was too small to determine the method of fixing the tile to the roof), with a single peg tile fragment, a single nib tile and possibly two ridge tile fragments. One fragment from Context 50000 had green glaze on the upper surface, but apart from this, none of the medieval roofing material was unusual in any way.

In addition to the ceramic roofing tiles, there were two fragments of micaceous sandstone (Contexts 56000) which may be part of a stone roofing tile, but since no peg hole was present it is impossible to be sure.

Distinguishing between medieval and post-medieval bricks can be difficult, and is normally done on the basis of the size of the bricks. Unfortunately most of the brick fragments from this site were too small to obtain any measurements so could not be closely dated. None of the bricks was unusual in terms of its form.

7.3.4 Post-medieval and modern forms

A fragment of pantile was recovered which dates from the 17th century or later (Context 1004). The only modern forms were modern machine-pressed brick and fragments of field drains.

7.4 Conclusion

The bulk of the trenches on site produced relatively small collections of material of limited interest. This material seems to have largely originated from tipping onto the site and its original origin is unclear. This material is therefore of limited use in terms of furthering the understanding of CBM usage in York and its immediate environment.

The exception to this overall pattern was the material recovered from Trenches 36, 38 and 39, each of which was associated with Roman structural remains. The CBM from these three trenches represents a collection of Roman material of great interest both in terms of what it can say about the Roman buildings in the area, and in terms of increasing the knowledge of CBM for sites in the immediate hinterland of York. These trenches offer the potential to compare material from a rural site with that from the *Colonia* and the fortress at York with a view to refining the production dates for fabric R10 and adding to the corpus of known signature marks from the area. The presence of unusually sized bricks in the hypocaust structure of Trench 36 is also clearly of interest to the study of CBM as a whole in the York area. Should full excavation of the hypocaust ever take place it is essential that all the *pilae* bricks be recovered and studied in detail.

CONTEXT	DATE	FORMS	CONTEXT	DATE	FORMS
1004	17th+	Plain, pan	39003	1-4th	Imbrex
3002	1-4th	Rbrick	39007	1-4th	Rbrick
9000	1-4th	Rbrick	39009	1-4th	Rbrick
11000	13-16th	Imbrex, plain	39011	1-4th	Rbrick
11011	1-4th	Rbrick	39013	1-4th	Rbrick
12000	13-16th	Rbrick, plain	39017	1-4th	Imbrex
12011	13-16th	Rbrick, plain, ridge?, brick,	40000	13-16th	Plain
13000	13-16th	Rbrick, plain	42004	1-4th	Rbrick
14000	1-4th	Imbrex	42009	1-4th	Rbrick
15000	13-16th	Rbrick, plain	47000	13-16th	Plain
16000	19-20th	Drain, brick	48000	13-16th	Plain, Rbrick
17000	1-4th	Rbrick, imbrex	49000	13-16th	Rbrick, plain
18000	1-4th	Rbrick	50000	13-16th	Plain, Rbrick
19000	14-16th	Brick, plain	50002	1-4th	Rbrick
20000	1-4th	Rbrick	53002	13-16th	Rbrick, plain, ridge
21000	1-4th	Imbrex?	55002	14-16th	Imbrex, brick
22003	1-4th	Rbrick	56000	13-16th	Rbrick, Stone Tile, Plain, Tegula
26004	14-16th	Rbrick?, Brick	56022	1-4th	Rbrick
28000	13-16th	Rbrick, tegula, plain,	58010	1-4th	Imbrex, Rbrick

29000	1-4th	Rbrick	62005	13-16th	Rbrick, Plain
30000	1-4th	Imbrex	66022	19th +	Brick
31011	13-16th	Rbrick, imbrex, plain	74002	1-4th	Rbrick
32000	13-16th	Rbrick, peg	74004	1-4th	Rbrick
33000	13-16th	Plain, imbrex	75006	13-16th	Plain
33002	20th	Drain	75008	13-16th	Plain
33016	1-4th	Imbrex	75012	13-16th	Plain
34000	13-16th	Rbrick, plain	77003	14-16th	Rbrick, brick
35000	14-16th	Rbrick, brick, plain	84007	13-16th	Plain
35005	1-4th	Rbrick	86005	1-4th	Rbrick
35009	1-4th	Rbrick	88102	13-16th	Plain, Nib
36000	1-4th	Tegula, Rbrick, imbrex	89002	14-16th	Plain, brick
36003	1-4th	Rbrick	100003	13-16th	Plain
36008	1-4th	Rbrick, imbrex, tegula	106020	13-16th	Plain
36021	1-4th	Rbrick	120000	14-16th	Brick, plain
36022	13-16th	Plain	120003	19-20th	Brick
36033	1-4th	Rbrick, imbrex	120004	19-20th	Brick
36037	1-4th	Rbrick, tegula	120006	13-16th	Plain
36045	1-4th	Rbrick, tegula	120007	13-16th	Brick plain
37000	13-16th	Rbrick, plain	120008	14-16th	Brick
38000	1-4th	Rbrick, imbrex, flue, tegula	120020	14-16th	Brick
38004	1-4th	Rbrick	121000	19-20th	Brick, plain
38005	1-4th	Rbrick	122000	19-20th	Brick
38007	1-4th	Rbrick, imbrex	123000	14-16th	Brick, plain
38011	1-4th	Rbrick, imbrex	123002	14-16th	Brick
38017	1-4th	Rbrick	124000	14-16th	Brick
39000	1-4th	Rbrick	125000	14-16th	Brick

Table 4: *CBM Records*

8. SMALL FINDS

Jane McComish (worked stone) and Nicola Rodgers (all other small finds)

8.1 Summary

The assemblage comprised 82 small finds which included objects spanning a wide range of dates from prehistoric saddle querns to post-medieval leather shoes and fired clay tobacco pipes.

Apart from a worked flint ?tool of uncertain date (sf135, Context 33007), the four saddle querns (see below) are probably the earliest objects on the site (see below); A fired clay spindle whorl fragment (sf161, Context 25013) was found with Iron Age pottery, and is probably contemporary.

Plate 21 *Fired clay spindle whorl, sf161*

Fragments of rotary quernstones made of lava (sf153, Context 56022; sf159, Context 56018; sf160, Context 56007) and of sandstone (sf170, Context 56018) all derive from Roman deposits, as does a fragment of worked wood waste (sf191, Context 33007), and a hone (sf134, Context 33007). Little of the ironwork was datable, but chain links (sf127, Context 36032) were found in the same deposit as a 3rd century coin (see below).

Four worked stone fragments (sf192-5) were clearly originally used as quern stones and they were all probably of prehistoric date. Sf191 and sf195 had smooth, but relatively flat worn surfaces, while sf193-4 were saddle querns. Three of the querns were made from

sandstone, while one was of sandy limestone, though the associated grinding stone was of sandstone. Two of the four (sfs193, 195) came from the same deposit (Context 51002).

A fifth worked stone fragment (AF5) was a large limestone block with smooth surfaces. This fragment did not seem to have been worked and it is possible the smoothing was simply the result of erosion.

No finds of the Anglian or Anglo-Scandinavian periods were noted; the jet crucifix (sf113, Context 50000) which was found unstratified, is possibly from the Viking period, but it seems more likely to be 12th century. The only other medieval objects are a horseshoe nail (sf174, Context 121000), also unstratified, and a later medieval horseshoe (sf169, Context 53002). All the glass fragments appeared to be post-medieval or modern in date. Several post-medieval tobacco pipes were also recorded: sf165 (Context 64014) is probably late 17th - 18th century in date. Post-medieval shoe fragments (sf150, Context 11011) were found in a deposit dated to the early 19th century.

Plate 22 *Jet crucifix, sf123*

8.2 The nature of the assemblage

This assemblage of less than 100 finds appears to derive from a wide area and cover a very wide date range, so comments on the material as a whole may not be very meaningful. Nevertheless, the overall impression of the finds is that they are of a predominantly domestic nature across all periods, although the horseshoe and horseshoe nail provide a hint of agricultural use in the medieval period. In terms of distribution of objects, Trenches 33-39 appear to have produced the greatest concentration. All of the material from trenches in Area E is post-medieval or modern.

8.3 Recommendations

The jet crucifix is a very interesting object, and although unfortunately unstratified, is worth further research. Further research should also be carried out on the saddle querns and fired clay spindle whorl which are rare examples of pre–Roman material in York; similarly, study of the Roman material itself is likely to provide useful information about the nature of Roman activity on the site. Apart from the cross, the post-Roman material is

of little value, and does not appear worth further study. AF5 can be discarded once the archaeological work in the area has been completed as it is of no archaeological merit.

SMALL FINDS NUMBER	CONTEXT	MATERIAL	DETAILS
113	50000	Jet	Almost complete cross-shaped pendant, with ring and dot and incised single line figure of Christ on the cross. Date uncertain but probably c.12th century
114	33005	Copper Alloy	Coin (see coins below)
115	33005	Copper Alloy	Coin (see coins below)
116	33005	Copper Alloy	Coin (see coins below)
117	33005	Copper Alloy	Coin (see coins below)
118	16000	Glass	Base of large post-medieval vessel
119	36000	Iron	Possible nail shank
120	39013	Iron	Nail
121	36008	Iron	Two nails
122	37000	Fired Clay	Tobacco pipe stem – post medieval
123	0		De-small found
124	13000	Glass	Two modern fragments
125	11011	Glass	Bottle-neck – post medieval
126	39017	Iron	Nail
127	36032	Iron	Chain formed of figure of 8 and oval links
128	39011	Iron	Nail
129	33000	Iron	Large spike or nail
130	31000	Glass	Vessel fragment – probably post medieval
131	50000	Glass	Two fragments – appear modern
132	39015	Iron	Nail
133	38005	Iron	Two nails
134	33007	Stone	Hone, stone type uncertain
135	33007	Flint	Worked fragment
136	36008	Copper Alloy	Rim fragment, possibly from a Roman vessel
137	36008	Iron	Nail
138	38017	Iron	Nail
139	39000	Iron	Nail
140	38017	Iron	Nail
141	39015	Iron	Nail shank
142	35005	Lead Alloy	Spillage
143	35005	Lead Alloy	Fragment of triangular section
144	38000	Iron	Three nails
145	38000	Iron	Object – possible wedge
146	38000	Iron	Slag
147	39000	Copper Alloy	Possible sheet fragment. One edge appears rounded
148	36032	Lead Alloy	Spillage

149	36032	Silver Copper Alloy	Coin (see coins below)
150	11011	Leather	Leather shoe parts, post-medieval to modern. Rear of sole unit (heal) - two parts; ?heel stiffener, and fragments of upper (?vamp). Raised heel. Small shoe size.
151	58010	Iron	Nail shank
152	43000	Copper Alloy	Coin (see coins below)
153	56022	Stone	Lava rotary quern fragment
154	56022	Iron	Three nails
155	56022	Iron	Object – possible bar fragment
156	56022	Iron	Four nails
157	26007	Iron	Nail shank
158	26004	Iron	Nail
159	56018	Stone	Lava rotary quern fragments
160	56007	Stone	Lava rotary quern fragments
161	25013	Fired Clay	Biconical spindle whorl, broken in half, possibly Iron Age
162	43000	Fired Clay	Tobacco pipe stem fragment – post medieval
163	62005	Fired Clay	Tobacco pipe stem fragment – post medieval
164	84007	Iron	Nail shank
165	64014	Fired Clay	Pipe bowl and stem, probably 18th century
166	38008	Copper Alloy	Coin (see coins below)
167	65022	Iron	Nail shank
168	51000	Copper Alloy	Substantial vessel fragment, rim
169	53002	Iron	Complete horseshoe, with 4 rectangular nail holes on each branch, probably late medieval
170	56018	Stone	fragment of large sandstone rotary quern
171	120000	Glass	Fragments, appear modern
172	120018	Glass	Fragments, date uncertain
173	121000	Glass	Fragment, date uncertain
174	121000	Iron	Horseshoe nail, trapezoidal head, medieval
175	123000	Glass	Rim fragment, probably post medieval
176	122000	Glass	Fragment, appears modern
177	0		Desmallfinded
178	122000	Fired Clay	Tobacco pipe stem fragment, post medieval
179	120014	Glass	Vessel fragment, post medieval
180	120006	Iron	Nail shank fragment
181	124000	Fired Clay	Tobacco pipe stem fragment, post medieval
182	124000	Fired Clay	Tobacco pipe stem fragment, post medieval
183	123000	Glass	Vessel fragment, appears post medieval
184	123000	Fired Clay	Tobacco pipe stem fragment, post medieval
185	123000	Fired Clay	Tobacco pipe stem fragment, post medieval
186	123000	Fired Clay	Tobacco pipe stem fragment, post medieval
187	125002		Desmallfinded
188	125002	Fired Clay	Tobacco pipe stem fragment, post medieval
189	0		Desmallfinded
190	0		Desmallfinded

191	33007	Wood	Woodworking waste, with two axe/adze facets. Degraded.
192	0	Stone	Quern (see report below)
193	51002	Stone	Saddle quern (see report below)
194	0	Stone	Saddle quern (see report below)
195	51002	Stone	Quern (see report below)

Table 5: *Small Finds*

8.3 Worked Stone Catalogue

Sf192 – Unstratified, found close to Trench 55

Fine grained sandstone. 170 x 130 x 70mm in size. Small roughly rectangular block, with only one surviving face, other faces broken off. Surviving face worn smooth. Possibly part of a quern stone.

Sf193 – Context 51002

Limestone (sandy). 400 x 270 x 130mm Irregularly shaped block, upper surface worn into a saddle shape. Found in association with a 200 x 200 x 70mm cobble of sandstone, which was also worn smooth. Saddle quern and associated grindstone.

Sf194 – Unstratified, within Trench 109

Roughly square sandstone block 360 x 240 x 160mm in size. Upper surface worn to a saddle shape. Part of a quern stone.

Sf195 – Context 51002

Roughly rectangular block or coarse-grained sandstone 320 x 170 x 100mm in size. All but one face broken off. The surviving face is worn smooth. Given the geology of the block and the wear patterns this probably forms part of a quern stone.

AF5 – Context 51002

Large unworked limestone block, roughly rectangular in shape 470 x 300 x 250mm in size. All the surfaces and edges of the block are worn totally smooth, possibly by water erosion. This block does not seem to have been worked or used, and does not seem to have any archaeological merit.

9. COINS

Craig Barclay

9.1 Identification

SMALL FIND NO.	CONTEXT	MATERIAL	DETAILS
114	33005	Copper Alloy	Trajan; Sestertius AD 97-117
115	33005	Copper Alloy	Hadrian; Sestertius AD 117-38
116	33005	Copper Alloy	Hadrian; Sestertius AD 117-38
117	33005	Copper Alloy	Trajan; Sestertius AD 97-117
The above four coins appear to comprise a small hoard. They are little worn and will be fully identifiable upon cleaning. Probably near-contemporary loss.			
149	36032	Silver Copper Alloy	Postumus; AE radiate. AD 259-68 Little wear. Near contemporary loss.
152	43000	Copper Alloy	William III; AE halfpenny 1695-1701. Heavily worn. Probably mid to late eighteenth century loss.
166	38008	Copper Alloy	Faustina II; Sestertius Post AD 145. Heavily worn. Probably mid third century loss.

Table 6: *Coins*

10. CONSERVATION ASSESSMENT

Julie Jones (metals and slag), Erica Paterson (inorganic non-metals) and Jim Spriggs (wood and leather)

10.1 Aims and Objectives

This report aims to meet the requirements of MAP2 (English Heritage, 1991) to produce a stable site archive (Phase2: Fieldwork). This has involved X-radiography and an assessment of the condition, stability and packaging of the finds.

The potential of the assemblage for further analysis and research is also discussed (MAP2 Phase 3: Assessment). The condition of the various classes of material is summarised and indicators of unusual preservation are noted. There are recommendations for investigative conservation, for additional specialist support, and topics for further research are raised.

10.2 Procedures

All metal finds were X-rayed using standard YAT procedures and equipment. Two sheets of film were used to produce a duplicate for archive purposes, and given a reference number in the YAT Conservation Laboratory series. The X-ray number was written on the packaging for each object X-rayed. Each image on the X-ray was labelled with its small find number. The plates were packaged in acid-free archival envelopes. The plate number was added to the YAT Online Photo Archive and linked to the IADB find record for each object.

All finds were examined under a binocular microscope at X20 magnification (alongside the X-radiographs). The material identifications were checked and observations made on the condition and stability of the finds. Assessment details were recorded for each find in the Conservation Work Record area on IADB, the information can be printed out through SQL Query. One wet glass small find was assessed, (sf172). Removal of the soil and microscope examination identified it as modern window glass. It was allowed to dry naturally and no further assessment was carried out.

10.3 Quantification

Fifty-three small finds from the excavations were assessed and 4 X-rays produced. The number of objects in each material category is listed below:

Fired clay	10	Leather	01
Glass	01	Stone	06
Iron	28	Slag	01
Jet	01	Lead alloy	03
Copper alloy (one is debased silver)	10	Wood (originally sent as leather)	01

10.4 Assessment

10.4.1 Iron

The iron was in fair condition, heavily corroded and from well-aerated deposits. There were very few inclusions other than sand and roots. There was no sign of active corrosion.

10.4.2 Non-ferrous metals including coins

The large copper alloy coins from Context 33005 were unstable, their surface detail is flaking. Stabilisation treatment is recommended. Although context information for 33005 notes that coins sfs114-117 were found with possible remains of a bag or wrapping, no trace of this was found on the coins themselves and no separate organic small find was sent to us. A sample (SA16) from this deposit did not produce any evidence for a container either (see page 162).

The small coin sf149 contained visible levels of silver.

