



HESLINGTON EAST, YORK: A SECOND ADDENDUM to the ARCHAEOLOGICAL REMAINS MANAGEMENT PLAN

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Cover picture: excavation of late Iron Age ditch in Area A2, October 2008

Abbreviations

ARMP	Heslington East Archaeological Remains Management Plan (P. Ottaway, October 2006)
MAP2	Management of Archaeological Projects (English Heritage, 1990)
YAT	York Archaeological Trust

1. Introduction

- 1.1 This document is a second addendum to the *Archaeological Remains Management Plan* (ARMP) for Heslington East. The original plan was prepared in December 2006 and the first addendum was issued in October 2008, towards the end of the archaeological investigation in advance of the Phase 1 development. This document should be read alongside the first two.
- 1.2 In Section 8.1 of the ARMP provision was specifically made for ‘...feedback and review during the project and thereby the most efficient use of resources.’ This document addresses this provision in light of the last two years of investigation. It is also intended to identify any remaining fieldwork requirements in advance of development on the site, review research objectives for that fieldwork and set out proposals for publication of the results of the archaeological investigation.
- 1.3 This document has been written by Dr Patrick Ottaway (*PJO Archaeology*), Archaeological Consultant to the University of York.

2. Fieldwork Summary

- 2.1 A programme of evaluation was undertaken by York Archaeological Trust in 2003-4. As a result three areas of high archaeological significance (A1-3) and seven areas of medium archaeological significance (B1-7) were identified; the rest of the site was deemed to have low archaeological significance (Fig.1).
- 2.2 Fieldwork in advance of the Phase 1 development at Heslington East in the period January – November 2008, undertaken by York Archaeological Trust (YAT), involved, as per the brief based on the ARMP, the following:
- Selective borehole survey;
 - Further geophysical survey;
 - Excavation of additional evaluation trenches in areas of medium archaeological significance, B1-4 and B7;
 - Full excavation of the areas of high archaeological significance: A1 and A2 (Fig.2);
 - Watching brief in areas of landscaping.
- 2.3 In addition to work specified by the brief, further evaluation (by YAT) has taken place in:
- Field 2 (west of B2) – site of TV and Film Building;
 - Fields 3 and 6 – site of traffic interchange;
 - Field 4 – Area B4
 - Field 5A – site of new roundabout.

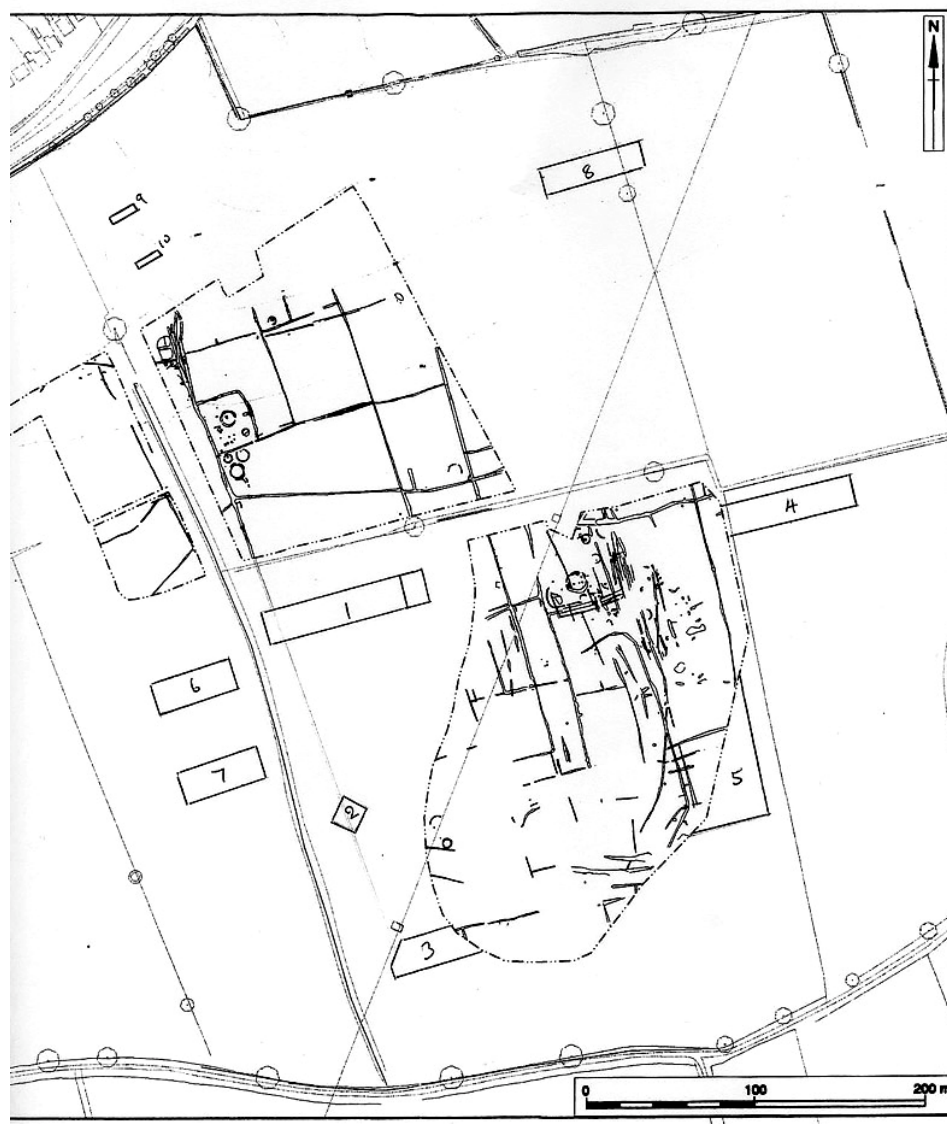


Fig.2 Plan of Areas A1-2 and additional trenches excavated by YAT in 2008 showing late Iron Age and other features

2.4 In advance of the extraction of construction materials evaluation (by YAT) took place as follows:

- Field 7 (December 2008);
- Area B6, Field 10 (December 2009);
- Area B5, Field 8 (March 2010).

2.5 In advance of the Phase 2 development investigation has been undertaken 2008-2010 in Area A3 (Fields 8-9) by the Department of Archaeology of York University (Figs 3-4). This has involved geophysical survey and excavation as a training dig and Community Archaeology project. The trenches are referred to below by year and letter code: e.g. 08A etc.

