Excavation Report

Bronze Age Beaker pits and a Late Iron Age into Roman Settlement including a possible mortuary enclosure on land off Stirling Way Nr. Witchford, Ely, Cambridgeshire

Excavation Report

oxfordarchaeology east

August 2010

Client: Capita Symonds for Cambridgeshire County Council

OA East Report No: 1134
OASIS No: Oxfordar3-66344
NGR: TL 5150 7890

Bronze Age Beaker pits and a Late Iron Age into Roman Settlement on land off Stirling Way Nr. Witchford, Ely, Cambridgeshire

Archaeological Excavation and Watching Brief

By Rob Atkins BSocSc Diparch

With contributions by Peter Boardman BA; Zoe Uí Choileáin MA PG Dip MSc; Steve Critchley BSc MSc; Nina Crummy BA FSA; Richard P. Evershed BSc PhD CChem MRSC; Chris Faine BA MSc BABAO; Rachel Fosberry AIFA AEA; David Mullin BA MPhil; Lucija Šoberl BSc and Steve Wadeson HND

Editor: James Drummond-Murray BA MIFA

Illustrator: Séverine Bézie BA MA

Report Date: January 2011

Report Number:	1134
Site Name:	East Cambridgeshire Recycling Centre
HER Event No:	CHER ECB 3287
Date of Works:	30th September 2009 - 19th October 2009
Client Name:	Capita Symonds for Cambridgeshire County Council
Client Ref:	May 082/08
Planning Ref:	E/03009/08/CC
Grid Ref:	TL 5150 7890
Site Code:	ELYREC09
Finance Code:	ELYREC09
Receiving Body:	CCC Stores, Landbeach
Accession No:	

Prepared by: Rob Atkins
Position: Project Officer
Date: August 2010

Checked by: James Drummond-Murray
Position: Project Manager
Date: August 2010
Signed: .....

Disclaimer
This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting there from. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

Oxford Archaeology East,
15 Trafalgar Way,
Bar Hill,
Cambridge,
CB23 8SQ

t: 01223 850500
f: 01223 850599
e: oaeast@thehumanjourney.net
w: http://thehumanjourney.net/oaeast

© Oxford Archaeology East 2008
Oxford Archaeological Unit Limited is a Registered Charity No: 285627

Table of Contents

Summary **7**

1 Introduction **8**

1.1 Location and scope of work 8

1.2 Geology (by Steve Critchley) and topography 8

1.3 Archaeological and historical background 9

1.4 Acknowledgements 12

2 Aims and Methodology **14**

2.1 Aims 14

2.2 Methodology 14

3 Results **16**

3.1 Introduction 16

3.2 Period 1: Earlier Prehistoric activity (Neolithic to Bronze Age) 16

3.3 Early/Middle Iron Age (Period 2, Phase 1) 17

3.4 Late Iron Age/LPRIA (Period 2, Phases 2 and 3) 17

3.5 Early to Middle Roman settlement (Period 2, Phases 4 and 5) 18

3.6 Layer/footpath 560 and ?Late Roman manure scatters (Period 2, Phase 6) 24

3.7 Undated pits and post holes (Fig. 6) 25

3.8 Period 3: Later post-medieval and modern features 25

3.9 Finds summary 26

3.10 Environmental summary 26

4 Discussion and Conclusions **28**

4.1 Neolithic and Earlier Bronze Age activity and occupation 28

4.2 Middle/Late Iron Age to Middle Roman settlement 31

4.3 Post-medieval and modern remains 36

4.4 Significance 37

4.5 Recommendations 37

Appendix A. Health and Safety Statement **38**

Context Inventory **39**

Appendix C. Finds Reports **46**

C.1 Coins....46
C.2 Metalwork....46
C.3 Metalworking waste....49
C.4 Non-building stone....50
C.5 Glass....51
C.6 Prehistoric pottery....52
C.7 Iron Age and Roman pottery....54
C.8 Tiles....68
C.9 Burnt clay....68
C.10 Lipid Samples....69
C.11 Bone artefacts....74
Appendix D. Environmental Reports....78
D.1 Human bone....78
D.2 Mammal bone....81
D.3 Mollusca....83
D.4 Environmental samples....84
Appendix E. Bibliography....87
Appendix F. OASIS Report Form....97

List of Figures and Plates

Fig. 1 Location of 2008 trenches, 2009 excavation and watching brief areas

Fig. 2 Excavation and watching brief areas in relation to proposed development in Phases 1 with contours marked (proposed Phase 2 to the south not included)

Fig. 3 Location of 2008 test pits, trenches and 2009 excavation area overlaying geophysical results within the development area

Fig. 4 Site location in relation to adjacent archaeological work

Fig. 5 Surface model. The site with fens and surrounding archaeology, after Hall 1996 fig.18, Evans 2003 fig. 142, Atkins and Mudd 2003 fig.28, Evans et al 2007 fig.1 and further additions.