The lead alloy was in fair condition, all with white to buff corrosion, which should remain stable if stored away from sources of organic acids (Cronyn 1990, 207).

10.4.3 Organic materials

sf150 - Leather shoe parts from Trench 11. Although almost certainly early modern to modern in date, the preservation of leather in this area previously occupied by a pond is an indicator for the potential for further organic material being preserved in the area.

sf191 - Woodworking waste (1 piece) from Trench 33 confirms good organic preservation due to local waterlogging from springheads. Although the piece itself is undateable and worthy only of basic recording, it is an indicator for the potential for further well-preserved wood in the area.

10.4.4 Glass

All finds were modern – no further treatment recommended.

10.4.5 Inorganic non-metals

All six stone small finds are dry and stable, and suitable for long term storage in their current condition. Three fragments of quern were identified as probable Niedermendig Lava, (sfs 153, 159 and 160). Sf187 is non-artefactual and appears to be a fossiliferous stone of some kind. Examination by a geologist may identify it further. The fired clay spindle whorl fragment (sf161) was in a stable condition and required no further treatment. Sf113, a jet pendant, is in good condition and stable, suitable for long term storage.

10.6 Recommendations

10.6.1 Further Investigative Conservation

Further work is recommended on the coins: stabilisation of sf114-117 and sf166, and cleaning the reverse of sf149 if recommended by the numismatist. The X-ray of sf152 may be good enough to allow identification; the coin is very worn and thin, but further cleaning could be undertaken if required.

YAT policy for coins, tokens, etc. is not to carry out any cleaning or investigative work until the coins and their X-rays have been seen by a numismatist. This avoids any unnecessary extra work on coins that are easily identifiable. It can also target the removal of corrosion products to a specific area of a coin. Partial cleaning does not make the coin any less stable. As with any intervention, the conservator is changing the object in some way and it is vital that this is in keeping with the needs of the specialist and owner.

Investigative work on the copper alloys may involve either partial or total removal of corrosion crusts, and chemical stabilisation or physical support if necessary, before they can be researched. Further cosmetic work or physical support may be required if the finds are selected for photography, illustration or display. Please notify the conservator of this as soon as possible.

Documentation will appear in digital form on IADB in the Conservation Work Record area. Selected finds may merit photographic or video recording as part of the documentation. Digital photos will be reduced to 640 pixels and added to the Online Photo Archive with a thumbnail image. The full-sized original will be archived on CD (Batch Number noted on IADB).

10.6.3 Storage

Packaging - the finds have been packaged appropriately for long term storage. All materials used are archive stable and acid-free. Plastic bags have been pierced to allow airflow within microclimates, reducing the risk of condensation and mould growth. 'Jiffy', (polythene) foam inserts have been added to the bags to provide additional support and protect against mechanical damage during transit. Any replacement of packaging materials should be carried out in consultation with a conservator. Avoid paper or card labels in association with metals, especially lead and lead alloys. Acid vapours will cause active corrosion (Cronyn 1990, 207).

Storage Environment - metals and slag are packed in polythene 'Stewart' boxes with silica gel to provide dry microclimates of less than 15% Relative Humidity (RH) which will halt any further corrosion, (Knight, 1992). Each standard oblong box should contain at least 6 x 100g bags of silica gel and a humidity indicator strip. It is necessary to monitor the indicator strips regularly; **if any part of the strip turns pink the gel will need to be regenerated.**

The non-metal finds are packed in foam filled bags within a cardboard box suitable for long term storage. An environment of stable temperature and 50-55% RH is

recommended for the jet with 40-60% RH being sufficient for all other non-metal finds. The wood and leather are wet and are being stored temporarily in a sealed black plastic box until they can be further recorded before discard. **Long term storage in wet-packed conditions is not recommended and recorded should be carried out as soon as possible to avoid a deterioration in condition and loss of information.**

11. ENVIRONMENTAL ASSESSMENT

John Carrott, Deborah Jaques and Kathryn Johnson of Palaeoecology Research Services with contributions by Dr. Alan Hall and Dr. Harry Kenward of The University of York Department of Archaeology (English Heritage Research Fellows)

11.1 Summary

Fifty-eight sediment samples, and very small quantities of hand-collected shell and bone, recovered from deposits at Heslington East were submitted for an evaluation of their bioarchaeological potential.

Interpretatively useful assemblages of plant and invertebrate macrofossils were recovered from several of the samples investigated. Preservation by waterlogging and charring was evident (sometimes both were recorded from the same deposit). The plant material largely reflected the kind of context inferred on stratigraphic grounds (pond fills, ditch fills, etc), with only a very small background component thought to derive from human occupation and a few weeds pointing to possible disturbance. There was also some evidence for imported heathland turves or peat. The insects suggested a human-dominated environment at all the periods represented, but there was no evidence at all of buildings. Where there was much evidence for conditions beyond the depositional basins, grazing land was suggested. The potential for further study of plant and invertebrate assemblages is quite large—and the material represents a rare opportunity to study environment and activity in the immediate environs of York during the prehistoric and Roman periods, and perhaps later.

Only small quantities of hand-collected shell were recovered from four contexts. Almost all of the hand-collected shell was of oyster. The small quantity of remains recovered, and the fact that most derive from unstratified/modern contexts, renders the assemblage of no value.

Very little vertebrate material was recovered from this evaluation despite the large number of trenches excavated. However, Trenches 33, 35, 36 and 39 showed some potential for the preservation of bone, with material from Trench 33 being well-preserved, albeit somewhat fragile. Horse teeth from a possible Iron Age/Roman deposit from Trench 42 (Context 42015) are almost certainly from one individual and may represent a ritual deposit. The assemblages from each trench were small, and provided little interpretative information, although some of material inevitably represents domestic occupation debris.

Further excavation of this site should allow for the sampling and assessment of deposits with significant bioarchaeological potential, especially as many of the more productive samples considered here were from areas identified as being of archaeological interest (particularly in Trenches 33-39 and Trenches 55-60). The current vertebrate remains do not warrant further consideration but there is every likelihood that a larger more valuable assemblage would be recovered by additional excavation, again, particularly in the locality of Trenches 33-39.

11.2 Introduction

Fifty-eight bulk sediment samples ('GBA'/'BS' *sensu* Dobney *et al*. 1992) were submitted to Palaeoecology Research Services Limited (PRS), County Durham, for an evaluation of their bioarchaeological potential.

11.3 Methods

11.3.1 Sediment samples

The sediment samples were inspected and their lithologies were recorded, using a standard *pro forma*. For twenty-one of the samples, a sub-sample was disaggregated in water and sieved to 300 microns then subjected to either paraffin flotation or washover (or in some cases both), broadly using the techniques of Kenward *et al*. (1980; 1986). Flots were stored in alcohol.

Plant remains (and the general nature of the flots, washovers and wet residues) were recorded briefly by 'scanning', identifiable plant taxa and other components being listed directly to a PC using *Paradox* software. Notes on the quantity and quality of preservation were made for each fraction.

Insects in the flots were recorded using 'assessment recording' *sensu* Kenward (1992), creating a list of the taxa observed during rapid inspection of the flot, with a semi-quantitative estimate of abundance, and a subjective record of the main ecological groups. A record of the preservational condition of the remains was made using scales given by Kenward and Large (1998). This scheme provides scales for chemical erosion and fragmentation (0.5-5.5, the higher figure representing the greatest degree of damage), and colour change (0-4), in each case giving a range and a value for the position and strength of the mode (Kenward and Large 1998, tables 2, 3 and 5-7).

Where the residues were primarily mineral in nature they were dried, weighed and the components recorded in brief.

11.3.2 Hand-collected shell

A small quantity of hand-collected shell from four contexts was submitted.

Brief notes were made on the preservational condition of the hand-collected shell and the remains identified to species where possible. For oyster (*Ostrea edulis* L.) shell additional notes were made regarding: numbers of left and right valves; evidence of having being opened using a knife or similar implement; measurability of the valves (though measurements were not taken as part of this evaluation); damage from other marine biota (polychaet worms and dog whelks); encrustation by barnacles. Preservation was recorded subjectively on two four-point scales for erosion and fragmentation as: 0 – none; 1 – slight; 2 – moderate; 3 – severe.

11.3.3 Vertebrate remains

For the hand-collected vertebrate remains that were recorded, data were entered directly into a series of tables using a purpose-built input system and *Paradox* software. Records were made concerning the state of preservation, colour of the fragments, and the appearance of broken surfaces ('angularity'). Other information, such as fragment size, dog gnawing, burning, butchery and fresh breaks, was noted, where applicable.

Fragments were identified to species or species group using the PRS modern comparative reference collection. The bones which could not be identified to species were described as the 'unidentified' fraction. Within this fraction fragments were grouped into a number of categories: large mammal (assumed to be cattle, horse or large cervid), medium-sized mammal (assumed to be caprovid, pig or small cervid), and totally unidentifiable. The latter groups are represented in Table 10 by the category labelled 'Unidentified'.

11.4 Results

The descriptions of each of the sediment samples and records of the dried residues are presented in Table 7.

For the deposits with evaluation sub-samples, the results are presented in context number order by trench. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining volume of unprocessed sediment follows (in round brackets) after the sample number.

11.4.1 Trench 11

Context 11010 [post-medieval – pond back fill]. Sample 29/T (3 kg sieved to 300 microns with paraffin flotation and washover; approximately 6 litres of unprocessed sediment remain).

The rather small washover of about 200 ml consisted of herbaceous detritus and a little sand. It was rich in well-preserved fruits of opposite-leaved pondweed (*Groenlandia densa* (L.) Fourr.) and oogonia of the freshwater green algae in Characeae, as well as in carpels of water-plantain and fruits of bur-reed (*Sparganium*), the last so well preserved that remains of the outer parts of the achenes were present. As in one of the other samples, some suspiciously modern-looking cereal glumes were observed. The aquatic taxa are consistent with deposition in a pond, into which a very little charred material (charcoal and charred herbaceous detritus) also found its way.

The flot was large, mainly composed of rootlets, but moderately rich in invertebrate remains. Preservation was good to average, though some remains were very fragmented (E 1.5-3.5, mode 2.5 weak; F 1.5-5.0, mode 2.5 weak, distinctly skewed towards more fragmented and with numerous unidentifiable scraps of cuticle). Water beetles and other aquatics were numerous and diverse (there were 'many' ostracods and 'several' Corixidae sp. and *Limnebius* sp.); this pond probably held more or less permanent water. One scrap of cuticle may have been of the great silver water beetle *Hydrophilus piceus*

(Linnaeus), and if it can be confirmed it will be a notable record from this area and period. Terrestrial fauna was somewhat limited, with some plant feeders and species found in litter and other decaying matter, all of which may have lived by the water's edge. Dung beetles were notable absentees. This material would be worthy of recording in order to contribute to reconstruction of the present site, and for future synthesis. It would be desirable to process a further subsample, perhaps with great care in the hope of reducing the fragmentation of fossils, in order to enhance the evidence for terrestrial conditions.

A small snail assemblage was sorted from the dried residue. All of the snails recorded were freshwater taxa, with most (around twelve individuals) being the pond snail *Lymnaea truncatula* (Müller). Other species present included a single *Planorbis planorbis* (L.), a few small succineids (probably *Succinea pfeifferi* (Rossmässler)) and a few *Pisidium* sp. bivalves. These remains are entirely consistent with the plant and other invertebrates, indicating a body of still water, with weed and established waterside vegetation.

11.4.2 Trench 13

Context 13015 [Iron Age/early Roman – ditch backfill]. Sample 27/T (3 kg sieved to 300 microns with paraffin flotation and washover; approximately 4 litres of unprocessed sediment remain).

The rather large washover of about 400 ml consisted of woody detritus; wood and twigs (both to 20 mm), the former perhaps largely from fairly small stems, and all rather strongly decayed. Uncharred seeds and fruits were rather sparse but well preserved and were mostly weeds (only stinging nettle, *Urtica dioica* L., was present in more than trace amounts).

The flot was large and consisted primarily of fibrous plant remains, making sorting for invertebrates very time-consuming. Insects were not numerous, and there were few other invertebrates; preservation was generally quite good, however (E 1.5-3.5, mode 2.0 weak; F 2.0-3.5, mode 2.5 weak). Aquatics were the most conspicuous ecological group, these and waterside taxa contributing more than half of the recorded fossils. There were 'several' *Ochthebius minimus* (Fabricius), and a range of other water beetles, all tolerant of still conditions and a restricted aquatic flora, and able to exist in seasonal water. Terrestrial fauna was limited, and may all have originated at the margin of water. There was a single dung beetle (*Aphodius* sp.), insufficient evidence to indicate grazing. This material was borderline for further investigation, but probably worth recording (with an additional subsample to provide greater numbers) to add data in characterising the site as a whole and for landscape-scale synthesis.

11.4.3 Trench 14

Context 14005 [?prehistoric – ditch backfill]. Sample 35/T (3 kg sieved to 300 microns with paraffin flotation; approximately 5 litres of unprocessed sediment remain).

This subsample yielded a very small residue of about 150 ml, of which about 50 ml was woody debris, mainly very decayed wood (to 10 mm in maximum dimension) and bark (to 20 mm), the remainder being sand and gravel (to 25 mm). Fruits and seeds were moderately common and mostly quite well preserved, the more frequent being water-plantain (*Alisma*), water-dropwort (*Oenanthe*) and water-crowfoot (*Ranunculus* Subgenus *Batrachium*), together indicating deposition in still or gently flowing water. The other remains were either consistent with this or represented plants likely to have been growing nearby in a hedge, woodland or scrub. A few fragments of charcoal (to 10 mm) perhaps indicated that some debris from occupation was reaching the deposit as it formed.

The flot, of modest size, consisted primarily of invertebrate remains, with some fragments of herbaceous plants. Insects were quite well preserved chemically, though often highly fragmented (E 1.5-3.0, mode 2.0 weak; F 2.0-5.0, mode 3.0 weak). There were immense numbers of *Daphnia* ephippia (water flea resting eggs) and resting bodies of the bryozoan *Lophopus crystallinus* (Pallas), as well as a range of water beetles, to attest to aquatic deposition, probably in essentially permanent and fairly clean water. There were not many terrestrial insects, but those present strongly suggested grazing land; 'several' each of an *Aphodius* species (dung beetles) and of *Phyllopertha horticola* (Linnaeus), the latter typical of poor, often rather acid, grazing land. It would be useful to make a full record of the insects from this deposit, preferably using a further subsample processed with great care, in the hope of avoiding fragmentation.

Context 14006 [?prehistoric – peat in valley]. Sample 33/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

The small washover of about 30 ml was mainly extremely decayed wood (to 10 mm) and extremely decayed caddis larva case fragments, with moderate numbers of water-plantain fruits and a few rather decay-resistant woody seeds. A trace of charred material tentatively identified as heather (*Calluna vulgaris* (L.) Hull) root/basal twig may represent debris from the burning of peat or turves; there was also a little wood charcoal (to 10 mm) and small fragments of cinders and coal, all presumably from occupation (though coal was regularly seen in these deposits in rather rounded clasts that are as likely to have originated in the local glacial drift). That the charcoal was rather eroded and iron-encrusted perhaps points to reworking. This subsample would probably have been worthy of paraffin flotation. It gave the impression of a sediment which had contained good waterlogged material but which had suffered strong decay post-depositionally.

11.4.4 Trench 24

Context 24010 [?modern – charcoal filled pit]. Sample 38/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain).

The modest-sized washover of charred material of about 75 ml was mainly wood charcoal (including willow/poplar/aspen, *Salix/Populus*, to 20 mm) with some modern roots and a few charred fruits of goosegrass, *Galium aparine* L.

11.4.5 Trench 25

Context 25013 [Iron Age – pit backfill]. Sample 38/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

The tiny washover (5 ml) was mostly fine charcoal (there were a few large pieces to 15 mm) and modern plant detritus (rootlets, seedling and an occasional seed).

11.4.6 Trench 33

Context 33005 [contained Roman coins]. Sample 16/T (9 kg sieved to 300 microns with washover; no unprocessed sediment remains).

This sample was processed in order to look for remains that might represent a container for a small number of Roman coins that were recovered from the deposit. No such evidence was discovered. The washover was rich in uncharred plant remains and contained fragments of insect cuticle, however. Any further study of the biological remains from this site should revisit this sample.

Context 33008 [?Roman – ditch backfill]. Sample 26/T (3 kg sieved to 300 microns with paraffin flotation; approximately 5 litres of unprocessed sediment remain).

There was a moderate-sized residue of about 300 ml, of which about 50 ml was sand and a little gravel (to 15 mm), the organics being rather decayed wood with bark and much peaty undisaggregated sediment. Fruits and seeds, preserved by waterlogging, were mainly elder (*Sambucus nigra* L.) and blackberry (*Rubus fruticosus* agg.) (of which many more were present in the flot), with very few other taxa. There was a trace of charcoal (to 5 mm).

Fragments of insects were numerous in the large flot, but their condition was generally poor, often very poor (E 3.5-5.5, mode 4.0 weak; F 3.5-5.5, mode 4.5 weak). There were very small numbers of cladocerans (water fleas), but most of the remains were highly comminuted scraps of cuticle of a narrow range of beetles, among which the chafer *Phyllopertha horticola* appeared to be the only species which was represented by more than one individual. Other taxa noted included a click beetle (Elateridae), a weevil, and the wood borer *Grynobius planus* (Fabricius). It was not clear whether the range of beetles was initially so narrow, or whether the low diversity was only apparent and a result of the great difficulty of identifying such tiny scraps. The deposit probably formed in an open grassland landscape. It would be worth recording this material, perhaps semi-quantitatively, to provide data for synthesis.

It is possible that this deposit included droppings from roosting birds.