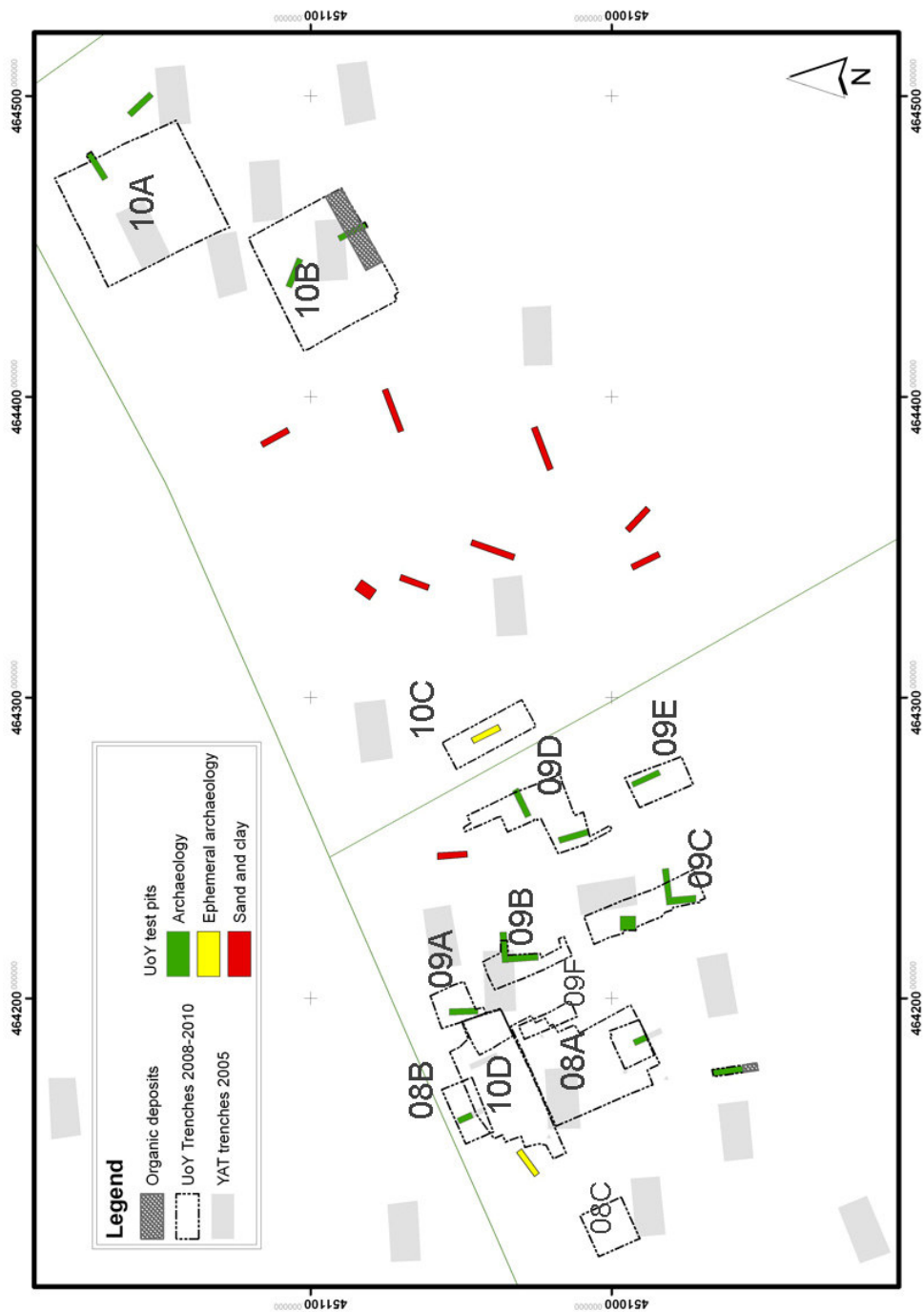


Fig.3 Plan of Area A3 trenches in Field 8 excavated by the Department of Archaeology, University of York (2008-10)

- 2.6 The Department is planning to undertake one more season of fieldwork in 2011 which will deal largely with Trench 10D and if feasible with completion of the northern part of 10B.

3. Results of excavation in advance of Phase 1 development

- 3.1 YAT has prepared draft Assessment Reports on their work in advance of Phase 1 and individual reports on the supplementary work listed in 2.4. What follows is a brief summary of the archaeological discoveries based on those reports.

Geomorphology of early landforms

- 3.2 A very complex Holocene landscape sequence exists at Heslington East, much of which predates the conventional archaeological landscapes. In order to understand the sequence, a sampling strategy was put in place with the advice of geoarchaeology specialist Dr Chris Carey of Oxford Archaeology. Three areas were studied as described below.
- 3.3 In Area B1 (Field 5A) two mechanically excavated transects were dug across what proved to be a kettle hole, a naturally formed silt and peat filled depression in the moraine; column samples were taken.
- 3.4 In Area A1 sampling involved recording and sub-sampling an extensive series of gouge auger holes and four mechanically excavated trenches, aligned east-west, 2m wide at base and in total over 100m in length.
- 3.5 In Area A2 sampling involved further gouge augering and two mechanically excavated trenches.
- 3.6 As a result of sampling three geomorphic zones were identified:
1. the kettlehole in Area B1
 2. the northern half of Area A1
 3. the southern half of Area A1 and Area A2

Zone 1: Kettle hole

- 3.7 In Area B1 the transects revealed a sequence of thick peat, silt and other deposits to a depth of c.2.5m below modern level (Pl.1). The sequence cannot as yet be dated; this will be addressed by radiocarbon dating in the analysis stage of the project.



Plate 1 View north-east of transects through the kettle hole in Area B1

Zone 2: Area A1 (north)

- 3.8 In the early Holocene a wide channel (or channels), at least 3-4m deep, was incised into the underlying Pleistocene deposits creating a localised flood plain. This was subject to a fluctuating depositional and hydrological regime resulting from the high and low flow of water from north – south. About 1.5m - 2m below the surface stripped of overburden there was a layer composed largely of well-preserved tree roots and branches. This layer has been C14 dated to c.1500 – 1000 BC, i.e. the Mid - Later Bronze Age. By the Late Iron Age the flow level had clearly been much reduced and the channel was largely infilled.
- 3.9 Lidar data suggest that a source of water which formed the palaeochannel lay in what is now the Badger Hill Estate on top of the moraine; a dip in the modern landform opposite the estate opposite the estate – no longer readily perceptible – appeared to confirm this.

Zone 3: Area A1 (south) and Area A2

- 3.10 The drainage of water in the early Holocene extended south into Area A2, although at the bottom of the slope of the moraine it ran into shallow braided channels which were probably infilled by the end of the Bronze Age.