Fig. 6 All features phased plan of excavation area and land immediately to the south including evaluation trenches

Fig. 7 Plan of cremation 528. Plate 1: Cremation 528 looking west

Fig. 8 Plan of burial 550 at 1: 20. Plate 2: Skeleton 551 from the south. Note spindle-whorl behind shoulder. Spindle -whorls at 1: 2

Fig. 9 Plan of burial 564 at 1: 20. Plate 3: Three rings still attached around finger. Copper-alloy rings drawn at 1:1. Nene Valley beaker at 1:2

Fig. 10 Plate 4: Burial 564 from south. Plate 5: Rings on the fingers of burial 564 looking west

Fig. 11 Sections across enclosure ditches surrounding burials in western area and possible eastern structure with selective post holes drawn

Fig. 12 Plate 6: Western half of enclosure looking south. Plate 7: Western half of enclosure looking north

Fig. 13 Plate 8: Large Iron Age and Early Roman ditches (boundary ditches B and C) looking east. Various sections at 1: 20 and 1:50

Fig. 14 Copper-alloy objects

Fig. 15 Iron objects

Fig. 16 Bronze Age Beaker pottery from pit **549**

Fig. 17 Iron Age pottery from boundary ditch B

Fig. 18 Roman pottery from boundary ditch C and pit **101**

Fig. 19 HER data showing Bronze Age sites (not flint scatters) and possible IA temple

Fig. 20 Plate 9: Excavation looking north

Fig. 21 Partial HTGC profile of the trimethylsilylated total lipid extract from sample CAM60 illustrating the distribution of compounds characteristic of degraded animal fat. Key: $FFA_{X:0}$ are free fatty acids of carbon length x and degree of unsaturation y;$FFA_{X:0br}$ are branched free fatty acids; IS is the added internal standard (C_{34}alkane). MAGs are monoacylglycerols; DAGs are diacylglycerols; TAGs are triacylglycerols

Fig. 22 The distributions of triacylglycerols detected in the Witchford Recycling Centre lipid extract CAM 60

List of Tables

Table 1: Quantification of lithic material by context
Table 2: Earlier prehistoric pottery
Table 3: Quantity and weight of pottery by ceramic period (MSW = Mean sherd weight)
Table 4: Quantity and weight by period
Table 5: The Iron Age pottery fabrics and forms, listed in alphabetically order
Table 6: The Late Pre Roman Iron Age pottery fabrics and forms, listed in alphabetically order
Table 7: Weight of pottery by site phase
Table 8: The Early Roman pottery fabrics and forms, listed in alphabetically order
Table 9: Quantity and weight by period
Table 10: The Post Roman pottery fabrics and forms, listed in alphabetically order
Table 11: Quantity and weight by feature type
Table 12: Forms by Estimated Vessel Equivalent (EVE)
Table 13: Burnt clay
Table 14: Details of the potsherds submitted for organic residue analysis
Table 15: Summary of the results of the organic residue analyses
Table 16: Inhumations
Table 17: Cremation 526
Table 18: Species distribution for the entire assemblage
Table 19: Proportions of the main domesticates compared to other contemporary sites
Table 20: Results from environmental samples

Summary

Between the 30th September and 19th October 2009 OA East conducted the first phase of an archaeological excavation on land off Stirling Way, near Witchford, Ely in advance of a proposed recycling centre. This work follows on from an archaeological evaluation of the site in 2008 (Atkins 2009).

The excavation found some pre-Iron Age prehistoric activity. An Early Neolithic to Bronze Age flint scatter consisted of 33 worked flint pieces found across the site but the majority came from the plateau of a small knoll at c.15.5mOD. Two Beaker pits were excavated very close to the top of the slope. These were the first non funerary Beaker features uncovered within a 5km radius of the site. The accumulative evidence probably indicates 'stay over' and/or sporadic visits to the site in this earlier prehistoric period.

In the Late Iron Age a settlement was established but only a very small part of it was within the excavation (and the earlier evaluation area). This work found four phases of occupation which started c.1st century BC and continued into the late 2nd century AD. It is likely that the overall settlement started in the Early or Middle Iron Age as a few pottery sherds of this period was found as residual items in later features. Likewise, the settlement may have continued into the Late Roman period adjacent to the site, as a Late Roman layer as well as artefacts dated to this period, including a 4th century coin, were found in the topsoil. The Iron Age occupation consisted of two Later Iron Age pits which were cut by a large LIA boundary ditch and its internal bank which seems to have demarcated the settlement extent to the north. This ditch meandered along the top contour of a ridge which ran roughly parallel and overlooked a strategic causeway (stream) route which flowed from Grunty Fen into West Fen. Internal features within the site were outside the excavation area although another ditch and domestic pits were found in the 2008 evaluation.