Context 33027 [?Roman – ditch backfill]. Sample 21/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

The very small washover, of about 15 ml, comprised moderately frequent elder seeds and very little else. There were traces of charred cereal grains (not identifiable beyond this), charcoal (to 2 mm) and a little very decayed wood.

Context 33033 [?Iron Age – pond/spring head backfill]. Sample 25/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

The very small washover (of barely 30 ml) of fine organics was discovered to consist almost entirely of elder seeds and a little undisaggregated sediment, with a trace of charcoal (to 5 mm) and a little sand. The small flot yielded only traces of well decayed cuticle (E 5.5).

11.4.7 Trench 36

Context 36008 [2nd/3rd century AD – flue backfill and demolition of hypocaust]. Sample 17/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain).

The very small washover of about 20 ml comprised charred material and modern roots. The former was wood charcoal which included oak (*Quercus*) and unidentified diffuse-porous material (both to 10 mm). The few weed seeds present were probably all of recent origin. There was a trace of charred ?heather root/twig material, perhaps from peat or turves.

Context 36033 [late 3rd/4th century AD – boundary ditch backfill]. Sample 23/T (3 kg sieved to 300 microns with washover; approximately 4 litres of unprocessed sediment remain).

There was a small washover of about 15 ml of charred material and modern roots. The former included some cereal grains—oats (*Avena*), barley (*Hordeum*), and wheat (*Triticum*)—as well as ?heather root/twig and sedge (*Carex*) nutlets (suggesting the presence of material derived from burnt peat or turves). A trace of tentatively identified barley rachis (ear stalk) was also seen. The charcoal (to 5 mm) included oak and ash (*Fraxinus*).

11.4.8 Trench 39

Context 39009 [?Anglian – pit backfill]. Sample 4/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain).

This subsample yielded a very small washover of about 15 ml of charred material (mainly poorly preserved grain) and some modern roots. The grain comprised barley with some wheat and perhaps even rye (*Secale cereale* L.). A trace of charred ?heather root/twig was noted from the finer fraction, in which there were some spelt glume-bases and spikelet-forks (perhaps arguing for a date rather earlier than Anglian) and one fragment which seemed to be barley rachis; a few of the barley grains had evidently begun to sprout before being charred.

11.4.9 Trench 47

Context 47002 [no information]. Sample 11/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain).

There was a tiny washover (of only a few ml) of sand grains, with a few small fragments of coal and cinder, a single charred wheat grain and some uncharred modern plant detritus.

11.4.10 Trench 56

Context 56011 [2nd/3rd century AD – pit backfill]. Sample 42/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

There was a small washover, of about 25 ml, of charred material, mainly wood charcoal and moderately well preserved cereal grains, with a little unidentified bone. The grain included moderate numbers of wheat caryopses and there were also traces of chaff; glume-bases of spelt (*Triticum spelta* L.) and spikelet forms which were perhaps emmer (*Triticum dicoccum* Schrank). The rather frequent charred nutlets of sedges and sheep' sorrel (*Rumex acetosella* agg.) might well have arrived in turves and there was some supporting evidence for this suggestion from the presence of charred ?heather root/twig and root/rhizome material, as well as some of the other plants represented by fruits or seeds.

Context 56018 [?Iron Age but perhaps more likely late Roman – pit backfill]. Sample 41/T (3 kg sieved to 300 microns with washover; approximately 5 litres of unprocessed sediment remain).

The subsample gave a tiny washover (10 ml) of approximately half modern plant detritus and half fragments of coal and charcoal, There was also a little cinder, a few charred seeds and a single very poorly preserved charred grain.

11.4.11 Trench 60

Context 60011 [unknown date – pond/spring head backfill]. Sample 43/T (3 kg sieved to 300 microns with washover; approximately 3 litres of unprocessed sediment remain).

This sub-sample produced a rather large residue of about 350 ml of which about 150 ml formed a washover, the rest being sand and gravel (to 40 mm, amongst which was a fragment of tentatively identified fire-cracked pebble). The organic component consisted of charcoal (15 mm) and very decayed wood (25 mm), with some charred ?heather root, sedge nutlets and rhizome fragments (all pointing to the presence of material from charred peat/turves—indeed, there were a few fragments of charred material up to 5 mm that were thought perhaps to be peat itself). There were also some remains of cereals; one part-charred cereal grain and some fully charred material (some barley, large and very well preserved, and a little wheat, less well preserved). Two fragments of chaff (lemma/glume) were uncharred and might perhaps be recent. A charred spikelet fork appeared to be emmer but needs closer inspection. An unusual find was a single charred

ash seed, and for the most part the well preserved waterlogged fruits and seeds were from woody plants (elder, alder–*Alnus*) and annual weeds (some perhaps from cultivated land). There was also some wood charcoal (to 15 mm).

The flot was fairly small, with woody and herbaceous plant fragments and seeds. There were modest numbers of invertebrate remains, principally beetles and mites. These were very variably preserved (E 2.0-4.0, mode 2.5 weak; F 1.5-4.5, mode 3.0, weak). Aquatics were present in small numbers, but sufficient to suggest at least temporary water. Terrestrial fauna included one dung beetle and a few plant feeders and litter-dwellers. A larger, additional, sub-sample could probably provide sufficient remains for a reconstruction of conditions at the point of deposition and in the immediate surroundings.

11.4.12 Trench 103

Context 103020 [Iron Age – ditch backfill (primary)]. Sample 51/T (3 kg sieved to 300 microns with paraffin flotation; approximately 16 litres of unprocessed sediment remain).

There was a moderately large residue of about 550 ml of woody debris within which 75 ml was clean quartz sand with a little gravel. The woody material was mainly small twiggy fragments, probably mostly alder (of which fruits and female cone axes were also quite frequent). Other woody taxa included hawthorn (*Crataegus monogyna* Jacq.: well-preserved berries and pyrenes) and blackthorn (*Prunus spinosa* L.: thorns), and with these probable hedgerow shrubs, herbs such as rough chervil (*Chaerophyllum temulentum* L.) and upright hedge parsley (*Torilis japonica* (Houtt.) DC.) very likely to be found growing in their shelter. A very wide range of other taxa was present—some of them weeds, as well as aquatics (such as duckweed, *Lemna*, and water-crowfoot) likely to be growing in the ditch. A trace of charcoal points to the inclusion of some occupation debris, as do uncharred capsules of heather and charred remains tentatively identified as heather twig and root/basal twig (from peat or turves).

The flot was substantial, consisting mainly of fibrous plant debris, but with numerous invertebrate remains too. The latter were variably preserved, though often in quite good condition (E 1.5-3.0, mode 2.0 weak; F 2.0-5.0, mode 3.0 and 5.0, weak). Much the most abundant invertebrate remains were resting eggs (ephippia) of *Daphnia* (water fleas), of which there were of the order of 10^3. There were a few ephippia of a second cladoceran, and modest numbers of water beetles; together these remains suggest at least fairly permanent water, perhaps drying or greatly reduced in summer. There were a few waterside specialists (e.g. *Notaris acridulus* (Linnaeus)). Terrestrial species were fairly abundant, indicating herbaceous vegetation and plant litter, with ‘several’ *Aphodius* dung beetles of two or more species; the surroundings may have been grazed. This sediment deserves full analysis for insect remains in order to reconstruct aquatics and terrestrial conditions, to contribute towards an understanding of land use in this area and for future synthesis.

11.4.13 Trench 106

Context 106016 [probably Iron Age – ditch backfill]. Sample 60/T (3 kg sieved to 300 microns with paraffin flotation; approximately 6 litres of unprocessed sediment remain).

The moderately large residue of about 500 ml (of which about 100 ml was clean quartz sand) included abundant rather 'chunky' woody debris, including wood fragments (20 mm) and twigs (30 mm), with some bark (20 mm); the wood was rather decayed. A wide range of other plant remains was present, and preservation (mainly by waterlogging) was generally good or very good. A distinctive component of plants from peat bog habitats surely represent debris from imported peat: two well-preserved seeds of bog rosemary (*Andromeda polifolia* L.), a sclerenchyma spindle of cotton-grass (*Eriophorum vaginatum* L.), some fragments of the moss *Aulacomnium palustre* (Hedw.) Schwaegr., and probably also the remains of heather (flowers and twig fragments). Some charred remains thought to be heather twig and root/twig, as well as some fragments thought to be charred moor humus or peat, and a few fragments which may be uncharred fibrous peat, strengthen the argument for the presence of peat, presumably brought to the area as fuel. Other remains included a distinctive 'drying mud' group of plants typically found at the edges of ponds or in intermittently wet ditches, and a probable 'hedgerow' component, though the presence of various plant parts of alder presumably points to woody vegetation on poorly drained soils close to the ditch. Some other remains may have arrived in heathland/grassland turves rather than peat. Overall, a rather large assemblage of well-preserved plant remains was recovered.

The large flot, primarily woody fragments, but with some herbaceous debris and numerous seeds, was rich in invertebrate remains. Invertebrates were variably preserved, but often in quite good condition (E 2.0-4.0, mode 2.5 weak; F 1.5-3.5, mode 2.5 weak). The insect assemblage was notable for its apparently very high diversity, with numerous species represented by small numbers of individuals. Deposition was in a body of water, perhaps permanent and with aquatic vegetation. Several waterside species were present. Terrestrial insects were abundant, representing a range of habitats including herbaceous vegetation (with some nettle-feeders) and a range of decaying matter from fairly dry litter to dung. There were two woodworm beetles, *Anobium* sp., perhaps from natural dead wood or from (for example) fence posts. Dung beetles were fairly abundant and several species of *Aphodius* were present. There were also two *Phyllopertha horticola*. Overall the terrestrial insects gave a subjective indication of grazing land, an impression which should be tested by further detailed analysis.

11.4.14 Trench 107

Context 107016 [probably Iron Age – ditch/gully backfill]. Sample 64/T (3 kg sieved to 300 microns with washover; approximately 15 litres of unprocessed sediment remain).

There was a tiny washover (5 ml) of modern rootlets, with traces of fine charcoal and cinder and an occasional larger fragment of charcoal (to 10 mm).

11.4.15 Trench 115

Context 115002 [?prehistoric – ditch backfill]. Sample 69/T (3 kg sieved to 300 microns with washover; approximately 6 litres of unprocessed sediment remain).

The small washover (of about 10 ml) consisted of modern roots and a little charred material; charcoal (to 10 mm) that was rather iron-encrusted—including material identified as oak (*Quercus*) and alder/hazel (*Alnus/Corylus*). There were also a few fragments of charred rhizome (to 3 mm), presumably from burnt turves.

11.4.16 Hand-collected shell

Three contexts (two modern/unstratified, Contexts 11000 and 33000, 11011 an early 19th century levelling deposit and 106020 a late Iron Age/early Roman trackway through an Iron Age enclosure entrance) each gave small amounts (only Context 11000 yielded more than a few grammes) of oyster shell. The remains from Contexts 11011, 33000 and 106020 were poorly preserved, whereas those from Context 11000 were in rather better condition. Five (possibly six) of the valves were measurable. Evidence of the oysters having been opened using a knife or similar implement (as shown by 'V'- or 'W'-shaped notches on the shell margins) was noted on one (perhaps two) of the valves. There was no evidence of damage to the valves (e.g. polychaet worm burrows, dog whelk holes), and little of encrustation (e.g. by barnacles), by other marine biota. Just under one third of the valves showed some fresh breakage presumably caused during excavation.

A fourth context (121004, described as a natural glacial deposit) contained the remains of a single *Helix aspersa* Müller.

Oyster shell from 106020?

Summary information for the hand-collected shell assemblage is presented as Table 8.

11.4.17 Hand-collected vertebrate remains

In total, 183 fragments of bone were recovered from 27 deposits representing 11 of the excavated trenches. Material was recovered from four other trenches (16, 40, 120, 121) but this was only briefly scanned being either of modern date or unstratified. Most of the bones were from deposits of prehistoric (Iron Age or ?Iron Age) or Roman date, with just a few dating to the late Roman/early Anglian or the post-medieval periods. A range of context types were encountered, but most commonly the bone was recovered from gully or ditch fills. A detailed list of the contexts which produced bone can be found in Table 9.

Very few fragments were recovered from Trenches 11, 26, 38, 56 and 125 (Table 10). Those from Trenches 11, 26 and 125 were post-medieval in date and, generally, unidentified to species. These fragments were of reasonable preservation. Vertebrate remains from Trenches 38 and 56 were mostly of Roman (2nd/3rd century) date and included bones of cattle and caprovid. Material from both trenches was described as being of variable preservation, including both well preserved and poorly preserved fragments. Trench 107 produced 14 fragments; many were burnt and only one (a pig tooth) identified to species.

Trench 33 produced one of the largest concentrations of bones. Seven deposits, mostly of Iron Age or Roman date (late 1st/early 2nd or 2nd century or 2nd/3rd century), produced 29 fragments, of which 17 were 'unidentified'. Preservation was slightly variable but, in

general, the bones were well preserved, although some were a little brittle. Colour of the fragments varied from dark brown to gingery brown in colour. Caprovid and cattle remains were the most prevalent species, with single fragments of horse, dog and red deer (Contexts 33040, 33007 and 33003 respectively) also identified.

Two deposits from Trench 35 produced 15 fragments of very poorly preserved bone; the surface of the bones had been almost completely eroded. Most fragments represented the part skeleton of a cow (Context 35008), with only skeletal elements from the fore limb, a tooth and some mandible fragments being present. The deposit from which these remains were recovered possibly dated to the Iron Age.

Forty fragments of bone were recovered from five deposits from Trench 36. Four of the five contexts were of Roman date ($2^{nd}/3^{rd}$ century and $3^{rd}/4^{th}$ century). Preservation of the material was recorded as 'fair', and colour as fawn. Fresh breakage was extensive and some bones were a little fragile. Cow, pig and caprovid remains were recorded; however, most fragments could not be identified to species but represented large mammals and included shaft, rib and vertebra fragments.

Vertebrate remains from Trench 39 were very poorly preserved, with much surface erosion. Most of the bones, 45 of the 47 recovered, came from Context 39017. The excavators identified an animal burial from this deposit, but most of the skeleton was apparently left *in situ*. The bones submitted for evaluation were too extensively fragmented to be identified to species but appeared to represent a large mammal. Whether all the fragments belonged to one individual could not be determined from these remains.

A single ditch fill of possible Iron Age/Roman date from Trench 42 produced 22 horse fragments, mainly upper molars and premolars. Two incisors were also recovered suggesting an animal of about five years old. Preservation of the teeth was fairly good, but clearly they had survived, whilst the bone of the skull had not.

11.5 Discussion and statement of potential

The quantity and quality of preservation of macrofossil plant remains varied widely through this series of samples. At best there was well-preserved material largely reflecting the kind of context inferred on stratigraphic grounds (pond fills, ditch fills, and so on) with only a very small background component thought to derive from human occupation and a few weeds pointing to possible disturbance of the environment. Many of these 'waterlogged' samples did however produce both charred and uncharred material thought to represent imported heathland turves or peat—neither of which seems likely to have formed on the slopes of the moraine (though was quite possibly present in extensive areas on the undrained land at the foot of the slope, long since lost to drainage and agriculture, if not completely removed by paring or cutting first). Another group of samples yielded only charred remains but in some cases there were small concentrations of cereals and, amongst these, the wheat chaff needed for identification of the grains of this genus. Material from turves or peat was also present in these 'charred' samples, and it may be that this raw material was used in, for example, the firing of drying kilns, through the use of which charring of the cereals also took place.

Useful numbers of invertebrate (particularly insect) remains were present in most of the deposits for which extraction had been undertaken, and these assemblages have the potential to provide information about the depositional basins and local ecology and land used, as well as providing data for wider, landscape-level synthesis. Preservation was variable in many cases (suggested by Kenward and Hall, in press, to be a characteristic of decay during deposition). Fragmentation was often considerable, or even extreme, placing a limit on identification for some of the assemblages. However, even the small or badly preserved groups showed potential to contribute towards synthesis, even when context reconstruction would be limited.

The insects suggested a human-dominated environment at all the periods represented, but there was no evidence at all of buildings; no occupation-site synanthrope communities were detected. Where there was much evidence for conditions beyond the depositional basins, grazing land was suggested. A ditch encountered in Trenches 103 and 106 was thought by the excavator to perhaps have had a livestock control function. There was certainly nothing in the insect assemblages recovered from Samples 51 and 60 (Contexts 103020 and 106016, respectively) to contradict this, though there were probably too few dung beetles to suggest that livestock was concentrated (e.g. for drinking or shelter).

The potential for further study of plant and invertebrate assemblages is quite large—and (if secure dating can be achieved) the material represents a rare opportunity to study environment and activity in the immediate environs of York during the prehistoric and Roman periods, if not somewhat later. We know next to nothing about this from the existing (bio)archaeological record.

Almost all of the hand-collected shell was of oyster. The small quantity of remains recovered, and the fact that most derive from unstratified/modern contexts, renders the assemblage of no value. However, the presence of an oyster valve in Context 106020, assuming its integrity to be secure, would indicate that the later of the supposed dates for this deposit is perhaps more likely (i.e. early Roman rather than late Iron Age).

Very little vertebrate material was recovered from this evaluation despite the large number of trenches (115) excavated. However, Trenches 33, 35, 36 and 39 showed some potential for the preservation of bone, with material from Trench 33 being well preserved, albeit somewhat fragile.

The current assemblages from each trench are small, and can provide little interpretative information, although some of material inevitably represents domestic, occupation debris. Horse teeth from a possible Iron Age/Roman deposit from Trench 42 (Context 42015) are almost certainly from one individual and are likely to have been deposited as a complete skull, with the bone subsequently decaying but the teeth remaining (enamel generally survives better where unfavourable conditions for bone survival prevail). The presence of isolated skulls, particularly horses, has been recorded on other sites of Iron Age and Romano-British date and they are sometimes interpreted as deliberate depositions of a ritual nature. One such example was noted from Easingwold, North Yorkshire (Carrott *et al*. 1993) where associated isolated horse teeth were recovered from within roundhouse

ditches. These were interpreted as possibly indicating the original presence of skulls, perhaps ritually placed within the ditches or buildings (Dobney 2001).