Early Prehistory (Neolithic – Bronze Age)

Lithics



Plate 2 Neolithic hand axe from Area A2

- 3.11 In addition to those found in fieldwalking during the evaluation stage of the project, 157 struck and utilised pieces of flint were found, largely in pits and ditches in the north-western part of Area A1. They are usually in an unabraded condition suggesting discard in the immediate area. Assessment by Peter Makey indicates that whilst there is a small amount of Mesolithic material, the majority belong to the Neolithic – Early Bronze Age (as did the material from the fieldwalking). An important artefact from a small pit in Area 2 was an incomplete ground stone Late Neolithic axe in a non-local limestone which has yet to be conclusively identified (Pl.2).

Landscape features (Fig.2)

- 3.12 The reduced flow of water which finally filled the palaeochannel by the Late Iron Age may have been caused by an increased release of silts arising from woodland clearance and arable agriculture. During the Bronze Age drainage was probably fed into a number of channels and spring points. One spring point, or 'water hole', probably active throughout the Bronze Age – Iron Age was located in the north-west corner of Area A1.



Plate 3 Area A2 view south, excavation of ditches in progress

- 3.13 Adjacent to the water hole were a number of cut features on a north-north-west / south-south-east alignment, some of which may have been dug to encourage drainage, others perhaps for cult purposes. Cult-related features may include a pit containing pieces of a hollowed-out wooden cylinder, C14 dated to 930-780 BC (the Late Bronze Age).
- 3.15 In Area 2 two substantial elongated curvilinear features were found on a more or less north – south axis along with a number of other smaller features. They predate the Iron Age ditched enclosures (see below) and belong to a period after the infilling of the palaeochannels, although they contained no diagnostic cultural material.
- 3.16 Apparently isolated on the northern edge of Field 3 an Early Bronze Age cremation urn was found during construction work. A watching brief in the area failed to locate any further archaeological features.

Iron Age

- 3.17 In Area A1 further features including ditches on the same general north-north-east / south-south-west alignment as earlier features were dug adjacent to the water hole, either in the Late Bronze Age or Early Iron Age.

- 3.18 In the Mid-Late Iron Age the prevailing north-north-east / south-south-west alignment defined by earlier features was re-stated by new ditches and others ran east-north-east / west-south-west across the site. These ditches defined the enclosures of a field system which also extended south into Area A2 (Pl.3).
- 3.19 In Area A1 the remains of at least seven roundhouses, represented by shallow circular gullies, were found. Two were located in a small ditched enclosure and three others were sited at the western end of one of the larger enclosures. Few internal features have been recorded, but most, if not all, of these were presumably dwellings. In A2 a distinct rectangular enclosure on the north side contained the remains of a large roundhouse (diameter up to 12.5m) placed near the enclosure's southern entrance; there were also traces of perhaps 3-4 other roundhouses of smaller size.
- 3.20 The backfills of the ditches and roundhouse gullies have produced a large assemblage of pottery. The YAT Assessment has suggested a Mid-Late Iron Age date perhaps of the 3rd centuries BC and later. Amongst the pottery were three fragments of ceramic crucible, probably derived from metalworking.

Human skull

- 3.21 The most important single find of Iron Age date, C14 dated to the mid-first century BC, was a human skull in a shallow feature near the water hole. Within the skull were the mineralised, but well-preserved remains of the brain. This has been the subject of a dedicated research project led by Sonia O'Connor at Bradford University. A report will appear in the *Journal of Archaeological Science*.
- 3.22 In a localised area on the western edge of Area A1 a number of deposits with large quantities of ferrous slag were found. Assessment found that this derived from smelting.
- 3.23 Other than pottery and ferrous slag, there has been little else in the way of artefacts from Iron Age contexts except for a certain amount of wood, largely unworked, preserved by waterlogging.

Roman period

- 3.24 As predicted by the evaluation, relatively little of Roman date was found in Areas A1 or A2 compared to the quantity of remains of earlier periods, although the upper fills of a number of ditches have produced Roman pottery, suggesting that the field system may have survived until the late 1st or early 2nd centuries.
- 3.25 In Area A1, in a deposit above the filled-in water hole, a small hoard of five mid-fourth century coins was found which, like the Iron Age skull, hint at the feature being a focus for cult activity.

In addition, at the western end of the 'arm' extending from the west side of A1 there was an apparently isolated, urned cremation burial.

- 3.26 Of Roman date in the southern part of Area A2 there was a large pit, apparently served by channels on the north and south sides, all on the same alignment as the field system. The pit base sloped down from south to north and was covered with five successive layers of cobbles, presumably to assist access to what was probably a water hole for beasts. To the north the channel ran as far as two small shallow features of rectangular plan connected by a short gully; no identification for them is immediately apparent (Pl.4).



Plate 4 View north of figure 8-shaped feature in Area A2

Post-Roman

- 3.27 There was no excavated evidence for activity after the Roman period apart from furrows of possible medieval origin and numerous land drains of the eighteenth - twentieth centuries.

4. Results of excavation in advance of Phase 2 development

Geomorphology and Early Prehistoric

- 4.1 In trenches excavated in Area A3 deposits have been encountered which are probably the upper infilling of palaeochannels. No research has been undertaken on them, but this should be addressed before the archaeology of the area can be considered complete (see 7.7 below).
- 4.2 The further evaluation trenches in Areas B5 and B6 reached a depth at which deposits recognisable as belonging to palaeochannels were encountered, but deep excavation was not possible due to the high water table (PI.5). In Area B6, Evaluation Trench 20 (Fig.6) a timber posts was found in probable palaeochannel deposits, although nothing of its context could be determined. It was dated by C14 to 400-200 BC (Iron Age). A C14 date was also taken on some root material which was Neolithic.



Plate 5 Section through probable palaeochannel deposits in Area B5

Iron Age - Roman period (Fig.4)

Field 8

- 4.3 In Field 8 there appears to be little evidence for Iron Age activity except, perhaps, for a curving gully at the southern end of Trench 09C.

- 4.4 Remains of a Roman farmstead have been revealed in the Department's excavation, principally in Trenches 08A, 08B and 10D. In Trench 08A remains of a timber building containing a small tile-built hypocaust, first identified in Evaluation Trench 36, were fully excavated. In the southern part of Trench 08A there were a number of features representing occupation, including spreads of burnt cobbles and post-holes. On the north side of Trench 08A there was a zone of intercutting ditches aligned north-north-west / south-south-east or east-north-east / west-south-west.
- 4.5 In Trench 10D excavation is incomplete. However, remains of what may be another building have been partially excavated, represented by what appears to be an area of collapsed roofing made up of stone slabs and a number of other possible structural features. Other features in Trench 10D include, in the north-west corner, a shallow stone-lined pit oval in plan containing burnt material, possibly a drying or malting kiln for grain.