External to this settlement, beyond the boundary ditch to the north there were very few features. The only datable features comprised a contemporary possible mortuary related enclosure which seems to have started in the very Late Iron Age and continued to around the late 2nd century AD. Three interesting burials with grave goods, a probable LPRIA cremation and two second century inhumations, lay within the western side of this small enclosure respecting either the large boundary ditch or the enclosure ditches.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 An archaeological excavation was conducted at land off Stirling Way, near Witchford, Ely (Figs. 1 and 2). The archaeological excavation was undertaken in accordance with a Brief issued by Kasia Gdaniec (Gdaniec 2008) of Cambridgeshire County Council (CCC; Planning Application E/03009/08/CC), supplemented by a Specification prepared by OA East (formerly Cambridgeshire County Council's CAM ARC) by James Drummond-Murray (Drummond-Murray 2008).

1.1.2 The work follows on from a geophysical survey (Masters 2008; Fig. 3) and an archaeological evaluation within the development area in late 2008 (Atkins 2009). This evaluation found a Late Iron Age and Early Roman settlement on the southern part of the site. In accordance with the planning consent for the site, the brief stipulated that there should be an archaeological excavation on the south side of the development area (Gdaniec 2008). This was in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990).

1.1.3 In the summer of 2009, Capita Symonds, on behalf of East Cambridgeshire District Council, submitted a new scheme to initially (in Phase 1) reduce the size of the proposed development in the extreme southern area by *c*.40m by 25m (drawing CS029207/SK/016; Fig. 2). Later, in Phase 2, it is proposed to develop up to the original development boundaries. As a consequence, the excavation area was reduced in size to the proposed Phase 1 boundaries. It was agreed between Kasia Gdaniec and Capita Symonds, that the unexcavated Phase 2 area would be fenced off and protected. This southern part of the site will be excavated before the Phase 2 development commences.

1.1.4 Staff of the county council highways division, which overlooked the site, were given site tours of the excavation. There was some publicity arranged by a local councillor, Cllr George Jellicoe, which resulted in a small article on the excavation being published in *The Witchfordian* (the local magazine for the village of Witchford and Wentworth) in edition 227 dated February 2010.

1.1.5 A watching brief on a pipe trench took place in January 2011 during development on the site. This was within an unexcavated area where a live electricity cable had been found during the previous 2009 excavation.

1.1.6 The excavation site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology (by Steve Critchley) and topography

1.2.1 The British geological society has recorded the area as mid Pleistocene glacial tills overlying beds belonging to the Middle Jurassic Kimmeridge Clays (British Geological Survey (BGS) 1980).

1.2.2 The tills were deposited during the Anglian Glaciation and are composed of stiff light brown to greyish clays containing abundant rounded to irregular clasts of chalk, flint, Jurassic cement stones along with rarer oolitic limestones, ironstones and occasional far travelled exotic clasts of igneous or metamorphic rock types (BGS 1988). The outcrops exposed in the archaeological excavation exhibited occasional patches of fluvial gravels (incorporated as frozen ground) and limited periglacial activity.

1.2.3 The underlying Kimmeridge beds are composed of fossiliferous mudstones, silty mudstones and muddy limestones with large hard limestone concretions. Weathering destroyed much of the faunal and lithological structure of the beds and the near surface outcrops are of composed of a dark grey sticky clay.

1.2.4 The southern quarter of the site was on a plateau on top of a small knoll at *c*.15.50m AOD. The land then sloped down to the north and was at 11.81m AOD adjacent to the Witchford Road (Fig.3). The land was used up to summer 2009 for arable farming.

1.3 Archaeological and historical background

Earlier Prehistoric period (Fig. 4)

1.3.1 No earlier prehistoric features have been found in the immediate area around the proposed development and only a very few artefacts recovered. A single flint, *c*.200m to the south of the development area has been recorded and this was found amongst Roman pottery brought in to be identified in 1977/8 by Mr. Harley (CHER 06912A). Four residual flints was found in Roman contexts from Area A on the Ely to Haddenham water main, *c*.300m to the east of the site and comprised one blade and three flakes (Thompson 2009; CHER 17824). No artefacts were found from two other excavation areas; HAT investigation *c*.400m to the south-west (Crank 2000 and Ralph 2003; CHER 06912), Area B of ASC's work on the Ely to Haddenham water main *c*.900m to the south (Thompson 2009; CHER 17823). There were nine flint pieces found collectively during a Northants evaluation c.300m+ to the south-east (Holmes 2008), and a subsequent recording action within the southern part of this evaluated site (Holmes and Simmonds 2009). This flint contained material possibly dating from the Mesolithic period to the Early Bronze Age and comprised four blades, three flakes, a hammerstone and an end scraper.