Although not fully excavated, several animal skeletons were encountered in deposits within Trenches 34 and 39. A common feature of many Iron Age and Romano-British sites is the occurrence of articulated skeletons, animal skulls and limbs which appear to have been deliberately placed usually within ditches and pits. Their location and association with other artefacts has often resulted in their interpretation as ritual or special deposits (Grant 1984; 2002), although there is some debate over this interpretation (Wilson 1992). These types of 'special' deposits have been noted elsewhere in the region, e.g. from Iron Age and Romano-British deposits at Shiptonthorpe (Mainland 1988), Hayton and Goodmanham (Hall *et al.* 2003), East Riding of Yorkshire. The latter all produced a range of complete and semi-articulated animal skeletons, mainly caprovid and cattle, typically young individuals. Similar remains were recovered from Garton Slack (Noddle 1979), whilst recent excavations at Garforth in West Yorkshire (Jaques 2000) revealed skeletons of pig, small dog, goat and raven which were interpreted as being of a ritual nature. This continuation of the occurrence of this sort of deposit from the Iron Age into the Roman period perhaps indicates the survival of long-held 'Celtic traditions' despite the influence of Roman acculturation (Dobney 2001).

11.6 Recommendations

It is certainly worthwhile to consider making further botanical analysis of a selection of the deposits, particularly those showing little or no waterlogged preservation, and using rather larger assemblages, to check on the distribution in space and time of the evidence for peat/turf utilisation (and in the hope of tying this in with evidence for structures in the area).

Further analysis of the insect assemblages, preferably together with material recovered during development (which will surely threaten additional deposits?) is recommended. The use of larger, carefully processed, sub-samples of many of the sediments is desirable in order to enhance reconstruction of local ecology and land use. Plant remains from these samples should also be examined to provide corroborative evidence of environment and explore further the use of materials as well as the nature of the agro-economy at the various periods represented (through the remains of cereals).

Further excavation of this area should allow for the sampling and assessment of deposits with significant bioarchaeological potential, especially as many of the more productive samples considered here were from areas identified as being of archaeological interest (particularly in the vicinity of Trenches 33-39 and 55 to 60).

No further investigation of the hand-collected shell is warranted.

In spite of the poor preservation and small assemblage size, bone assemblages from this area of York, and of Iron Age/Romano-British date, are rare and our understanding of the rural outskirts of the city is minimal during this period. The current assemblage does not warrant further consideration but there is every likelihood that a larger more

interpretative assemblage would be recovered should additional excavation be undertaken, particularly in the locality of Trenches 33-39.

11.7 Retention and disposal

All of the current material, together with the remains extracted from the processed sediment subsamples, should be retained for the present.

11.8 Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

CN	SN	SEDIMENT DESCRIPTION	WT KG.	RES.WT.	DRY RESIDUE DESCRIPTION
9003	32	Just moist, light to mid grey-brown to mid grey, crumbly to unconsolidated, silty, fine sand. Stones (2 to 6 mm) were present.	NFA		
9005	31	Moist, light to mid grey-brown, crumbly to unconsolidated, slightly silty, fine sand. No obvious inclusions.	NFA		
9007	30	Moist, light to mid grey, crumbly to unconsolidated, slightly clay, silty, fine sand. Stones (2 to 6 mm were present.	NFA		
11010	29	Moist, mid brown to mid to dark grey brown (some patches of light brown and light grey), crumbly (working soft), humic, slightly sandy slightly clay silt. Black sulphide staining was noted internally.	3	0.46	Mostly sand, with some stones (to 40 mm) and traces of coal (1 g, to 10 mm), seeds (<<1 g, 10 or so sorted from residue) and freshwater snails (see text). A single amphibian limb bone was recovered from this sample.
13015	27	Moist, mix of light to mid blue-grey sticky clay and light to mid brown sand. Wood/woody root was present.	3	0.09	Mostly sand, with some stones (to 35 mm) and flecks of ?charcoal.
13018	28	Moist, light grey-brown to mid grey-brown, crumbly to unconsolidated (working soft), slightly sandy slightly clay silt. Stones (6 to 60 mm), charcoal and ?wood were present.	NFA		

14005	35	Just moist, mid to dark brown, crumbly (working soft), humic, slightly sandy slightly clay silt, with patches of light grey and yellow-brown, slightly silty clay. Stones (2 to 6 mm and 20 to 60 mm), ?seeds and plant fragments were present.	3	-	Organic residue kept wet (see text).
14006	33	Just moist, dark grey-brown to dark brown, brittle to crumbly (working soft), very slightly sandy slightly clay silt, with some patches of mid orange-brown clay silt. Stones (20 to 60 mm), ?charcoal flecks and very rotted ?wood fragments were present.	3	0.08	Mostly sand, with a few stones (to 30 mm) and traces of charcoal (<<1 g, to 5 mm).
14012	34	Varicoloured, light grey to mid grey-brown (and shades in between), brittle to crumbly (working soft), silty clay, with some fine herbaceous detritus. Modern rootlets were present.	NFA		
24010 /11	38	Moist, mid grey-brown to dark grey, crumbly to unconsolidated, moderately stony, slightly clay sand. Darker grey areas perhaps more clay with ?ash. Stones (6 to 20 mm) were common and ?rotted charcoal and modern rootlets were present.	3	1.10	Stones (to 50 mm) and sand.
25013	37	Moist, mid brown to mid grey-brown, crumbly, slightly silty sand. Rotted charcoal was present.	3	0.83	Sand and stones (to 45 mm), with a little charcoal (<1 g, to 8 mm).
26004		Mid to dark grey-brown, crumbly to unconsolidated. Stones (20 to 60 mm) were common.	NFA		
31019	10	Light grey, crumbly, working soft, slightly clay, sandy silt, with some ?very decayed organic material (orange in colour).	NFA		
32003	13	Just moist, light to mid grey to mid orange (mottled on a mm-scale), crumbly to unconsolidated, slightly clay, sandy silt.	NFA		
32012	14	More or less dry, mid to dark grey (with some light grey-brown patches), crumbly to unconsolidated, silty fine sand. No obvious inclusions.	NFA		
33005	16	Moist, mid grey-brown to mid to	9	0.76	Mostly sand, with

		dark grey, brittle to crumbly (working soft), slightly sandy silt, with some light grey-brown sand in patches and some lumps of ?peat (detritus peat). Wood or woody root was present.			a few small stones.
33008	26	Moist, dark grey-brown to very dark grey, crumbly (working more or less soft), humic, sandy silt. Stones (2 to 20 mm), pot, twigs or ?woody root and large mammal bone were present.	3	-	Organic residue kept wet (see text).
33027	21	Moist, mid grey-brown, crumbly (working soft), slightly silty, clay sand. Occasional small lumps of light orange-brown ?clay (to 5mm). Stones (6 to 20 mm and >60 mm) were present.	3	0.61	Sand and stones (to 65 mm). This sample produced 22 small fragments of bone, most of which were well preserved. The larger fragments (to 30 mm) represented medium-sized mammals, whilst some of the smaller fragments included vole and mouse teeth and several amphibian fragments such as vertebra and pelvis.
33033	25	Just moist, mid to dark grey-brown to dark grey (some areas of light to mid grey-brown), crumbly (working soft), humic, sandy silt. Stones (2 to 60 mm) were present.	3	0.40	Sand and stones (to 40 mm). Two fragments of bone were recovered, one of which was a vole tooth.
35009	8	More or less dry, crumbly, slightly sandy silt (possibly ashy), with some ?humic flecks and ?charcoal present.	NFA		
36008	17	Just moist, mid to dark grey-brown, crumbly (working more or less soft), slightly clay, silty sand. Stones (6 to 60 mm), rotted mortar/plaster, rotted brick/tile and modern rootlets were present.	3	0.38	Sand and stones (to 35 mm), with a little brick/tile (15 g, to 40 mm) and ?metal (23 g, to 30 mm). A single amphibian pelvis fragment was

					recovered from this sample.
36033	23	Just moist, mid brown to mid grey-brown (mottled on a mm-scale), crumbly to unconsolidated, slightly clay, ?ashy, sandy silt, with some small patches of light orange-brown clay. ?Pot and very rotted ?large mammal bone were present.	3	0.36	Sand and stones (to 55 mm), with a little brick/tile (7 g, to 16 mm). Four rather eroded and poorly preserved fragments were noted from this sample.
38003	6	Just moist, mid to dark brown to mid to dark grey-brown, crumbly to unconsolidated, fine silt. Traces of ?charcoal were present.	NFA		
38004	7	More or less dry, mid to dark brown to mid to dark grey-brown, brittle to crumbly, silty sand. Pot present.	NFA		
38005	5	Mid to dark brown (to mid brown in places), fine sandy silt. Stones (20 to 60 mm) and pot were present.	NFA		
39001	1	Light to mid brown to light to mid grey-brown, brittle to crumbly, slightly sandy slightly clay silt. No obvious inclusions.	NFA		
39009	4	Dry, mid brown to mid grey-brown (mottled on a mm-scale), brittle to unconsolidated, ?very ashy, sandy silt. Modern rootlets were present.	3	0.62	Sand and some stones (to 45 mm). This sample produced a poorly preserved sheep/goat incisor a small unidentified scrap of bone.
39017	2	Dry, light to mid grey-brown, unconsolidated to brittle, very stony, slightly clay slightly sandy silt. Stones (2 to 20 mm) were abundant and larger stones (20 to >60 mm) were present.	NFA		
39022	3	Just moist mid brown, unconsolidated, silty fine sand. Stones (2 to 20 mm) were common and larger stones (20 to >60 mm) were present.	NFA		
42015	36	Mid grey-brown, moist and crumbly. Large stones (>60mm) were present.	NFA		
47002	11	Moist, light grey-brown to light to mid red-brown (mottled on a	3	0.72	Mostly sand, with ferrous

		mm- to cm-scale), stiff to crumbly (working plastic), ?slightly silty clay. Some orange/reddish colouration, perhaps from organics or iron salts, was noted. No obvious inclusions.			concretions (to 40 mm) and a few stones.
47003	12	Moist, light to mid grey to light orange (mottled on a mm- to cm-scale), slightly sandy, clay silt to silty clay. Orange component ?baked/heated clay.	NFA		
49015	15	Just moist, light to mid grey to light to mid brown (mottled on a mm-scale), brittle to crumbly, silty sand. Some dark brown humic lumps. No other obvious inclusions.	NFA		
54003	44	Moist, light grey-brown, crumbly (working soft), sandy silt to silty sand. No obvious inclusions.	NFA		
56011	42	Just moist, light to mid brown to mid grey-brown, crumbly to unconsolidated, ?slightly ashy, slightly silty sand. Stones (2 to 60 mm) were common (rounded pebbles).	3	0.65	Mostly stones (to 60 mm), with some sand and a little charcoal (<1 g, to 10 mm). Bone (5 fragments) from this sample was poorly preserved and unidentified.
56018	41	Moist, mid brown to mid grey-brown (mottled on a mm-scale), crumbly to unconsolidated, slightly stony, slightly clay slightly silty sand. Stones (2 to 6 mm) and modern rootlets were present and larger stones (6 to 20 mm) were common.	3	0.76	Sand and stones (to 50 mm).
57011	40	Mid grey-brown, crumbly to unconsolidated. Stones (2 to 20 mm) and modern rootlets were present.	NFA		
60011	43	Moist, light to mid grey to mid to dark grey-brown, crumbly and slightly sticky to layered in places (working soft), ?humic, slightly sandy clay silt. Some clasts of sticky light grey-brown silty clay and ?charcoal or ?ash were present.	3	-	Organic residue kept wet (see text).
74004	61	Moist, light to mid brown to light	NFA		

		to mid grey-brown, crumbly, sand.			
81003	45	Moist, mid grey-brown, crumbly, slightly silty sand.	NFA		
99003	49	Moist, light to mid grey-brown, crumbly, slightly silty sand.	NFA		
102003	50	Moist, light to mid black-grey-brown, crumbly, sand.	NFA		
103004	57	Moist, mid grey-brown to mid grey, crumbly, stony, sand. Stones (6 to 60 mm) were common.	NFA		
103006	54	Moist, mid grey-brown to mid to dark grey, crumbly, slightly silty sand. Modern rootlets and large pebbles (>60 mm) were present.	NFA		
103020	51	Moist, mid to dark brown, brittle to crumbly (working soft), very humic silt to silty amorphous organic. Wood (including bark) and ?modern rootlets were present.	3	-	Organic residue kept wet (see text).
103026	56	Moist, light brown to mid grey-brown to mid grey, crumbly, sand.	NFA		
103029	55	Moist, light to mid brown to mid grey, crumbly, sand.	NFA		
103032	58	Moist, mid grey-brown, crumbly, sand. Large stones (>60 mm) were common and modern rootlets were present.	NFA		
105007	53	Moist, light to mid grey-brown, crumbly (working more or less plastic), sandy silty clay.	NFA		
105009	57	Moist, light to mid grey-brown, crumbly, sand, with a little silt.	NFA		
106016	60	Moist, very dark grey-brown to black (occasional patches of mid grey-brown and lighter internally), crumbly (working soft), humic, slightly clay sandy silt. Vivianite, ?twigs, herbaceous detritus and ?modern rootlets were present.	3	-	Organic residue kept wet (see text).
107010	63	Moist, mid grey-brown, crumbly, sand. Modern seedlings were present.	NFA		
107016	64	Moist, light to mid brown to mid grey-brown, crumbly to unconsolidated, silty sand. Charcoal flecks and modern rootlets were present.	3	0.61	Mostly sand, with some stones (to 10 mm) and a little charcoal (1 g, to 12 mm) and one

					piece of ?daub/?burnt clay (9 g, to 40 mm).
107022	66	Moist, light to mid brown to light to mid grey-brown, crumbly, slightly silty sand.	NFA		
107024	65	Moist, mid to dark grey-brown to mid to dark grey, crumbly, slightly silty sand. Stones (>60 mm) were present.	NFA		
109007	67	Moist, light to mid grey-brown (slight orange cast in places), crumbly (working more or less plastic), slightly silty clay sand to sandy clay.	NFA		
109009	68	Moist, light to mid grey-brown (mottled lighter and darker), crumbly, sand.	NFA		
115002	69	Moist, light to mid orange-grey-brown, brittle to crumbly (working somewhat plastic), clay silt. Modern rootlets were present.	3	0.12	Mostly sand, with a few small stones (to 8 mm).

Table 7: *Sediment and dry residue descriptions.*
Key: CN Context number;SN =Sample number; Wt = Weight of processed subsample in kg—'NFA' - no further action (beyond sediment description); Res Wt = Weight of dry residue in kg.

	Oyster valves												
Cn	**left**	**right**	**in**	**meas**	**E**	**f**	**kn**	**worm**	**barn**	**dog**	**fr**	**other taxa**	**wt**
11000	6	8	0	5/?6	2	1	1/?2	0	1	0	3		322
11011	0	1	0	0	2	2	0	0	0	0	1		25
33000	0	1	0	0	3	3	0	0	0	0	1		16
106020	1	0	0	0	3	2	0	0	0	0	0		14
121004	0	0	0	-	-	-	-	-	-	-	-	1 x *Helix aspersa* Müller	5
Total	**6**	**10**	**0**	**5/?6**			**1/?2**	**0**	**1**	**0**	**5**		**368**

Table 8: *Summary information - hand-collected shell by context. A '?' before numbers indicates possible numbers (e.g. '2/?3 = definitely 2, possibly 3). Key: 'Cn' = Context number; 'left' = number of left (or lower) valves; 'right' = number of right (or upper) valves; 'in' = number of valves of indeterminate side; 'meas' = estimated number of valves intact enough to be measured; 'e' = average erosion score for valves; 'f' = average fragmentation score for valves; 'kn' = number of valves showing damage characteristic of the oyster having been opened using a knife or similar implement; 'worm' = number of valves showing damage by polychaet worms; 'barn' = number of valves with barnacles; 'dog' = number of valves showing damage from dog whelk boring; 'fr' = number of valves showing fresh breakage; 'wt' = total weight of shell in grammes.*

CONTEXT	DATE	TOTAL FRAGMENTS	CONTEXT TYPE
11011	E19thC	1	Levelling material over pond
16000	modern		Unstratified finds from Trench 16
26004	18thC	1	Backfill of wide linear - unknown origin.
26007	post-medieval	1	Backfill of gully
33000	modern		Unstratified finds from Trench 33
33002	IA/L1st/E2ndC	1	Upper backfill levelling of ditch
33003	?IA	2	Backfill of pond/springhead
33007	?2ndC	5	Backfill of ditch
33007	?2ndC	5	Ditch Backfill
33024	2nd/3rdC	10	Levelling - top of ditch
33039	?IA or Roman (2ndC)	8	Backfill of ditch
33040	?2nd/3rdC	2	Ditch Backfill
33041	2ndC	1	Ditch Backfill
35008	?IA	12	Backfill of ditch terminus or pit
35009	Late Roman	3	Ditch Backfill
36000	modern		Unstratified finds from Trench 36
36008	2nd/3rdC	21	Flue Backfill plus demolition of hypocaust.
36019	?2ndC	1	Construction cut for flue/Robber cut?
36036	?2ndC	1	Cobble foundation for Roman building
36045	Late Roman (3rd/4thC)	4	Boundary ditch Backfill
38000	modern		Unstratified finds from Trench 38
38005	2nd/3rdC	2	Upper fill of Quarry hole for cobbles for the construction of Roman road
39000	modern		Unstratified finds from Trench 39
39013	Late Roman/E Anglian	1	Backfill of tree/hedge boundary -small sfbs? That follow earlier double ditch boundary (dated late 3rd/4th century)
39015	Late Roman/Early Anglian	1	Backfill of tree/hedge boundary -small sfbs? That follow earlier double ditch boundary (dated late 3rd/4th century)
39017	Late 3rd/4thC	45	Backfill of gully/ ditch - part of double gully/ditch - contains (mostly left *in situ*) animal burial.
40000	modern		Unstratified finds from Trench 40
42015	?IA/Roman	22	Backfill of ditch
56000	modern		Unstratified finds from Trench 56
56011	2nd/3rdC	4	Pit Backfill
56018	?IA or Late Roman	4	Pit Backfill
107010	?IA	7	Backfill of ring ditch/drip gully of round house

107014	?IA	7	Backfill of re-cut ditch
120004	?modern		Buried agri/horticultural soil layer
121000	modern		Unstratified finds from Trench 121
125000	modern		Unstratified finds from Trench 125
125002	post-medieval	4	Backfill of furrow?