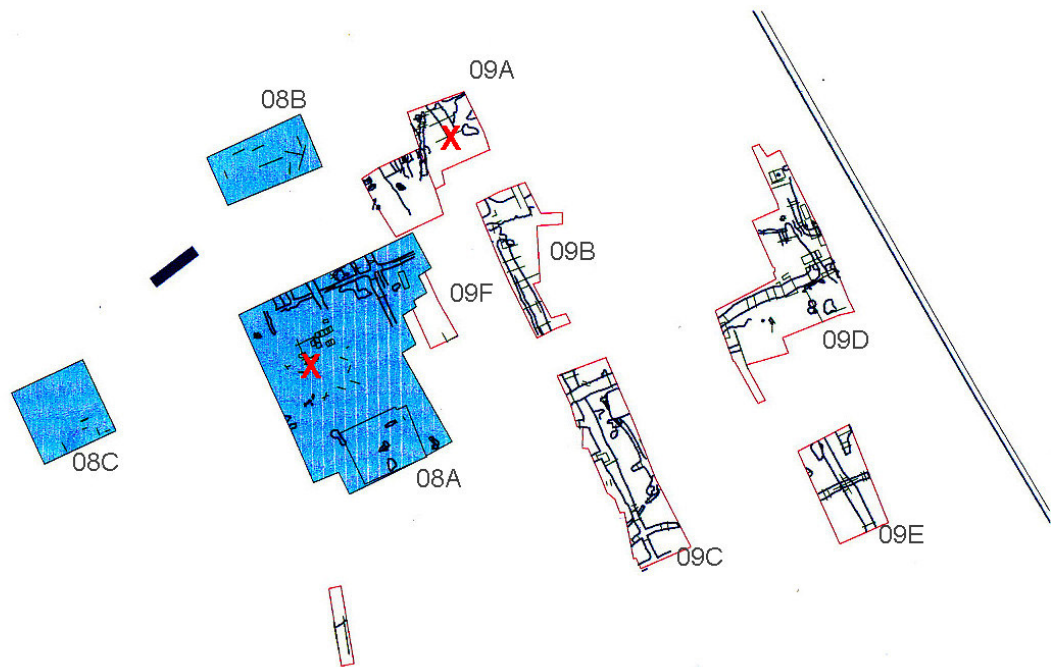


Fig.4 Plan of Area A3 showing principal archaeological features in Field 8 excavated by the Department of Archaeology 2008-9 (location of burials = X)

- 4.6 To the north of the farmstead (Trenches 08B and 10D), perhaps serving as a boundary, was a substantial east-west ditch. A return on the west side may be represented another ditch,

running north-north-west / south-south-east, found in Evaluation Trench 35 and probably appearing on the geophysical survey running towards the southern edge of Area A3. .

- 4.7 In trenches east of the farmstead a complex of ditches, either north-north-west / south-south-east or east-north-east / west-south-west have been found which probably defined enclosures related to the farmstead. In Trench 09B an entrance through a north-north-west / south-south-east ditch was marked by two large post-holes.
- 4.8 West of the farmstead (Trench 08C) a substantial cobble foundation, c.5m square, was found. This was undated, but is presumed to be Roman. It may have been the base of a tower, but the function and context of the feature remain uncertain.
- 4.9 Three human inhumation burials, late Roman in date, have been found, two on the east side of Trench 10D and the other near the hypocaust building in Trench A08.
- 4.10 Near the centre of Field 8, south of 08A, a narrow test trench located deposits of waterlogged material with a high organic content. It is possible that they surround another springhead similar to that identified in Evaluation Trench 33, a little to the east. An attempt to determine the extent of the deposits was undertaken by augering and further excavation by On Site Archaeology is under way at the time of writing. This has so far produced a Roman stone and timber-lined well and a number of other cut features (Pl.6).



Plate 6 Field 8: Roman well excavated in November 2010

Field 9

- 4.11 In Trench 10A excavations by the Department located a few ditches, thought to be Roman on one or other of the prevailing alignments seen elsewhere.
- 4.12 In the northern part of Trench 10B excavations have revealed remains of what may be an Iron Age roundhouse – as yet not fully excavated - and a complex of other small features, probably Iron Age or Roman. In the centre and south of Trench 10B a major ditch running east-north-east / west-south-west was seen to run into an extensive area of waterlogged deposits with a high organic content which probably surround another springhead. They were previously located in Evaluation Trench 60, but not extensively excavated. The approximate extent of these deposits was plotted by augering.
- 4.13 Subsequent to augering an area 40m (E-W) x 20m (N-S) overlapping the southern half of Trench 10B and extending it 10m to the east was set out (Fig.5). Excavation by On Site Archaeology has now fully defined the waterlogged and organic deposits, and identified a number of features which are thought to be Bronze Age on the basis of the tooling on a cylindrical object of alder wood, probably a well lining, found in the latest feature in the sequence.

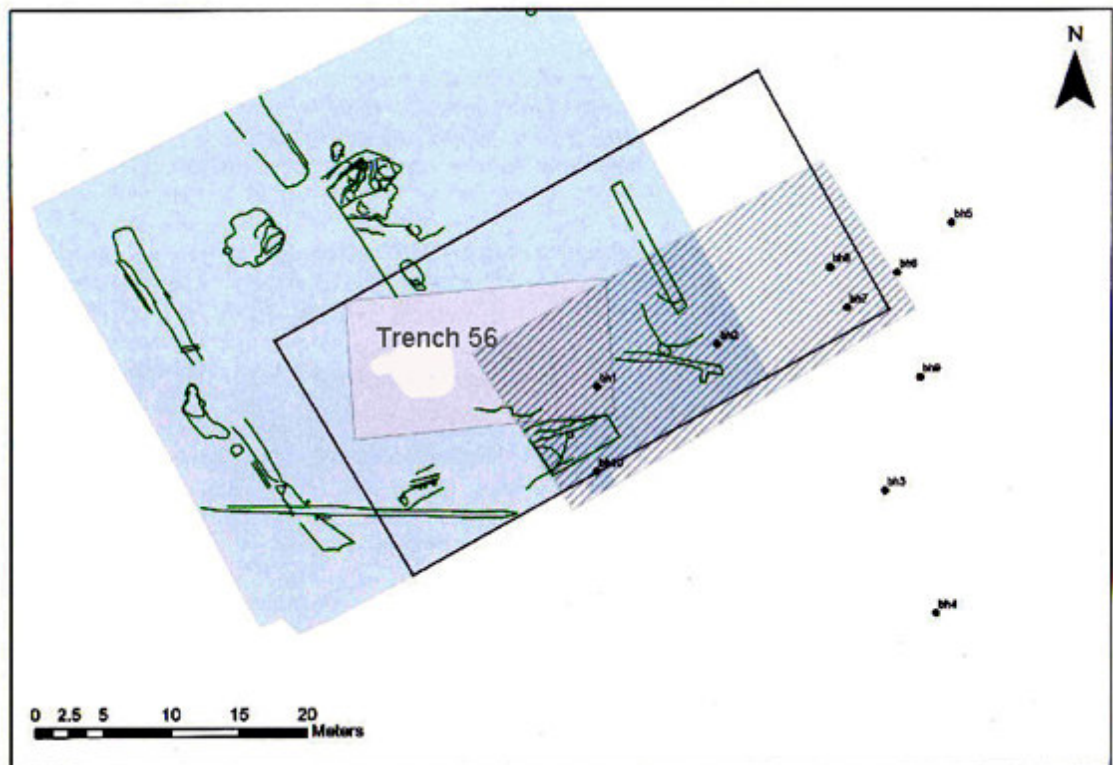


Fig.5 Plan showing location of Trench (black outline) in Field 9 currently under excavation by On Site Archaeology. Dept of Archaeology Trench 10B toned blue, area of waterlogged deposits identified by excavation and augering shown hatched.

- 4.14 Two large vertical wooden posts and other timbers laid horizontally were found well preserved in the major ditch referred to above which appear to be the remains of a structure perhaps associated with the springhead.

Anglian period

- 4.15 In Field 8 the area of the farmstead has produced Anglian pottery, although not in a recognisably Anglian context. An Anglian brooch has been found in Field 9.

5. Review of Research Objectives

ARMP Research Topics

- 5.1 In the original ARMP four research topics for Heslington East as a whole were identified as follows:

1. Landscape and environment in early prehistory (meaning primarily the Neolithic period and Bronze Age);
2. Iron Age into Roman: the processes of change;
3. Cult and ritual in a rural context;
4. Late Roman – post-Roman: the processes of change.

Topic 1: Landscape and environment in early prehistory

- 5.2 In ARMP it was noted (Section 7.2):

The Neolithic period and Bronze Age in the immediate York area, and to a large extent in the Vale of York, are ... known primarily from the distribution of artefacts. Any opportunity to investigate sites where activity or settlement took place would therefore be of the greatest interest. It is at present unclear, however, what potential exists at Heslington East.

Unexpectedly high potential for understanding the early prehistoric landscape has been revealed by the excavations, especially in Areas A1 and A2, but also in other areas including B6 and latterly in Field 9. A sequence of morphological development of the landscape from the immediate post-Glacial to the Iron Age has emerged. Particular features of importance are the palaeochannels which probably cover much of the site, the water hole and related features in the north-western part of A1, and the kettle hole in Area B1.

- 5.3 The ARMP also noted (referring to the 2003-4 evaluation trenches):

Of greater obvious research potential is the probable dry valley or palaeochannel identified in Field 3 (Trenches 13 and 14) which in Trench 13 was associated with the pottery of late Bronze Age / early Iron Age date... Although preservation of organic material in the feature was not outstanding, the opportunity to examine the palaeoenvironment of the prehistoric period in the Vale of York is very important, especially if deposits can be dated.

Deposits with the capacity to address the palaeoenvironment, primarily for the Bronze Age – Iron Age have been identified in the palaeochannels, in the water hole in Area A1, potentially, in the kettlehole in Area B1 and latterly in Field 9. However, assessment of samples suggests that preservation of organic matter is variable; a full study will take place in the analysis stage of the project.

5.4 Three specific questions were posed in the ARMP for Topic 1.

1. Do remains of landscape management from early prehistory survive on the site?
2. What is the context for the late Bronze Age / early Iron Age pottery? Does a settlement of this period survive on the site?
3. What can the organic material in the dry valley tell us about the environmental history of the area?

5.5 Brief answers to these questions are as follows:

1. There were remains of landscape management from early prehistory, primarily in the form of the water hole and related ditches and other cut features in Areas A1 and A2. Latterly further evidence is emerging from ongoing Field 9 excavations.
2. The Late Bronze Age / Early Iron Age pottery (of which some additional sherds were found in the excavation of A1) was probably deposited at the time when the palaeochannels were features of the landscape and the water hole was already in use. No other settlement evidence for the period has been found.
3. This question has been superseded in the sense that what was described as a dry valley has been redefined as part of a palaeochannel. Organic material comes from some of its fill deposits. Assessment suggests that there is some limited potential, based on plant material, for illustrating the early prehistoric environmental history of the area, but this will be fully addressed in the analysis stage.

Topic 2: Iron Age into Roman: the processes of change

5.6 The presence of Roman pottery in the upper ditch fills of the Iron Age field system in Areas A1 – A2 suggests that it was passing out of use by the late 1st – early 2nd centuries AD and possibly giving way to some other form of management regime. The water hole in Area A2 suggests continuing use of this area, perhaps as cattle and sheep pasture. As yet it has not been established if there was another Iron Age field system in Area A3 (Fields 8-9) on the higher ground, but if that was the case then there should be the potential to provide further evidence for the Iron Age – Roman transition. Area A3 has, however, produced a number of Roman ditches.

5.7 For Topic 2 seven questions were posed in the ARMP:

1. Can a distinctive late Iron Age landscape be identified?
2. Did this Iron Age landscape survive unaltered after the Roman Conquest and if so for how long?
3. What changes – if any – were made to the Iron Age landscape in the Roman period? Do they represent changes in the agricultural regime, in terms of type of farming or intensity of exploitation of the land?
4. When did Rome's impact as revealed in material culture begin to take effect? – is the early second century date already proposed for Heslington East valid?
5. What are the implications of the introduction of Romanised material culture? Do they mean Heslington East and surrounding area were now integrated into a Romanised economic system geared to supplying the fortress and town with agricultural products, and receiving manufactured and traded goods in return?
6. Did all commodities reaching the site come from York itself or is there evidence for trade networks which bypassed York? If so what light does this throw on York's role in the local economy?
7. Are changes in the economy and society of the area manifested in characteristically Romanised displays of status such as the construction of a villa?