Table 9: *List of contexts from which animal bones were recovered (by hand-collection) including deposits of modern date (no fragment counts are available for these).*

SPECIES		**11**	**26**	**33**	**35**	**36**	**38**	**39**	**42**	**56**	**107**	**125**	**TOTAL**
Canis f. domestic	dog	-	-	1	-	-	-	-	-	-	-	-	1
Equus f. domestic	horse	-	-	1	1	-	-	-	22	-	-	-	24
Sus f. domestic	pig	-	-	-	-	4	-	-	-	-	1	-	5
Cervus elaphus L.	red deer	-	-	1	-	-	-	-	-	-	-	-	1
Bos f. domestic	cow	-	1	4	12	6	1	1	-	3	-	-	28
Caprovid	sheep/goat	-	-	5	2	1	-	-	-	1	-	-	9
Unidentified		1	1	17	-	29	1	46	-	4	13	4	116
TOTAL		**1**	**2**	**29**	**15**	**40**	**2**	**47**	**22**	**8**	**14**	**4**	**184**

Table 10: *Hand-collected vertebrate remains by trench.*

12. DISCUSSION AND CONCLUSIONS

The excavations have revealed that significant archaeological deposits, which have the potential to make an important contribution to the study of prehistoric and Roman settlement in the Vale of York, survive beneath the modern topsoil in portions of the Heslington East site. These have been defined into areas of high significance (Areas A1, A2 and A3) and areas of secondary significance (Areas B1, B2, B3, B4, B5, B6 and B7). These areas are illustrated in Figure 27.

Archaeological deposits containing well preserved organic remains were encountered in certain areas, particularly on the flat Vale basin in Fields 1 and 4, on the spring line of the moraine in Fields 1, 8 and 9, and in a valley between Fields 1 and 3. These types of deposits are rare in the Vale of York and unusual in the York area. They add an important dimension to the significance of the archaeology of the Heslington east site and allows interesting comparanda between York itself and its hinterland.

In some areas, large quantities of colluvium, aeolian sands and plough drag (material accumulated by the continuous dragging of ploughs over millenium down the steep moraine slope) appear to have buried archaeological deposits. This is particularly prevalent in Fields 1, 3 - 4, 5A, and 6 - 10. Across certain parts of the site medieval ploughing, represented by ridge and furrow, has truncated the original ground surface. Modern ploughing and subsoiling is also starting to have a detrimental effect on the archaeology.

It would be difficult to give an overall deposit model for this site, as the terrain is so variable; also within certain fields the differences between individual trenches on the moraine slope is notable (for example between Trenches 55 and 56). It should therefore be generally assumed that in the areas designated as being of archaeological significance, archaeological deposits may be encountered below the modern topsoil. The latter is generally between 200 to 300mm thick.

The following is a period by period discussion of the archaeology of the Heslington East site. The archaeological evaluation has been valuable in shedding new light on the occupation of this area of the Vale of York in all periods.

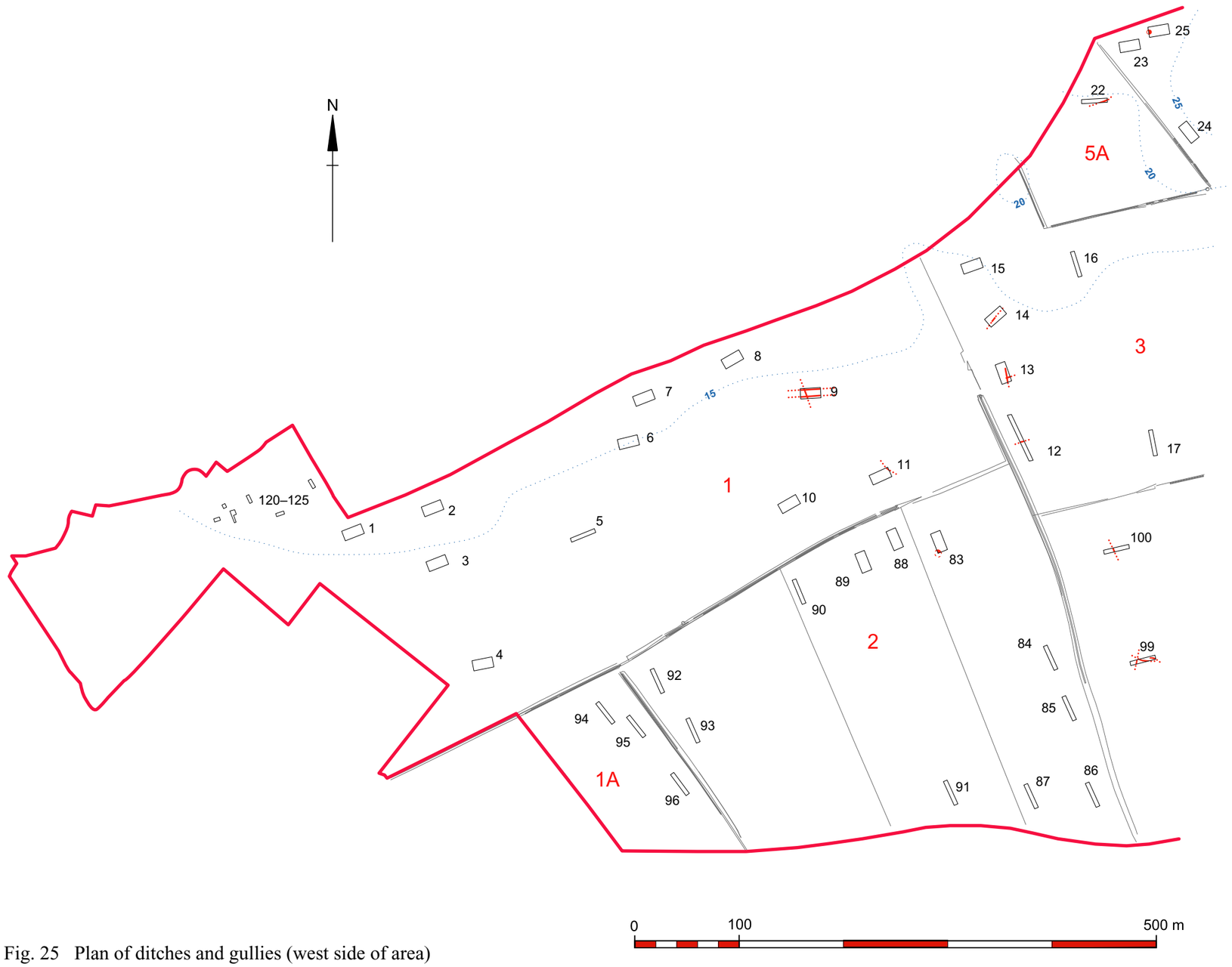

Fig. 25 Plan of ditches and gullies (west side of area)

Fig. 26 Plan of ditches and gullies (east side of main area)

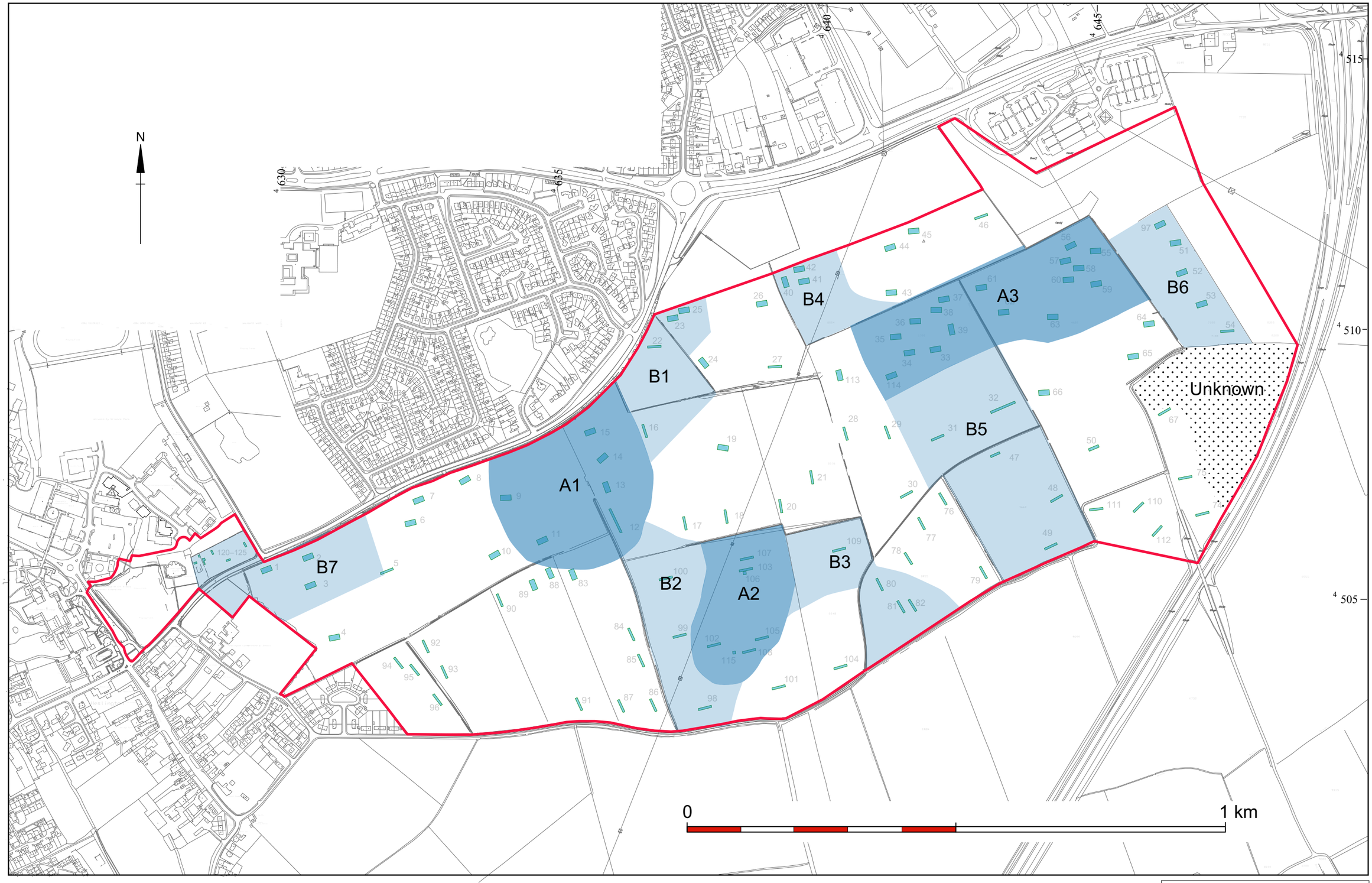

Fig. 27 Areas of Archaeological Significance

12.1 Prehistoric period (to 71AD).

Evaluation excavation has revealed a number of areas of both high archaeological significance (A1 to A3), and secondary archaeological significance (B1 to B6) that contain prehistoric deposits (see Figure 27).

- **A1** – This area includes a dry valley which contains a preserved peat deposit of probable prehistoric date. This date is ascribed to these deposits as peat takes a long time to form, and the deposit was buried under a considerable depth of colluvium. A number of drainage ditches and boundary ditches of probable late prehistoric or Roman date, particularly situated in Trenches 9, 13 and 14, were also recovered. Trenches 11 and 12 also produced some smaller gullies that may be indicative of stock enclosures or settlement. Within the top of a colluvial (hillwash) deposit in the north-eastern corner of Trench 13, a number of large, unabraded, shattered fragments of a prehistoric (possibly Bronze Age or Late Iron Age) pottery jar were recovered. This may indicate that early prehistoric settlement is situated close-by, perhaps to the north-east, up-slope from Trench 13. Environmental evidence from Trench 14 also suggested that occupation may be located in the vicinity.

- **A2** – Two sites of archaeological interest were revealed within this area. The first consisted of an Iron Age enclosure (located within Trenches 103, 106 and 107) that contained the ring ditch or circular drip gully for a round house (in Trench 107) – a circular wooden structure used for human habitation in this period. The earliest backfills of the enclosure ditches appeared to contain well-preserved organic material that indicated that there was a hedge close by and grazing land or an animal enclosure in the vicinity. The enclosure entrance flanked a cobbled trackway, which may have been a secondary addition. The trackway sealed a number of post-holes that may have been for a gate across the enclosure entrance. The second site within Area A2 is less easily quantified or defined. A sequence of undated shallow gullies and ditches, perhaps indicative of early prehistoric settlement activity (Neolithic or Bronze Age) was located within Trenches 102, 105 and 115 although this could not be confirmed as there were no artefacts recovered. The reason for suggesting an early date for these features is due to the colours of the backfills of the features which have been heavily leached (ie. the minerals and humic content of the backfills has been removed by prolonged filtration of water through the deposit to give a much lighter backfill colour than say that of a deposit backfilling Iron Age or Roman ditches found elsewhere on site). This area is slightly higher than the surrounding field and may indicate a spot of dry ground in a wetter environment, where either settlement of a temporary nature, or animal enclosures were positioned. The importance and date of the latter site is difficult to judge on the current evidence, although environmental material from Trench 115 suggests occupation in the vicinity.

- **A3** – This area produced a large number of ditches, gullies and field boundaries, several animal burials, and spring heads, which were of probable prehistoric date. The presence of animal burials may imply religious activity in the area, perhaps focused around the spring heads situated in Trenches 33 and 60. Both of the partially excavated spring heads contained well-preserved organic remains as did some of the ditches, particularly in Trench 33. Part of an unstratified possible quern stone, used to grind cereal, was found

close to Trench 55. In addition there was a Roman settlement consisting of a number of structures, a hypocaust and a road (see below).

Just to the north of Area A3, to the east of Trench 43, a number of unstratified sherds of handmade pottery perhaps of either Iron Age or Anglian date were recovered from the topsoil.

- **B1 to B5** – These areas contained further evidence for field boundaries, ditches and gullies that may date to the prehistoric or Roman period. These were situated in Trenches 22, 31, 32, 41, 42, 47, 49, 81, 98 - 100 and 109. A horse skull was recovered from a ditch backfill in Trench 42, and may imply an extension of religious or ritual activity into this part of the site.

  In addition, part of an unstratified saddle-shaped quern stone (a diagnostic artefact of the Late Neolithic to Middle Iron Age) was located within Trench 109 and a pit situated at the western end of Trench 25 contained a number of fragments of Iron Age pottery and a spindle whorl. These may indicate the presence of prehistoric settlement in the vicinity of both Trenches 25 and 109.

- **B6** – This area produced further evidence for ditches and gullies in Trenches 51-4 which may date to the prehistoric or Roman period. Several large saddle quern fragments and an associated grind stone, were recovered from the top of a thick colluvial (hillwash) deposit in Trench 51. Saddle quern fragments of this size may indicate the presence of prehistoric settlement further up slope (i.e. to the north or north-east of Trench 51), although nothing of this type was located within Trench 97.

- **B7 –** Several fragments of pottery that may date from the Iron Age or the Anglian period were recovered from a subsoil layer in Trench 3. This may indicate the presence of a prehistoric or Anglian settlement site in the vicinity, although it is possible that this has been removed by later agricultural activities.

  The evaluation also produced one worked flint fragment from a ditch in Trench 33 (Area A3). This scarcity of flints from the hand-excavated archaeological deposits is of interest when compared with the larger quantity (some 97) of worked flints recovered during the field walking. Explaining this substantial difference is difficult. It is possible that the flints have been imported to the site in fresh topsoil, used to improve the agricultural land's productivity. Alternatively, ploughing has had such a dramatic effect on the prehistoric archaeology that the majority of the settlement evidence on the moraine top, other than deep gullies and ditches, has been removed by deep ploughing. If the prehistoric settlement evidence has been severely damaged by deep ploughing, this still does not adequately explain why many of the archaeological features that were hand-excavated, especially in Fields 8 and 9, did not produce more worked flint.

  Explaining this might be addressed by hand excavating a number of test-pits in Fields 8 and 9, through the topsoil and subsoil deposits to see where worked flints are concentrated. This may help to reveal horizontal as well as vertical concentrations of flint, which may suggest areas of occupation in the early prehistoric periods. This was not possible during the current evaluation due to the methodology used (ie the topsoil and

subsoil was removed by machine in each trench rather than by hand). However, it should be noted that, as mentioned in the archaeological and historical background, a number of other sites in the vicinity (Heslington Hill (FAS 2003) and Germany Beck (MAP 1996)) have produced appreciable quantities of flint of similar date (Late Neolithic and Bronze Age) from similar coastal sources (north-eastern coast of Yorkshire and the Yorkshire Wolds). This suggests that the flint assemblage from the Heslington East field walking is the result of Late Neolithic and Bronze Age activity on the upper, south-facing slope of Kimberlow Hill, probably of a temporary, seasonal nature, the insubstantial remains of which have been ploughed off the top of the moraine and down slope as a result of post-medieval and modern agricultural activities. This may explain why the flints are concentrated in the modern ploughsoil.