5.8 Brief answers to these questions are as follows:

1. A distinctive Iron Age landscape has been identified in Areas A1-2, perhaps with its origin in the Middle rather than Late Iron Age, although the YAT Assessment did not establish this conclusively.
2. The Iron Age landscape may have survived for a short while after the Roman Conquest but the ditches had probably silted up by the end of the 1st century or beginning of the 2nd century.
3. Abandonment of the field system in the early Roman period may represent changes in the agricultural regime with a shift from arable to pasture.
4. As yet it is not possible to be definitive about the date of introduction of Roman material culture – for all Areas this will require further work on the pottery at the analysis stage.

5-6. Until the pottery from all areas of Heslington East is analysed it will not be possible to take a view about the site's place in the local economic system and in particular in local trade networks.

7. The most striking evidence for display of what might be thought of as 'Romanised status' remains the hypocaust in Field 9. However, at present there is little clear evidence for an unusual suite of material culture which could not be found on similar Romano-British farmsteads in the region.

One might add that the cremation burial in Area A1 represents display of Romanised status in the sense of an acceptance of new ideas on mortuary practice; cremation was virtually unknown in the region before the Roman conquest.

Topic 3: Cult and ritual in a rural context

5.9 Discussion of Topic 3 in the original ARMP was largely in terms of the Roman period. Although, it is now clear that the building with a hypocaust was not part of a shrine, it is possible to give this topic a strong pre-Roman dimension, especially as a result of discoveries in and around the water hole in Area A1.

Specific questions posed in the ARMP were:

1. To what extent is there evidence for prehistoric and Roman cult and ritual activity at Heslington East?
2. What was the relationship between cult and ritual activity and the landscape? – was it solely focused on the spring line on the northern side of the site, or did other features play a part?
3. How was cult and ritual activity organised in the sense of structures of various forms and ritual deposits of artefacts and animal remains?
4. Is there any distinctive patterning in the ritual deposits from relevant parts of the site which informs the character of cult and ritual activity at Heslington East?

5.10 Brief answers to these questions are as follows:

1. The evidence for the prehistoric period is good. The water hole in Area A1 was probably a focus for cult and ritual for some considerable period. This was represented most strikingly, perhaps, by the human skull of Iron Age date buried nearby. Other features, such as that containing the timber cylinder, may also be shown to have contained 'structured' deposits with a cult aspect, but this requires further work at the analysis stage. For the Roman period there is the small coin hoard from above the water hole to set alongside the small Hadrianic hoard

found adjacent to a possible springhead in Evaluation Trench 33 in Area A3. Five small pots found buried near the hypocaust may have been a ritual deposit.

Aspects of cult and ritual in the Roman world relate to death and burial, but there is, as yet, little to be said in this respect on the basis of the cremation burial from A1 and the three inhumations from A3.

2. There is clear evidence for the status of the water hole in A1 as a focus for cult practice, but as yet there is little to add for Area A3 in addition to what was found in the evaluation which produced a few animal burials, perhaps buried in a cult context, and the small coin hoard, referred to above, buried near a possible spring head. The current excavation of areas of waterlogged deposits on the spring line may reveal further evidence.

3-4. A variety of possible structured deposits have been found in the north-western part of Area A1 which suggest some organisation of cult and related spatial patterning with the water hole acting as a focus. The evidence will, however, need to be carefully evaluated in analysis.

Topic 4: Late Roman – post-Roman: the processes of change

- 5.11 As noted in the first addendum, little in Areas A1 and A2 was found which relates to the late Roman or immediate post-Roman periods. At present the questions posed in the ARMP cannot be answered. However, the Department of Archaeology's excavations in Area A3 have produced three burials thought to be late Roman. They have also produced an early Anglian brooch and some pottery which may also be Anglian, but there is as yet no clear context for the material and it is not possible to answer the question about an Anglian presence posed in the ARMP.
- 5.12 The YAT assessment notes that the earliest post-Roman pottery from the Area A1-A2 excavations was 11th - 12th century, but there was very little. It is not clear whether the ridge and furrow, of which traces were recorded in geophysics and excavation, is of this or an earlier origin.
- 5.13 Some continuity of land management from the Roman to the medieval and post-medieval periods is suggested by the fact that elements of the landscape, as recorded on the earliest OS map (mid- 19th century), of which parts remained extant until the beginning of the development, appear to correspond to elements of the Iron Age landscape. Not only did the north-south / east-west alignment of field boundaries survive, but one can point to such aspects as the close correspondence of the east – west ditch on the north side of Area A2 with the boundary between Fields 3 and 6, and its exact correspondence with the boundary of Fields 4 and 6.

6. New research topics

6.1 In the ARMP addendum of 2008 two new research topics were identified:

- Early land forms: the palaeochannels;
- Iron Age metalworking.

The former remains an important topic for further research, although it has been shown that there is little scope for research on the latter.

6.2 In light of the work in the last two years another new research topic may be identified as:

- the waterlogged organic deposits in Area A3: context and origins.

Early land forms

6.2 Dr Carey's report on the geoarchaeological investigation of Areas A1 and A2 is now available as part of the YAT Assessment Report and has been summarised above. Further work on geomorphology using the deposits from the kettle hole in Area B1 and palaeochannels will form part of the analysis stage of the project.

6.3 Since Carey's report was completed further palaeochannel deposits have been encountered in evaluation of B5 and B6 and it may now be concluded that there is a palaeochannel landscape covering much of the Heslington East site. It is clear that there is much still to learn about the early post-glacial landscape at Heslington East and potentially its use and management by early human communities.

6.4 An evaluation of the early Holocene deposits on Area A3 has been recommended above. However, an appropriate context for a detailed investigation may be a long running research project in an area of the site where there is no development pressure and for which independent funding can be sought.

Metalworking

6.5 Subsequent to the first Addendum a small area immediately west of Area A1 was examined in an attempt to reveal more of the ironworking related deposits encountered in the main excavation. In the event little of interest was revealed.

Waterlogged deposits in Area A3

6.6 In the brief for the ongoing excavation of these deposits in A3, possibly surrounding springheads, the objectives are to:

- fully define the extent of organic deposits in the two areas;
- establish the relationship between the organic deposits and any other archaeological features or deposits;
- record, date and sample all archaeological features and deposits;
- confirm the reasons for good organic preservation.

7. Further fieldwork: scope and objectives

Commercial mitigation

7.1 In that part of the site at Heslington East developed in Phase 1 it is not anticipated that any further development with a potential impact on archaeological remains will take place, but in advance of Phase 2 it is anticipated that there will further potential impacts primarily in Area A3, but also in B6.

Area A3 (Fig.6)

- Extension of the northern service road to the east (it also runs through B6, although no archaeological remains now survive on the road line after sand extraction) and a short stretch of another road approaching from the south which will join the service road at a roundabout;
- An additional car park south of the service road at the eastern end of A3.

Area B6

- Football pitch.

Area of low archaeological significance

- Biomass boiler adjacent to the existing interchange car park.

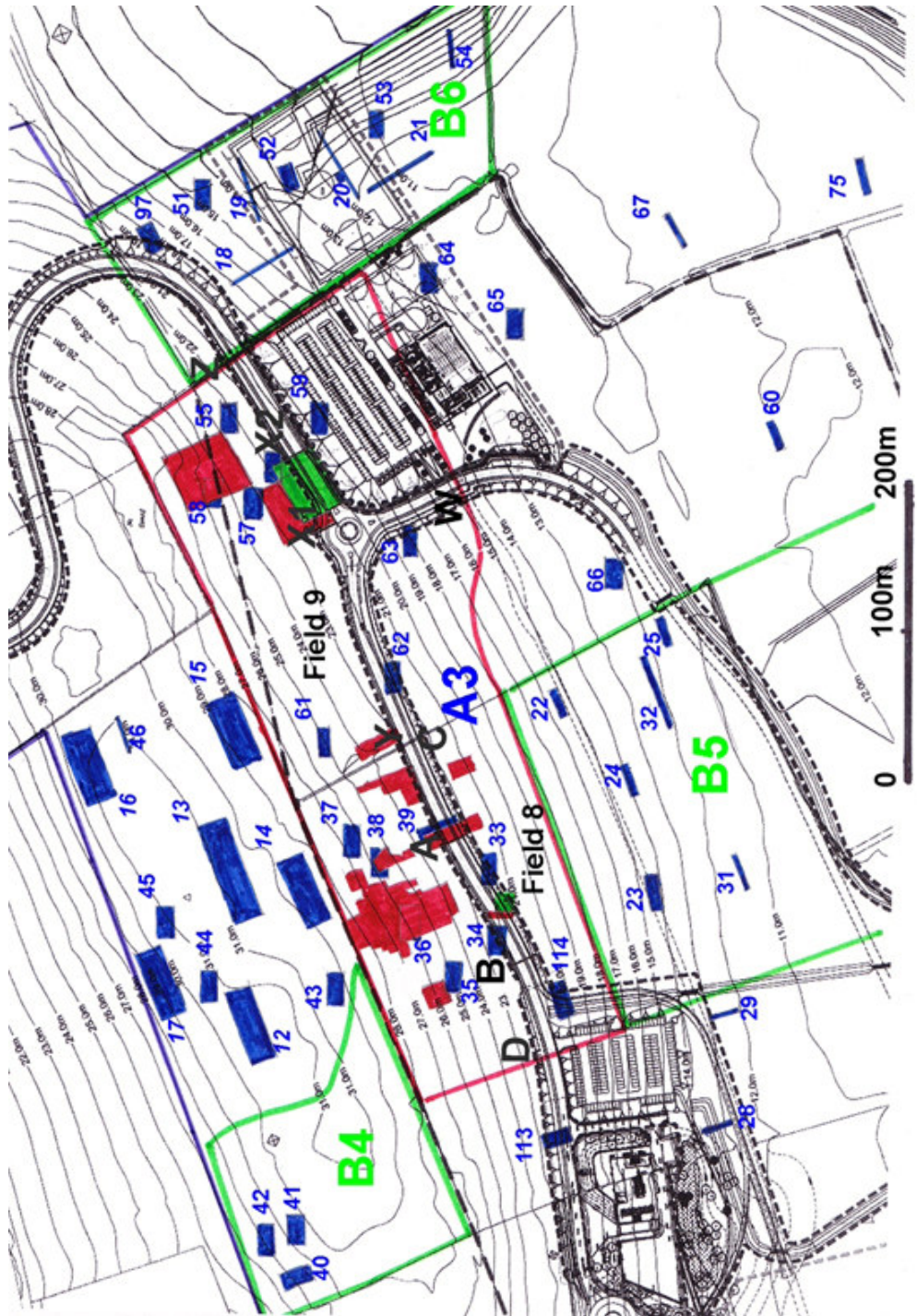


Fig.6 Plan showing line of northern service road and other development features, areas of archaeological significance, and areas of excavation. YAT evaluation trenches: blue (Roman numbers 2003-4, italic numbers 2007-10); Department of Archaeology trenches: red; On Site Archaeology trenches: green. Purple line = edge of Application Area

The northern service road

- 7.2 Information supplied by the University shows the road corridor to be c.17.2m wide between the western edge of A3 and roundabout in Field 9 (distance of c.400m), and c.8.6m wide between the roundabout and eastern edge of Field 9 / Area A3 (distance of c.100m). To take account of minor variations during construction, for purposes of archaeology the former width will be taken to be 20m and the latter 10m.
- 7.3 In order to address the mitigation of the impact of road and related structures in Area A3, the following fieldwork trenches will be undertaken by the commercial contractor (location of areas as per Fig.6):

Field 8

- A (western edge of University trench 09C) – B (western edge of YAT Evaluation Trench 34) plus re-excavation of YAT Evaluation Trenches 33 and 34: c. 90m x 20m (1720m²);
- A-C (E. Field boundary): a zone 70m long and 20m wide (1400m²);
- B-D (W. field boundary): a zone 60m long and 2m wide (120m²) along the centre of the road line;
- On line of a swale (c.7m wide) running south from road line at western edge of the field: trench 40m long and 2m wide (80m²) along centre.

Field 9 (road line)

- X1 (ie from west end of current excavation area)-Y (western field edge) including the roundabout: a zone 160m long and 4m wide (640m²);
- X2 (ie from east end of current excavation area) – Z (eastern field edge): a zone c.75m long and 2m wide (150m²);
- X1 to southern limit of A3, along road line: a zone c.60m long and 2m wide.

Contingency

There will be a contingency for expansion of the zones within the confines of the road corridor in the event of significant archaeology being identified.

Field 9 (car park)

Two trenches 2m wide east –west (100m) and north – south (50m) with a contingency for expansion in the event of significant archaeology being identified.