12.1.1 Summary

Current evidence suggests that prehistoric activity in the development area takes several distinct forms. The earliest, dated to the late Neolithic or early Bronze Age (c. 3200 to 1500 BC), was focused on the moraine, which was primarily used, probably seasonally, as a routeway. As no structural evidence for this occupation site has been recovered, it is possible that this ephemeral archaeology has been removed by post-medieval and modern ploughing, the only remaining evidence we have for it being distributions of worked flint within the modern ploughsoil. Settlement evidence from the late Neolithic and the Bronze Age periods (3200 to 700 BC) may be situated in Areas A1 and A2, and also perhaps close to the find spots of several saddle quern stones (Areas B3 and B6). In the later prehistoric period, i.e. the Iron Age (c. 700 BC to 71 AD), parts of the landscape appear to have been sub-divided into fields and settlement enclosures. One such settlement enclosure, with a ring ditch or drip gully (indicative of an Iron Age roundhouse), was located in Area A2. This roundhouse, some 6m in diameter, is directly comparable to others located in the vicinity of York, including those located on the Easingwold Bypass (Whyman 1993) and the Elvington to Moor Monkton Yorkshire water pipeline (Pearson 1997). A considerable number of ditches and gullies suggest that land division extended across the whole development area in this period. Locating evidence for these field systems is difficult, as they do not show up clearly in the geophysical survey results. In Area A3, a group of enclosures may form the focus of some ritual activity, associated with several spring heads of prehistoric date. Other Iron Age settlement evidence may be located in the vicinities of Trenches 3 and 25 (Areas B1 and B7).

12.2 Roman (71AD to the Early 5th Century AD)

The evaluation excavation has produced considerable evidence for Roman activity and settlement in the development area.

- **A1, A2 and B1-6** – In these areas the field systems defined by ditches and laid out in the Iron Age probably continued in use into the Roman period. It is also possible that the Iron Age occupation site in Area A2 continued to be used in the early part of this period, the enclosure entrance being consolidated by a cobbled trackway.

- **A3** – In the early Roman period (late 1st – early 2nd century) the series of enclosures focused around several spring heads may have continued in use. From the mid-2nd century AD, however, two areas of intense occupation, investigated in Trenches 33-9 and 56 were established. In Trenches 33-9 the foundations for the northern end of a building were recovered, including the hypocaust, and furnace base for a heated room, probably in a small bath house. The building was not recovered in its entirety, but it may be interpreted as part of a villa complex of 2nd - 3rd century date. The building may have had a series of associated ditched enclosures and a tree or hedge boundary with a road leading to it from the north-east. In Trench 56, a sub-square stone structure of similar date, but of unknown function, was recovered. A number of pits containing domestic waste were also recorded close to it. In the late Roman period all of the Roman structures and buildings were demolished and cleared to foundation level, including the tree or hedge boundary, and several large boundary ditches were dug, on a north-west to south-east alignment. These may date to the 4th century, and reveal a re-organisation of the landscape and, perhaps, its ownership at this time.

- **B7** – It had been thought that Roman burials or structures could survive within B7, but none were located in the evaluation trenches in this area, close to the east side of the village. It should be noted, however, as only a small percentage of Area E and the west end of Field 1 were excavated, encountering sparsely distributed Roman burials elsewhere in this area is still a possibility.

12.2.1 Summary

Patterns of land use established in the late Iron Age, probably continued into the early years of the Roman occupation within the Heslington East site. This is consistent with evidence from elsewhere in the Vale of York (Ottaway 2003, 146). The proximity of *Eboracum* and of two important Roman roads, suggests that settlement in the Heslington area assumed a Romanised character by the early 2nd century with the adoption of structures and material culture (pottery, metalwork etc) of Roman type. By the 2nd or 3rd century there are indications, including two stone-coffined burials from Heslington, that wealthier landowners in the area may have established estates based on villas, i.e. Romanised country houses. The bath house in Area A3 of the archaeological evaluation is likely to be evidence for a villa. This appears to have been situated within its own landscape of enclosures, and had a road leading to it from the north-east. The building would have had a stunning setting with vistas over the vale of York to the south and towards the Yorkshire Wolds to the east. This building may have been comparable to what is thought to have been a small bath house located at Hayton, c.15km to the south-east of York (Halkon 2003). Further settlement evidence of this date, associated with a sub-square cobble foundation was situated further to the east in the vicinity of Trench 56. By the 4th century all the buildings had been demolished and cleared and a new landscape, incorporating large boundary ditches was imposed. This probably indicates a change in land ownership and its organisation.

12.3 Anglian and Anglo-Scandinavian (Early 5th to Mid 11th Century AD)

The evaluation excavations produced a number of features that suggest late Roman and Anglian occupation.

- **A3** – The large boundary ditches (in Trenches 35 and 36) excavated in the 4th century may have continued in use, and appear to have been infilled with very black (ashy?) deposits of 4th century date suggesting occupation close by. To the east of this a number of holes produced by the removal of a tree/ hedge line (Trench 39) were also backfilled with pottery suggestive of Late Roman or early Anglian occupation (see the pottery report, pages 134-5).

- **B1** – The backfill of a gully excavated within Trench 22, produced pottery that may be of Anglian date which may suggest settlement in the vicinity.

- Other trenches in areas **A1**, **A3** and **B7** also produced pottery that may be of Anglian date from unstratified contexts or subsoil layers (Trenches 3, 13, 38 and 43).

12.3.1 Summary

Little is understood of how the landscape changed in the York hinterland from the late Roman to the Anglian period (Ottaway 2003, 148). Occupational evidence in Areas A3 and B1 and hinted at in Areas A1, A3 and B7 is therefore very important in terms of gaining more of an understanding of this transitional period. This occupation may be linked to activity of early Anglian date (c. 5th and 6th century AD) at Heslington Hill (FAS 2003) and to the later cemetery at Lamel Hill (c. 7th and 8th century AD) (Thurnam 1849).

There appears to be, at present, no evidence to suggest that the Heslington East site contains a settlement of Anglo-Scandinavian date (c. 850 to 1066 AD). The land may have continued to be used for agriculture or pasture at this time, but there is no evidence for the renewal of drainage ditches, or its re-organisation into a different field system. It is possible that the villages of Heslington, Grimston and Osbaldwick all had their origins in the Anglian or Anglo-Scandinavian periods, but the precise dates of the founding of these settlements are still unknown.

12.4 Medieval (Mid 11th to Early 16th Century AD)

The evaluation excavations have produced extensive evidence to suggest that the Heslington east site was used for agriculture throughout the medieval period. Most of the trenches and geophysical transects produced evidence for ridge and furrow, a form of earthwork, produced to aid drainage of arable fields in the medieval period. The earliest pottery (gritty ware) recovered from the furrows during the evaluation appears to date from the 11th or 12th century AD. This suggests that the fields had been laid out in this manner by at least the 12th century. Fieldwalking evidence suggests that the distribution of finds reflects medieval manuring patterns. The evaluation has also revealed other information about the area.

- **B7** – In this area, evaluation trenches were positioned to target archaeological evidence for the extent of the medieval graveyard and also the existence of a tithe barn. It is important to note that, although at present day graveyard does not extend into the area to the east of the present churchyard wall, the extent of the medieval graveyard is still not

fully known. Evaluative excavations in this part of the site revealed that there was no evidence to suggest that medieval burials extended beyond the present day eastern limits of the churchyard. To the north of the paddock (the field to the east of the church), in a section of woodland between the field and the University Science Park, a number of architectural fragments of possible medieval date were observed during the evaluation excavation, but not recovered or recorded.

Documentary evidence suggests that in 1299 the lessee of St Lawrence's rectory leased a plot of land adjacent to St Paul's churchyard from the Prebend of Ampleforth. A tithe barn was subsequently built on this plot. Evaluation excavations within the paddock, have not located the position of the tithe barn or its foundations. Either these were removed completely upon demolition, the building perhaps having insubstantial foundations, or the footings have been removed by modern ploughing, however, there is still a slim possibility that evidence may exist for this building in areas of the field not targeted by evaluation trenches or in the woodland strip to the north of the paddock.

12.4.1 Summary

During the medieval period the development area appears to have been principally used as agricultural land by the villages of Heslington and Grimston. Other than furrows, no other medieval features were located within the development area. The origins and form of the medieval village of Heslington is not fully understood at present. It has been suggested that the medieval manor, was situated where the Manor House is today, at the southern end of Main Street. This would give the village a similar layout to the nearby village of Osbaldwick, with the manor situated at one end of the street and the church at the other. Documentary evidence for Heslington suggests the presence of a medieval tithe barn in the field to the east of the church, but its exact position is still unknown.

12.5 Post-Medieval (Early 16th to Mid 19th Century AD)

Evaluation excavations have revealed evidence to suggest that the area has been used for agriculture throughout this period.

It is probable that the medieval field systems referred to above lasted into the post-medieval period, although Perring (1999, 24) claims that the ridge and furrow field system observed in the area where the University now stands, do not usually date from earlier than c.1500. He suggests that the straight nature of the furrows indicates that they relate to early 16th century improvements to the agrarian landscape in the area. Evidence for the rearrangement of furrows was encountered in portions of the Heslington East site during the evaluation excavation. The precise date for this rearrangement is unknown on current evidence.

The enclosure of the parish in 1762 and again in 1857 gave rise to a more regular field pattern in the area, but part of the original common land within the parish survived. The village land remained largely arable, with turnips, potatoes, mustard flax and chicory being grown during the late 18th century. Some evidence for the introduction of new field ditches, hedges and early attempts at land drains was recovered during the evaluation excavations, particularly in Trenches 53 and 95. A pond, backfilled with deposits

containing well-preserved organic material of post-medieval or earlier date was located in Trench 11.

An unusual bank type feature that divides Fields 5 and 6 may have been created by the insertion of a drove-way, or track along the north side of Fields 3 and 6 in the post-medieval period; this track was removed in the 3rd quarter of the 20th century by the farmer (Hawkswell, pers. comm.). Many of the current field boundaries also have slightly banked profiles from the piling up of glacial cobbles, and boulders that have been dug up during the course of ploughing.

12.5.1 Summary

In the post-medieval period the development area was mostly agricultural land, and the medieval strip fields (now represented by backfilled furrows within the evaluation trenches) continued to function into the early part of this period. The biggest alteration to the village was the construction of Heslington Hall between 1565-8. Heslington Lane, from Heslington to Fulford, was also constructed at this time. It is not known how Heslington Hall relates to the earlier medieval manor and village, and what changes its construction brought to the landscape, although it has been suggested that the Manor House of today, at the southern end of Main Street, was the site of the medieval manor. A number of farms appear to have been situated between the Hall and the Church in the post-medieval period. The medieval church and tithe barn remained as important structures within the village at this time, and a school was built on School Lane at the end of the period. Archaeological evaluation has revealed evidence for the improvement of agricultural land by the enclosure of medieval strip fields with ditches and hedges (observed in Trenches 53 and 95). Early land drains of 18th century date have been revealed in Fields 8-10. Evaluation excavations in Area E have not clarified any of the uncertainties associated with the circumstances of the construction of Heslington Hall and its impact on the medieval landscape in its locality, or the position of the tithe barn which would have survived into this period.

12.6 Modern (Mid 19th Century AD to the present day)

A number of modern features have been revealed during the archaeological evaluations.

A backfilled gravel quarry of 20th century date was located in Trench 1 in the north-western corner of Field 1 of the evaluation. Also within this field cartographic evidence and aerial photographs, as well as personal memories (Hawkswell, pers. comm.) suggest that a sewage works was situated on the field's southern edge. This was probably constructed in the late 1940s, and was superseded by the sewage works at Naburn by 1964. In the third quarter of the 20th century the track that flanked the north side of Fields 3 and 6 was removed by the tenant farmer (Hawkswell, pers. comm.). Several features of unknown function, but of modern date were located in Trench 26.

The results of the fieldwalking, geophysical survey and evaluation trenches suggest that intensive manuring continued across the agricultural land that forms the majority of the development area. A number of attempts, by successive generations of farm tenants, have been made to improve the agricultural land quality by the introduction of new land

drainage schemes and drainage dykes, and by deep ploughing and subsoiling the land. Some of the enclosure hedges and ditches have also been removed and infilled to increase the size of the fields

Other modern interventions within the development area include a concrete Ordnance Survey trig point (pillar) on Kimberlow Hill, a modern water pipeline that crosses Area E, the western sides of Fields 1 and 1A, and the southern sides of Fields 2 and 4, a series of four electric pylons that traverse Fields 2, 4, 6 and 7, a telecommunications mast in the south-west corner of Field 11, and a City Park and Ride facility also within Field 11. The area immediately to the east of the church has been partially used as a tree nursery for the University in recent times.

No evidence for features relating to the demolition of the tithe barn, or the use of Area E during WWII were recovered in Trenches 120-5.

12.6.1 Summary

The village of Heslington today still retains much of its rural character, even though the modern University overshadows it. Major changes to Heslington Hall and St. Paul's Church occurred in the mid 19th century, and the medieval tithe barn and buildings situated between the church and the Hall were demolished. The green, landscaped area between Heslington Hall and Heslington church probably took its modern form at this time. This area may have been used for some unknown purpose during WWII associated with Bomber Command. The full extent of associated structures, such as teleprinter huts is still unknown. Minor changes to the road layout just to the east of Heslington Hall have been made in the late 20th century. The rest of the development area has been agricultural land throughout the modern era, probably being completely enclosed by 1857. The current field layout differs slightly from that of 1857, as hedgerows have been removed to facilitate modern agricultural practices. The only evidence for modern activity, other than for agricultural improvements, is associated with a sewage works and a gravel quarry in Field 1, a borrow–pit and landfill site in Field 11, new bridge and track associated with the construction of the A64 in Field 13, services including water and electric which traverse the development area, a modern Ordnance Survey trig point, telecommunications mast, a City Park and Ride facility and a tree nursery.

13. ARCHAEOLOGICAL IMPLICATIONS

The development of Heslington East is likely to have a direct impact on any archaeological remains below the existing ground surface. Research, fieldwalking, geophysical survey and the evaluation excavations have highlighted a number of areas that contain important archaeological deposits and structures with considerable research potential especially in respect of the late Iron Age and Roman period (see Figure 8.4.2.1). These include areas of high significance (prefixed by symbols A1, A2 and A3): -

- **A1** – This area is situated at the eastern end of Field 1 and at the western end of Field 6. It was initially identified during the geophysical survey as containing archaeological features. Excavation has shown that it contains a dry valley with both palaeo-environmental (peat) deposits, and evidence for prehistoric settlement and land division (located within Trenches 9 and 11-14) which may continue into the Roman period. Unstratified Anglian pottery was recovered from Trench 13. There is also the remains of a post-medieval or earlier pond in Trench 11 that had well-preserved organic remains backfilling it.

- **A2** – Situated in the northern and central portions of Field 4, this area was identified as containing geophysical anomalies of possible archaeological origin. Excavation showed that it contains the well-preserved remains of an Iron Age settlement enclosure (located in Trenches 103, 106 and 107), and another possible site of earlier prehistoric activity (located in Trenches 102, 105 and 115). The Iron Age settlement enclosure ditches contained well-preserved organic remains.

- **A3** – Located on the south-facing slope of Kimberlow Hill, this area was identified by flint scatters during the fieldwalking, and by a number of anomalies during the geophysical survey. The latter were concentrated in the northern halves of Fields 8 and 9 and in the southern half of Field 7. This area is of archaeological significance as it contains a sequence of prehistoric enclosures which focus around two spring heads (located in Trenches 33 and 60). Several animal burials in Trenches 34 and 39 may be associated with religious activities within these enclosures. The enclosures appear to carry on into the Roman period. Part of a Roman villa, dating to the 2nd or 3rd century AD, was recovered within Trench 36, and the road leading up to it in Trench 38. Further to the east (in Trench 56) a small sub-rectangular cobbled foundation or footing was located of unknown function. The two sites just described were probably linked, and although there was no archaeology recovered in Trenches 37, 61 and 62, it is prudent to consider them as part of the same complex so that the link between the two sites can be confirmed and identified in further archaeological work. The structures were demolished and robbed for materials by the late 3rd century, and this area appears to have been leveled and reorganised with the insertion of several large boundary ditches, aligned north-west / south-east, in the 4th century (located in Trenches 35 and 36). Trenches 35, 36, 38, 39 and 56 also contained occupation evidence that suggests that the site continued in use into the Early Anglian period (5th century AD).

The Heslington East site also includes several areas of archaeology of secondary significance (prefixed by symbols B1 to B7):

- **B1** – This area, situated to the north-east of Area A1, identified during the geophysical survey as containing several anomalies, contained a gully and a pit. The pit (located in Trench 25) contained pottery and a fragment of a spindle whorl of probable Iron Age date. This may indicate the presence of a settlement or occupation site close by. The gully (in Trench 22) was backfilled with a deposit which contained Anglian pottery. This may suggest the presence of a settlement of this date in the vicinity.

- **B2** – A number of ditches and gullies (revealed in Trenches 98 - 100), probably associated with field divisions, were recovered in this area, situated at the western side of Field 4, and linking Areas A1 and A2 together. It is possible that this evidence for land division may relate to the settlement evidence in Areas A1 and A2.

- **B3** – Located to the north-east and east of A2, this area contained evidence for ditches and gullies (in Trenches 81 and 109) which may relate to field systems associated with the settlement in A2. A fragment of unstratified saddle quern was also recovered from Trench 109 which may suggest that associated settlement lay in the vicinity of this trench.