Objectives

7.4 Field 8

- map and accurately date landscape features relating to the Roman farmstead identified in the training dig;
- examine further a large north-west / south-east Late Roman ditch found in Evaluation Trench 35 - geophysical survey appears to show it continuing across the whole of Area A3 to the south-east.
- determine the character and history of the springhead and the Hadrianic coin hoard in Evaluation Trench 33
- further sample well-preserved organic material encountered in Evaluation Trench 33 - which may also be found elsewhere on the road line - with a view to palaeoenvironmental reconstruction

7.5 Field 9

- trace the line of a major east-west ditch located in the Department's Trench B and map and date any other landscape features;
- to determine whether any hitherto unidentified ancient springheads lie on the road line;
- to examine the history of the boundary between Fields 8 and 9.

7.6 These objectives relate in particular to Topics 1 and 2 (Landscape and environment in early prehistory, and Iron Age into Roman: the processes of change) in the original ARMP, but may also relate to Topics 3 (cult and ritual) and 4 (Late Roman – Post-Roman: the processes of change).

7.7 In both fields an objective is, by implementing an appropriate sampling strategy, to study the early Holocene landscape.

Area B6

- 7.8 The principal impact of development in Area B6 will be a football pitch. In the event of substantial groundworks further excavation - scope to be determined - will be required to determine the context of the wooden posts discovered in YAT Evaluation Trench 20 in 2009 (4.2 above). Further examination and sampling of the early Holocene landscape should also be undertaken.

Further work by the Department of Archaeology and Community Project

- 7.9 In the 2011 season the Department will complete excavations in Area D (Fig.3) and will undertake some small scale excavation to link trenches previously excavated in order to complete mapping of the ancient landscape and address any outstanding stratigraphic problems. In particular there will be further work in the area of the stone base excavated in Trench 08C.

8. Post-excavation: archive, assessment, analysis and publication

Archive

- 8.1 The requirement for archiving is laid out in Section 9 of the project brief for Areas A1-2 (9.1) which begins:

The initial result of the fieldwork stage will be the site archive which must be prepared in accordance with *Management of Archaeological Projects*, Appendix 3 ((MAP2; English Heritage 1991).

The same requirement applies to the brief for On Site Archaeology in Fields 8-9 and it is expected that the Department will produce an archive along similar lines.

Assessment and Updated Project Design

- 8.2 The brief for work in advance of the Phase 1 development states:

The site assessment report must follow the model as set out in *Management of Archaeological Projects* (MAP2; English Heritage 1991) and in the Institute of Field Archaeologists' *Standard and Guidance for Archaeological Excavations* (IFA 1999). The report should include reports on all stratigraphic analyses, artefacts and ceramic studies, deposit samples and other aspects of archaeological science, and on any other aspect of the project which may be relevant for further study. In discussing all aspects of the project there will, in each case, be a clear statement of potential so as to inform an updated post-excavation project design.

And

Following discussion and agreement on future analysis and publication, an Updated Project Design, following the model put forward in *Management of Archaeological Projects*, Appendix 5 (MAP2; English Heritage 1991) and the Institute of Field Archaeologists' *Standard and*

Guidance for Archaeological Excavations (IFA 1999), must be agreed in writing with the Principal Archaeological Officer, City of York Council. This updated project design should address the potential of the excavated data to address the project research objectives, identify any new objectives and form the basis of the ensuing publication programme.

- 8.3 YAT has completed a draft Assessment Report and (December 2010) is working towards an Updated Project Design.
- 8.4 On completion of their fieldwork in Area A3 On Site Archaeology's brief requires them to prepare an Assessment Report and Updated Project Design along the same lines as stated above.
- 8.5 On completion of the Department of Archaeology's work in A3 there will also be an assessment along similar lines to that stated above.

Analysis

- 8.6 The brief for work in advance of the Phase 1 development states (11.2):

The post-excavation analysis should follow the proposals as set out in the updated project design and include an agreed strategy for specialist analyses and for artefact conservation.

Having prepared the Updated Project Design YAT will present a strategy for analysis to be agreed by the University and City of York, although this will now be integrated into the overall analysis strategy for the project which includes the work of On Site Archaeology and the Department of Archaeology.

- 8.7 In Area A3 On Site Archaeology are also working to a brief which requires them to undertake analysis according an agreed Updated Project Design. The brief also requires them to work closely with the Department of Archaeology on analysis and publication to ensure a consistency of approach. As in the case of YAT analysis will be integrated into the overall project strategy.

Specialists

- 8.8 In view of the involvement of three separate parties in the fieldwork at Heslington East, it will be crucial for there to be a good measure of co-ordination in the appointment and instruction of specialists undertaking analysis work on finds, pottery, palaeoenvironmental material etc with regard to such matters as methodology, presentation of digital data, and report content and format. To facilitate this it is expected that the University's Archaeological Consultant, in association with the Department of Archaeology, will be closely involved with the selection, briefing and monitoring of specialists.

Publication

- 8.9 In the brief for the Phase 1 work the form of final publication of results was left open for further discussion and review. It has now been agreed that there will be a single publication of the results from the whole of Heslington East project to include the work of all parties.
- 8.10 Once all assessments, archives and analyses have been completed a co-ordinated programme for publication along the lines set out in Appendix 7 of MAP2 will be required. This should address on the one hand: format, content and editorial conventions, and on the other: timetable, costs and means of dissemination.
- 8.11 The Department of Archaeology, in association, where appropriate, with York Archaeological Trust and On Site Archaeology, will take the lead in preparing this programme. Once it is agreed by all relevant parties, including City of York Council, the Department will manage the publication project through to completion.
- 8.12 The final format and content of the report cannot be determined until all fieldwork has been completed. However, it is currently anticipated that there will be a printed monograph supported by an extensive data base on the web.
- 8.13 Due credit and acknowledgement will be given to York Archaeological Trust and On Site Archaeology, and any other specialists involved with the project in the final publication and any publicity relating to it.

9. Outline Timetable

Fieldwork

- 9.1 It is anticipated that the current programme of fieldwork by On Site Archaeology in Area A3 will continue until Easter 2011 (21 April).

The Department of Archaeology's fieldwork training programme and Community Project will be completed in 2011.

Archive and assessment

- 9.2 The site archive and Assessment Report for On Site Archaeology's work should be completed no more than six months after the end of the fieldwork (end of October 2011). An updated project design for analysis should be completed by the end of year 2011.

Analysis

- 9.3 The beginning of a programme of analysis will begin when all parties have completed assessment and a co-ordinated project design has been agreed. At present it is difficult to

predict exactly when this will happen, but work on the project design should be ongoing in 2012.

Publication

- 9.4 At time of writing it would seem likely that work on preparing the final report on the archaeology of Heslington East could begin in 2013. Completion of a draft text might be expected by the end of year 2015.