- **B4** – Situated to the north-west of A3, this area was identified during the geophysical survey, as having the potential to contain preserved archaeological features. The land slopes down from south-east to north-west into a hollow in the vicinity of Trenches 40-1 and contained the remains of ditches and gullies, probably associated with a prehistoric or Roman field system. The remains of a horse skull in a ditch backfill from Trench 42 may be another example of religious and ritual activity also suggested in Area A3. Trench 43, just to the east of Area B4 also contained unstratified pottery of either Iron Age or Anglian date.

- **B5** – This area is positioned to the south-east of A3 and contained a number of ditches and gullies that may date to the prehistoric or Roman periods (situated within Trenches 31, 32, 47 and 49). These may be associated with settlement activity within Area A3.

- **B6** – Positioned at the extreme north-eastern end of the development area, this contained a number of features that may be of prehistoric date. At the northern end of B6, in Trench 51, an early prehistoric ditch or gully (perhaps dating to the Neolithic period) was sealed by a thick deposit of colluvium (hillwash). In the top of this material several large fragments of saddle quern had been deposited. This may indicate that a prehistoric settlement was located close by. Several other ditches and gullies of prehistoric or Roman date were also recovered further south within Trenches 52–54. These may relate to the settlement situated in Area A3.

- **B7** – Located at the extreme north-western corner of the Heslington East site, this area was thought to possibly contain Roman burials and the remains of a medieval tithe barn. Although few deposits of archaeological interest were recovered from any of the excavated trenches within this area, there is still a possibility that sparsely scattered Roman burials may be encountered, and the ephemeral foundations of the tithe barn located within the areas not targeted by the evaluation trenches.

14. LIST OF SOURCES

14.1 Bibliography

Bartlett, A. D. H., 2003. *University of York Heslington East Development Archaeological Geophysical Survey Phase 1*, GeoQuest Associates

Bartlett, A. D. H. and Noel, M. J., 2003. *University of York Heslington East Development Archaeological Geophysical Survey Phases 1 and 2,* GeoQuest Associates

Bartlett, A. D. H. and Noel, M. J., 2004a. *University of York Heslington East Development Archaeological Geophysical Survey Phases 1, 2 and 3,* GeoQuest Associates

Bartlett, A. D. H. and Noel, M. J., 2004b. *University of York Heslington East Development: Archaeological Resistivity Survey in Field 9*, GeoQuest Associates

Betts, I., 1985 (unpublished). *A Scientific Investigation of the Brick and Tile Industry of York to the Mid- eighteenth century,* PhD thesis, University of Bradford

Carrott, J., Dobney, K., Hall, A., Kenward, H., Jaques, D., Large, F. and Milles A., 1993. *An Assessment of Environmental Samples from Excavations in Crankley's Lane, on the Easingwold By-pass*, Environmental Archaeology Unit Report **32**

Clark, J., 1986. 'Medieval Horseshoes', *FRG Datasheet **4***

Cronyn, J. M., 1990. *The Elements of Archaeological Conservation*

Dobney, K., 2001. 'A place at the table: the role of vertebrate zooarchaeology within a Roman research agenda', in S. James and M. Millett (eds), *Britons and Romans: advancing an archaeological agenda.* Council for British Archaeology Research Reports **125,** 36-46

Dobney, K., 2001. 'A place at the table: the role of vertebrate zooarchaeology within a Roman research agenda', in S. James and M. Millett (eds), *Britons and Romans: Advancing an Archaeological Agenda,* Council for British Archaeology Research Report **125** (York), 36-46

Dobney, K., Hall, A. R., Kenward, H. K. and Milles, A., 1992. 'A working classification of sample types for environmental archaeology'. *Circaea, the Journal of the Association for Environmental Archaeology* **9,** 24-6

Elgee, F., 1933. *The Archaeology of Yorkshire* (London)

English Heritage, 1991. *Management of Archaeological Projects*

Evans, D., 2002. *Campus 3 Development, University of York, York: Report on an Archaeological Desk Top Study*, York Archaeological Trust, Report **58**

FAS (Field Archaeology Specialists), 1997. *Heslington Hill: An Evaluation Report.* FAS Field Report

FAS (Field Archaeology Specialists), 2003. *Heslington Hill, Heslington: A Post-Excavation Report,* FAS Field Report

Grant, A., 1984. 'Animal Husbandry', in B. Cunliffe (ed) *Danebury, an Iron Age Hillfort in Hampshire. Vol. 2. The excavations 1969-1978: the finds* Council for British Archaeology (London) 496-548

Grant, A., 2002. 'Scales of reference: archaeozoological approaches to the study of behaviours and change', in K. Dobney and T. O'Connor (eds) *Bones and the man: Studies in honour of Don Brothwell* (Oxford) 79-87

Halkon, P., 2003. 'Researching an Ancient Landscape: the Foulness Valley, East Yorkshire', in T.G. Manby, S. Moorhouse and P. Ottaway (eds), *The Archaeology of Yorkshire: An Assessment at the Beginning of the 21st Century*, Yorkshire Archaeological Society Occasional Paper 3, 261-274

Hall, A., Jaques, D. and Carrott, J., 2003. *Technical report: biological remains from a site north-east of Goodmanham, East Riding of Yorkshire*, Environmental Archaeology Unit, Report **1**

Jaques, D., 2000. *Technical report: vertebrate remains from Garforth, West Yorkshire*, Environmental Archaeology Unit, Report **10**

Kendall, T., 2003. *Campus 3 Development, University of York, York: Report on Archaerological Fieldwalking*, York Archaeological Trust, Report **22**

Kenward, H. K., 1992. 'Rapid recording of archaeological insect remains - a reconsideration', *Circaea, the Journal of the Association for Environmental Archaeology* **9**, 81-8

Kenward, H. and Hall, A., 1997. 'Enhancing bioarchaeological interpretation using indicator groups: stable manure as a paradigm', *Journal of Archaeological Science* **24**, 663-73

Kenward, H. and Hall, A. (in press). 'Actively decaying or just poorly preserved? Can we tell when plant and invertebrate remains in urban archaeological deposits decayed?' *Proceedings of the PARIS II Conference*

Kenward, H. and Large, F., 1998. 'Recording the preservational condition of archaeological insect fossils', *Environmental Archaeology* **2**, 49-60

Kenward, H. K., Hall, A. R. and Jones, A. K. G., 1980. 'A tested set of techniques for the extraction of plant and animal macrofossils from waterlogged archaeological deposits', *Science and Archaeology* **22**, 3-15

Kenward, H. K., Engleman, C., Robertson, A. and Large, F., 1986. 'Rapid scanning of urban archaeological deposits for insect remains', *Circaea* **3**, 163–172

Knight, B., 1990. 'A Review of the Corrosion of Iron from Terrestrial Sites and the Problem of Post-Excavation Corrosion', *The Conservator* **14**, 37–43

Macnab, N., 2002. *Metcalfe Lane, Osbaldwick, York.* York Archaeological Trust, Report **16**

Mainland, I., 1988. *An analysis of the animal bone from the Romano-British small town at Shiptonthorpe, near Holme-upon-Spalding Moor, East Yorkshire*. Unpublished archive report for M. Millett, Department of Archaeology, University of Durham

Manby, T. G., 1980. 'Bronze Age settlement in eastern Yorkshire', in J.C. Barrett and R. Bradley (eds), *Settlement and Society in the British Later Bronze Age* (Oxford)

Manby, T.G., 1988. 'The Neolithic period in eastern Yorkshire', in T.G. Manby (ed.), *The Archaeology of Eastern Yorkshire: essays in honour of T. C. M. Brewster* (Sheffield)

Manby, T. G., 2003. 'The Iron Age of central and Pennine Yorkshire' in T.G. Manby, S. Moorhouse and P. Ottaway (eds), *The Archaeology of Yorkshire: An Assessment at the Beginning of the 21st Century*, Yorkshire Archaeological Society Occasional Paper 3, 121-124

Manby, T.G., King, A., Vyner, B.E., 2003. 'The Neolithic and Bronze Ages: a time of early agriculture', in T.G. Manby, S. Moorhouse and P. Ottaway (eds), *The Archaeology of Yorkshire: An Assessment at the Beginning of the 21st Century*, Yorkshire Archaeological Society Occasional Paper 3, 35-116

MAP (MAP Archaeological Consultancy), 1996. *Germany Beck - Fulford. Archaeological Sample Excavations: Interim Report*, MAP Field Report

Mason, I., 2003 *Campus 3 Development, University of York, York: Report on Archaeological Field Walking*, York Archaeological Trust, Report **25**

Mason, I. and McComish, J., 2003. *Campus 3 Development, University of York, Zone E: Report on an Archaeological Desk-top Study*, York Archaeological Trust, Report **29**

Noddle, B., 1979. *Animal bones from Garton Slack*, Ancient Monuments Laboratory Report **2754**

Ove Arup, 1991. *York Development and Archaeology Study*. For York City Council and English Heritage. Produced by Ove Arup and Partners Consulting Engineers and York University, in association with Bernard Thorpe

Ottaway, P. J., 2003. 'Roman Yorkshire: a rapid resource assessment' in T.G. Manby, S. Moorhouse and P. Ottaway (eds), *The Archaeology of Yorkshire: An Assessment at the Beginning of the 21st Century*, Yorkshire Archaeological Society Occasional Paper 3, 125-149

Pearson, N., 1997. 'New Pipes, Old Pots and Hut Circles', *Interim: Archaeology in York* ***22/1***, 5-15

Perring, D., 1999. *An Archaeological Appraisal of the University of York Heslington Campus, National Grid Reference NGR 625505* (Copy held at York SMR)

Pevsner, N. and Neave, D., 1997. *The Buildings of England, Yorkshire: York and the East Riding* (London)

Radley, J., 1974 'The Prehistory of the Vale of York', *Yorkshire Archaeological Journal* **41**, 10-22

Ramm, H.G., 1965. 'The site of Siward's How', *Yorkshire Archaeological Journal* **41,** 584-7

Ramm, H.G., 1966. 'The Green Dykes, a forgotten Yorkshire earthwork', *Yorkshire Archaeological Journal* **41,** 587-90

RCHMY. Royal Commission on Historical Monuments (England). *An Inventory of the Historical Monuments in the City Of York*. **1**: *Eburacum, Roman York* (1962); **3**: *South-West of the Ouse* (London)

Reece, R., 1970. *Roman Coins* (London)

Reece, R. and James, S., 1986. *Identifying Roman Coins* (London)

Short, R.D., 1994. *The Survey of Siward's How*, Unpublished, University York Dissertation

Smith, A. H., 1970. *The Place-names of the East Riding of Yorkshire and York*, English Place-Name Society, **XIV**

Thurnam, J., 1849. 'Description of an ancient tumular cemetery, probably of the Anglo-Saxon period at the Lamel Hill, near York', *Archaeological Journal* **6**, 27-39 and 123-136

VCH, Pugh, R.B. (ed.), 1976. *The Victoria History of the County of Yorkshire East Riding* Volume III (Oxford)

VCHY, Tillott, P. (ed.), 1961. *The Victoria History of the County of Yorkshire, The City of York* (Oxford)

Ward, D. 2000. *Heslington Memories*

Wilson, B., 1992. 'Considerations for the identification of ritual deposits of animal bones in Iron Age pits', *International Journal of Osteoarchaeology* **2**, 341-349

Whyman, M., 1993. 'Easingwold Bypass', *Interim: Archaeology in York **18/3***, 4-14

YAT (York Archaeological Trust) 1997. Archive Gazetteer: www.yorkarchaeology.co.uk/gaz.index.htm

YAT 1996. *Context Recording Manual*.

Yorkshire Philosophical Society, 1832. *Yorkshire Philosophical Society: Annual Report* (York)

14.2 Other Sources

Bulmer, 1892. Bulmer's History and Directory of the East Riding.

City of York Sites and Monuments Record

Geological Survey, 1967. Geological Surevy of Great Britain (England and Wales) Solid and Drift, Sheet 63.

Heslington Inclosure Award Map 1857

Jeffreys Map of Yorkshire 1775

National Monuments Record

OS Maps (1:2500 Scale) 1893, 1909, 1931, 1936, 1937, 1938, 1964, 1992

15. ARCHIVE CATALOGUE

Description	Number
Context Registers	116 (T125)
Context Cards	1593
Card/paper used for matrix	62
Card used for sketch plan	4
Card used for photo register	1
Plan Sheets	235
Section Sheets	150
Level Sheets	159
Sample Register	4
Sample Sheets	69
Colour print photographs	10 films, c. 360 shots
Slides	11 shots
Digital Images	17
Bulk Finds	302
Small Finds	82
Samples	69

16. CATALOGUE OF PHOTOGRAPHS

16.1 Colour Print Photographs

2003-023-01 No negative
2003-023-02 No negative
2003-023-03 No negative
2003-023-04 No negative
2003-023-05 No negative
2003-023-06 Trench 34, ?horse/foal burial 34010, looking east
2003-023-07 Trench 34, ?horse/foal burial 34010, close-up, looking east
2003-023-08 Blank
2003-023-09 Blank
2003-023-10 Trench 38, section through Roman Road, 38008, looking east
2003-023-11 Trench 38, section through Roman Road, 38008, looking east
2003-023-12 Trench 38, northeast-facing section of roadside ditches 38012 and 38014
2003-023-13 Trench 38, northeast-facing section of roadside ditches 38012 and 38014
2003-023-14 Trench 38, northeast-facing section of roadside ditches 38002 and 38024
2003-023-15 Trench 38, southwest-facing section of roadside ditches 38021 and 38023
2003-023-16 Trench 38, southwest-facing section of roadside ditches 38021 and 38023
2003-023-17 Trench 38, working shot, looking east
2003-023-18 Working shot, looking east-south-east from Trench 38
2003-023-19 Trench 38, post-excavation shot, looking east
2003-023-20 Trench 38, post-excavation shot, looking east
2003-023-21 Trench 38, post-excavation shot, looking east
2003-023-22 Trench 35, gully 35003, south-facing section
2003-023-23 Trench 35, pit/ditch terminus 35007, north-facing section
2003-023-24 Trench 28, looking south-south-east
2003-023-25 Trench 29, looking south-south-east
2003-023-26 Trench 29, looking south-south-east
2003-023-27 Trench 35, ditch 35011, south-facing section
2003-023-28 Trench 35, ditch 35010, north-facing section
2003-023-29 Trench 35, ditch 35010, north-facing section
2003-023-30 Trench 35, looking east
2003-023-31 Trench 35, post-excavation shot of the west end, looking north
2003-023-32 Trench 31, looking east
2003-023-33 Trench 31, looking east
2003-023-34 Trench 36, cleaned up area of Roman building
2003-023-35 Trench 36, looking east, working shot, cleaning up
2003-023-36 Trench 36, working shot, cleaning back

2003-024-01 No negative
2003-024-02 Trench 50, looking northeast
2003-024-03 Trench 50, looking northeast
2003-024-04 Trench 37, deep sondage in the southwest corner, south-facing section
2003-024-05 Trench 37, deep sondage in the southwest corner, south-facing section
2003-024-06 Trench 38, machining in progress, looking northwest
2003-024-07 Trench 38, machining in progress, looking west-north-west

2003-024-08 Trench 39, pit 39010, west-facing section
2003-024-09 Trench 39, pit 39014, east-facing section
2003-024-10 Trench 39, gully 39018 and animal burial 39045, looking south
2003-024-11 Trench 39, animal burial 39045, looking south
2003-024-12 Blurred
2003-024-13 Trench 39, gully 39040, north-facing section
2003-024-14 Trench 39, gully 39038, north-facing section
2003-024-15 Trench 39, double gullies 39038 and 39040 and pit 39014, looking south
2003-024-16 Trench 36, votive pots 36003-7
2003-024-17 Trench 36, votive pots 36003-7
2003-024-18 Trench 36, structure 36053, revealed during machining, looking northeast
2003-024-19 Trench 37, looking east
2003-024-20 Trench 39, looking south, post-excavation shot
2003-024-21 Trench 39, looking north, post-excavation shot
2003-024-22 Trench 39, looking north, post-excavation shot
2003-024-23 Trench 34, looking west

2003-025-01 – 2003-025-14 Blank
2003-025-15 Trench 33, after cleaning, middle of trench looking north
2003-025-16 Trench 33, west end, after cleaning, looking north
2003-025-17 Trench 36, working shot, excavation of Roman bath house
2003-025-18 Trench 36, working shot, excavation of Roman bath house
2003-025-19 Trench 48, looking southwest
2003-025-20 Trench 49, ditch 49016, southeast-facing section
2003-025-21 Trench 49, looking southwest
2003-025-22 Trench 20, looking north
2003-025-23 Trench 21, looking north
2003-025-24 Trench 18, looking north
2003-025-25 Trench 36, post-excavation shot of bath house, looking north-north-west
2003-025-26 Trench 36, post-excavation shot of bath house, looking north-north-west
2003-025-27 Trench 36, post-excavation shot of bath house, looking north-north-west
2003-025-28 Trench 17, looking north
2003-025-29 Trench 16, looking north
2003-025-30 Trench 16, looking north
2003-025-31 Trench 16, looking north
2003-025-32 Trench 33, ditches 33021 and 33023, east-facing section
2003-025-33 Trench 33, ditches 33021 and 33023, east-facing section
2003-025-34 Trench 33, ditches 33021 and 33023, east-facing section
2003-025-35 Trench 19, looking west-north-west

2003-030-01 No negative
2003-030-02 Trench 5, looking southwest
2003-030-03 Trench 10, looking west
2003-030-04 Trench 10, looking west
2003-030-05 Broken land drain, west end of Trench 10, looking northwest
2003-030-06 Trench 43, looking east
2003-030-07 Trench 46, looking northeast
2003-030-08 Trench 46, looking northeast

2003-030-09 Working shot, Trench 46
2003-030-10 Working shot, Trench 46
2003-030-11 Working shot, Trench 46
2003-030-12 Trench 45, looking west
2003-030-13 Blank
2003-030-14 Blank
2003-030-15 Trenches 44 and 45, looking west towards York Minster
2003-030-16 Trenches 44 and 45, looking northwest towards York Minster
2003-030-17 Working shot, Trench 44, looking west
2003-030-18 Trench 44, looking northeast
2003-030-19 Trench 44, looking northeast
2003-030-20 Trench 44, looking northeast
2003-030-21 Trench 44, looking west
2003-030-22 Blurred
2003-030-23 Trench 41, looking west
2003-030-24 Trench 41, looking west
2003-030-25 Trench 42, looking west
2003-030-26 Trench 40, southern half, looking west
2003-030-27 Trench 40, northern half, looking west
2003-030-28 Trench 26, looking northeast
2003-030-29 Trench 26, looking northeast
2003-030-30 Trench 42, gully 42018, south-facing section
2003-030-31 Trench 42, gully 42018, south-facing section
2003-030-32 Trench 42, gully 42014, north-facing section
2003-030-33 Trench 27, looking east
2003-030-34 Trench 24, looking south-east
2003-030-35 Trench 24, looking south-east
2003-030-36 Trench 24, pit 24009, looking northwest
2003-030-37 Trench 24, ?feature 24012 and 24013 looking northeast

2003-052-01 No negative
2003-052-02 Trench 104, looking southwest
2003-052-03 Trench 103, working-shot at western end
2003-052-04 Trench 103, trackway 103004, looking northwest
2003-052-05 Trench 103, trackway 103004, looking northwest
2003-052-06 Trench 103, trackway 103004, looking northwest
2003-052-07 Trench 103, slot 103025, south-south-east-facing section
2003-052-08 Trench 103, slot 103025, south-south-east-facing section
2003-052-09 Trench 103, working-shot, excavating trackway 103004
2003-052-10 Trench 103, working-shot, excavating trackway 103004
2003-052-11 Trench 103, working-shot, excavating trackway 103004
2003-052-12 Trench 103, working-shot, excavating trackway 103004
2003-052-13 Trench 103, working-shot, slot 103007
2003-052-14 Trench 103, working-shot, post-hole/pit 103030 and post-hole 103037
2003-052-15 Trench 103, working-shot of post-hole/pit 103033 and post-hole 103035
2003-052-16 Trench 103, blurred working shot
2003-052-17 Trench 105, looking west-south-west
2003-052-18 Trench 105, looking west-south-west

2003-052-19 Trench 106, working shot, looking northeast
2003-052-20 Trench 106, working shot within ditch 106013
2003-052-21 Trench 106, working shot within ditch 106017
2003-052-22 Trench 106, post-excavation shot of Trench 106, looking north-north-west
2003-052-23 Trench 106, post-excavation shot of Trench 106, looking north-north-west
2003-052-24 Trench 106, post-excavation shot of Trench 106, looking north-north-west
2003-052-25 Trench 106, post-excavation shot of ditch 106017, looking north
2003-052-26 Trench 106, post-excavation shot of ditch 106013. looking north
2003-052-27 Trench 110, looking northeast
2003-052-28 Trench 111, looking west
2003-052-29 Trench 112, looking northeast
2003-052-30 Trench 67, looking northeast
2003-052-31 Trench 67, looking northeast
2003-052-32 Trench 75, looking east-north-east
2003-052-33 Trench 75, looking east-north-east
2003-052-34 Trench 74, looking east-north-east
2003-052-35 Trench 74, looking east-north-east

2003-054-01 No negative
2003-054-02 Trench 66, looking east
2003-054-03 Trench 66, looking east
2003-054-04 Trench 65, looking east
2003-054-05 Trench 65, stone filled land drain 65015
2003-054-06 Trench 54, looking west
2003-054-07 Trench 53, looking northeast
2003-054-08 Trench 64, looking east
2003-054-09 Trench 52, looking northeast
2003-054-10 Trench 52, looking northeast
2003-054-11 Trench 54, tree-throw hole 54004, north-facing section
2003-054-12 Trench 54, ditch 54004, looking west, post-excavation shot
2003-054-13 Trench 54, ditch 54004, looking west, post-excavation shot
2003-054-14 Trench 51, looking west
2003-054-15 Trench 51, looking west
2003-054-16 Trench 51, saddle quern and grinding cobble as recovered
2003-054-17 Trench 51, saddle quern and grinding cobble
2003-054-18 Trench 51, other possible quern fragments as recovered
2003-054-19 Trench 76, looking north-north-west
2003-054-20 Trench 76, looking north-north-west
2003-054-21 Trench 77, southern end, looking northeast, with ?furrow 77004
2003-054-22 Trench 77, looking north-north-east
2003-054-23 Trench 51, post-excavation shot of ditch 51003, looking northeast
2003-054-24 Trench 51, post-excavation shot of ditch 51003, looking northeast
2003-054-25 Trench 97, looking northeast
2003-054-26 Trench 97, looking northeast
2003-054-27 Trench 78, looking northwest
2003-054-28 Trench 78, looking northwest
2003-054-29 Trench 81, looking northwest
2003-054-30 Trench 81, looking northwest

2003-054-31 Trench 82, looking northwest
2003-054-32 Trench 82, looking northwest
2003-054-33 Trench 80, looking northwest
2003-054-34 Trench 80, looking northwest
2003-054-35 Trench 82, looking northwest
2003-054-36 Trench 79, looking northwest

2003-055-01 Trench 88, looking northwest
2003-055-02 Trench 88, looking northwest
2003-055-03 Trench 83, looking northwest
2003-055-04 Trench 89, looking northwest
2003-055-05 Trench 90, looking northwest
2003-055-06 Trench 90, looking northwest
2003-055-07 Trench 84, looking northwest
2003-055-08 Trench 84, looking northwest
2003-055-09 Trench 85, looking northwest
2003-055-10 Trench 85, looking northwest
2003-055-11 Trench 86, looking northwest
2003-055-12 Trench 86, looking northwest
2003-055-13 Trench 87, looking northwest
2003-055-14 Trench 87, looking northwest
2003-055-15 Trench 91, looking northwest
2003-055-16 Trench 91, looking northwest
2003-055-17 Trench 92, looking northwest
2003-055-18 Trench 92, looking northwest
2003-055-19 Trench 93, looking northwest
2003-055-20 Trench 93, looking northwest
2003-055-21 Trench 100, looking west
2003-055-22 Trench 100, looking west
2003-055-23 Trench 99, looking west
2003-055-24 Trench 99, looking west
2003-055-25 Trench 98, looking west
2003-055-26 Trench 98, looking west
2003-055-27 Trench 101, looking west
2003-055-28 Trench 101, looking west
2003-055-29 Trench 103, looking west
2003-055-30 Trench 103, looking west
2003-055-31 Trench 103, trackway 103004, looking north-north-west
2003-055-32 Trench 103, trackway 103004, looking north-north-west
2003-055-33 Trench 102, looking west
2003-055-34 Trench 102, looking west
2003-055-35 Trench 103, ditch 103016, east-north-east-facing section
2003-055-36 Trench 103, ditch 103016, east-north-east-facing section

2003-056-01 No negative
2003-056-02 Trench 23, looking west
2003-056-03 Double exposed
2003-056-04 Trench 25, east-facing section of Iron Age pit 25014

2003-056-05 Trench 25, east-facing section of Iron Age pit 25014
2003-056-06 Trench 22, looking west
2003-056-07 Trench 22, looking west
2003-056-08 Trench 22, looking west
2003-056-09 Trench 25, looking west
2003-056-10 Trench 22, gully 22004, looking west-south-west
2003-056-11 Trench 22, gully 22004, looking west
2003-056-12 Trench 22, gully 22004, looking west
2003-056-13 Piece of worked stone in hedge at north end of Fields 8 and 9
2003-056-14 Pieces of worked stone in hedge at north end of Fields 8 and 9
2003-056-15 Trench 56, eastern end after cleaning, looking north-north-west
2003-056-16 Trench 56, middle portion after cleaning, looking north-north-east
2003-056-17 Trench 56, after cleaning, looking northeast
2003-056-18 Trench 56, after cleaning, looking northeast
2003-056-19 Trench 57, post-excavation shot, ditch 57004 and 57012, looking west
2003-056-20 Trench 57, northern half, looking west
2003-056-21 Trench 57, ditch 57004, west-facing section
2003-056-22 Trench 55, looking west
2003-056-23 Trench 55, looking west
2003-056-24 Trench 60, looking west
2003-056-25 Trench 56, structure 56022, looking southwest
2003-056-26 Trench 56, structure 56022, looking southwest
2003-056-27 Trench 58, ditch 58011, working shot, looking northwest
2003-056-28 Double exposure
2003-056-29 Trench 58, western end, looking southwest
2003-056-30 Trench 59, looking northeast
2003-056-31 Trench 63, looking northwest
2003-056-32 Trench 63, looking northwest
2003-056-33 Trench 62, looking northwest
2003-056-34 Trench 62, looking northwest
2003-056-35 Trench 61, looking northwest
2003-056-36 Trench 61, looking northwest

2003-057-01 No negative
2003-057-02 No negative
2003-057-03 Trench 113, looking north-north-west
2003-057-04 Trench 113, looking north-north-west
2003-057-05 Trench 114, looking west-south-west
2003-057-06 Trench 114, southern side, looking west-south-west
2003-057-07 Trench 107, looking west-south-west
2003-057-08 Trench 107, looking west-south-west
2003-057-09 Trench 107, looking east-north-east
2003-057-10 Trench 107, ring ditch 107011, looking northeast
2003-057-11 Trench 107, ditch 107016, south-south-east-facing section
2003-057-12 Trench 107, working shot of ditch 107016, looking north-north-west
2003-057-13 Trench 107, working shot of eastern end of the trench
2003-057-14 Trench 107, ring ditch 107011, working shot
2003-057-15 Trench 107, ring ditch 107011, working shot

2003-057-16 Trench 107, working shot, looking west
2003-057-17 Trench 107, ditch 107029, south-south-east-facing section
2003-057-18 Trench 107, ditch 107029, south-south-east-facing section
2003-057-19 Trench 107, ditch 107029, south-south-east-facing section
2003-057-20 Trench 107, smashed cooking pot in backfill 107015
2003-057-21 Trench 107, smashed cooking pot in backfill 107015
2003-057-22 Trench 107, smashed cooking pot in backfill 107015
2003-057-23 Trench 108, looking west-south-west
2003-057-24 Trench 107, working shot, looking west
2003-057-25 Trench 107, working shot, recording section of ditch 107029
2003-057-26 Trench 107, gully 107023, south-south-east-facing section
2003-057-27 Trench 107, re-cut ditch 107015, north-north-west facing section
2003-057-28 Trench 109, looking west-south-west
2003-057-29 Trench 109, looking west-south-west
2003-057-30 Trench 94, looking northwest
2003-057-31 Trench 94, looking northwest
2003-057-32 Trench 95, looking southeast
2003-057-33 Trench 95, looking southeast
2003-057-34 Trench 95, working shot, recording post-medieval field boundary 95006
2003-057-35 Trench 95, working shot, recording post-medieval field boundary 95006
2003-057-36 Trench 96, looking northwest
2003-057-37 Trench 96, looking northwest

2003-058-01 Trench 12, looking northwest
2003-058-02 Trench 12, looking northwest
2003-058-03 Trench 13, looking northwest
2003-058-04 Trench 13, looking northwest
2003-058-05 Trench 33, eastern end, post-excavation shot, looking northwest
2003-058-06 Trench 33, western end, post-excavation shot, looking west-north-west
2003-058-07 Trench 33, western end, post-excavation shot, looking west-north-west
2003-058-08 Trench 33, post-excavation shot, looking west
2003-058-09 Trench 33, post-excavation shot, looking west
2003-058-10 Trench 15, looking northeast
2003-058-11 Trench 9, looking west
2003-058-12 Trench 9, looking west
2003-058-13 Trench 13, ditch 13015, south-facing section
2003-058-14 Trench 13, ditch 13015, south-facing section
2003-058-15 Trench 13, post-excavation shot, looking northwest
2003-058-16 Trench 11, looking south-west towards pond 11009
2003-058-17 Trench 14, looking northeast
2003-058-18 Trench 14, looking northeast
2003-058-19 Trench 14, looking east
2003-058-20 Trench 11, west end - rising water in pond 11009, looking northwest
2003-058-21 Trench 6, looking southwest
2003-058-22 Trench 6, looking southwest
2003-058-23 Trench 7, looking northeast
2003-058-24 Trench 7, looking northeast
2003-058-25 Trench 8, looking, northeast

2003-058-26 Trench 8, looking northeast
2003-058-27 Trench 2, looking west
2003-058-28 Trench 2, looking west
2003-058-29 Trench 3, looking northeast
2003-058-30 Trench 4, looking west
2003-058-31 Trench 1, looking southwest
2003-058-32 Trench 1, looking southwest
2003-058-33 Trench 1, machined sondage into quarry 1006, southeast-facing section
2003-058-34 Trench 4, after cleaning, looking northwest
2003-058-35 Trench 4, after cleaning, looking northwest
2003-058-36 Trench 5, looking southwest

2003-059-01 Trench 115, looking west
2003-059-02 Trench 115, looking west
2003-059-03 Trench 115, looking west
2003-059-04 Trench 115, looking west

2003-060-01 Trench 122, looking north-north-west
2003-060-02 Trench 122, looking north-north-west
2003-060-03 Trench 124, looking north-north-west
2003-060-04 Trench 124, looking north-north-west
2003-060-05 Trench 121, looking north-north-west
2003-060-06 Trench 121, looking north-north-west
2003-060-07 Trench 122, south-south-east-facing section
2003-060-08 Trench 122, south-south-east-facing section
2003-060-09 Trench 120, looking west-south-west
2003-060-10 Trench 120, looking west-south-west
2003-060-11 Trench 120, looking west-south-west
2003-060-12 Trench 120, looking west-south-west
2003-060-13 Trench 123, looking west-south-west
2003-060-14 Trench 123, looking west-south-west
2003-060-15 Blank
2003-060-16 Trench 125, looking south-south-east
2003-060-17 Trench 125, looking south-south-east

16.2 Slides

2003-10-22 Trench 36, working shot of Roman building looking west
2003-10-23 Trench 36, working shot of excavated Roman building looking north
2003-10-24 Trench 36, working shot of excavated Roman building, looking northeast

2003-11-01 Trench 36, post-excavation shot of Roman building, looking northeast
2003-11-02 Trench 36, detailed shot of hypocaust, looking north
2003-11-03 Trench 36, detailed shot of hypocaust, looking north
2003-11-04 Trench 36, working shot of Roman building, looking northeast
2003-11-05 Trench 36, detail of foundations 36053 and 36055
2003-11-06 Trench 36, working shot of Roman building, looking southeast
2003-11-07 Trench 36, votive pots in-situ

2003-11-08 Trench 36, pre-excavation shot of Roman building looking northeast

16.3 Digital Images

(NB - All digital images from 1069-01 up to 1069-23 were from field walking and desk-top phases)

1069-23 Trench 36, after cleaning, structures 36053 and 36055
1069-24 Trench 36, after cleaning, Roman building looking northeast
1069-25 Hypocaust *pila* 36072 in Roman bath house in Trench 36
1069-26 Trench 36 in its setting, looking southeast
1069-27 Trench 36 Votive pots 36003-7 *in-situ*
1069-28 Trench 36, Roman building after cleaning, looking northeast
1069-29 Trench 36, Roman building after cleaning, looking north
1069-30 Trench 36, Roman building after cleaning, looking west
1069-31 Trench 36, Roman building post-excavation shot, looking northeast
1069-32 Trench 36, Roman building working-shot, looking northeast
1069-33 Trench 36, Roman building working-shot, looking southeast
1069-34 Trench 36, Roman hypocaust *pilae*, looking northeast
1069-35 Trench 36, Roman hypocaust *pilae*, looking northeast
1069-36 Jet crucifix (sf113) from context 50000
1069-37 Jet crucifix (sf113) from context 50000
1069-38 Spindle whorl (sf161) from context 25013
1069-39 Spindle whorl (sf161) from context 25013

17. ACKNOWLEDGEMENTS

Evaluation Director	Neil Macnab
Evaluation Assistant Director (Main Area)	Toby Kendall
Evaluation Assistant Director (Area E)	Ben Reeves
Site Photography	Michael Andrews Toby Kendal Neil Macnab Ben Reeves
Excavation Team	Karen Bolchover Chris Gifford Howard Gill Elizabeth Humble Tim Kearsey Michael Keech Ian Milsted Rebecca Pullen Daniel Aguaiz Ramirez Elena Lobo Salcedo Javier Naranjo Santana Nigel Steel
Survey Team	Michael Andrews Rhona Finlayson
Pottery	Ailsa Mainman
Small Finds	Nicola Rodgers
Ceramic Building Material	Jane McComish
Coins	Craig Barclay (Hull Museum Services)
Worked Stone	Jane McComish
Conservation Assessment	Julie Jones Erica Paterson Jim Spriggs
Environmental Assessment	John Carrott Deborah Jaques Kathryn Johnson (Palaeoecology Research Services)

	Dr. Alan Hall Dr. Harry Kenward The University of York Department of Archaeology (English Heritage Research Fellows)
Illustrations	Lesley Collett Russell Marwood Ben Reeves
Artefact Photography	Michael Andrews
Report Production	Russell Marwood
Editor	Dr. Patrick Ottaway