Iron Age and Roman settlement (Fig. 4)

1.3.2 Evans suggests that Witchford, whose name denotes -'the Watch on the Ford' - has a very important strategic position controlling the causeway route from Grunty Fen to into West Fen and the siting of Iron Age sites here may be equally strategic (Evans 2003, 266; Fig. 3). He stipulates within the Cove's environs, there would seem to be at least three significant complexes of Iron Age sites (Wardy Hill, Hurst Lane/West Fen and Witchford) (Evans 2003, 268). This name definition has been disputed with an alternative meaning suggested of 'ford by the Wych elms' (pers. comm. Richard Mortimer).

1.3.3 The proposed development is within a known area of Middle to Late Iron Age and Roman remains which have been found over an area of *c*. 400m by 400m directly to the east and south of the development area which may suggest a single settlement (Fig. 4).

1.3.4 In 1910 Walker recorded a “Roman Camp” at *c*.TL 514 787 (Walker 1910, map opposite p.176), which suggests finds may have been associated with earthworks since destroyed (Phillips 1970; CHER 06912). The Roman road known as Akeman Street ran from Cambridge through Ely. According to Margary, the Roman road would have continued in a straight line from Streatham, across the eastern edge of Grunty Fen towards west of the centre of Ely (Margary 1973, 209). Its line would have crossed the south-eastern corner of the airfield (Leith 1995, 3) - *c*.1km to the south-east of the development.

1.3.5 On the 1927 OS 6 inch map Roman pottery was recorded at TL 5140 7853. In 1977/8 further finds of pottery "by the bucketful" including much samian and coarse ware were made by Mr. Harley (CHER 06912) at TL 514 785.

1.3.6 In the last 13 years there has been several archaeological investigations to the east and south of the proposed development area (Fig. 4). This work has largely taken place piecemeal, as part of the increasing expansion, over time, of Lancaster Business Park. A desk-top study of Lancaster Business Park in 1995 (Leith 1995) and a watching brief took place 200m to the south at Lancaster Way in 1995 at TL 516 785 (Robinson 1995; CHER 11801). This watching brief found only a small amount of abraded Roman pottery dating to between the 2nd and 4th centuries. The lack of features led the excavator to suggest the site's position was some distance from the apparent settlement core. An evaluation at Lancaster Way Business Park in 1996 took place *c*.900m to the south-west at TL 512 783 and seven trenches excavated with a total length of 150m (Leith 1996; CHER 55). This evaluation found no features apart from a WW II service pipe which may indicate that this site was beyond the Roman settlement although it should be noticed that many modern bricks were found in the topsoil which may suggest truncation of features by recent activity.

1.3.7 In 2000 and 2003 an evaluation and subsequent excavation took place at Plot C, Lancaster Way *c*. 400m to the south-west at TL 5141 7851 (Crank 2000; Ralph 2003); Fig. 4; CHER 15366). This was in the same location as Mr. Harley's finds in 1977/8 (see 1.3.4 above; CHER 17276). Four Roman phases were identified in the excavation with Phase 1 dating between *c*.43-150 AD, Phase 2: AD 150-250, Phase 3: AD 250-350 and Phase 4: *c*.350-400+AD. Evidence dating to the earliest Roman phase was sparse and consisted of one north to south ditch (1030) less than 1.4m wide (Ralph 2003, fig. 4). Phase 2 and 3 consisted of parallel and intercutting ditches on an east-west axis. A series of aligned pits and post holes were cut between phases 3 and 4. In the late Roman phase 4, part of a large field enclosure was recorded.

1.3.8 An evaluation and subsequent excavation took place *c*.300m to the east during work in 2006 and 2007 on the Ely to Haddenham water pipeline (Area A) at TL 5185 7872 (Hancock 2006, trench 16; Thompson 2009; Fig. 4; CHER 17824). The excavation of Area A covered 294m long by 8m wide. The Roman activity was concentrated towards the centre of the excavation area. There were a series of linear features either orientated east to west or north to south. Four phases of activity but only six of the twenty-three ditches present contained any datable material. Phase 1 was *c*.middle to late 1st century to early 2nd century AD. This phase had several features as well as a 'substantial' boundary ditch (and recuts) altogether 5m wide and 0.52m deep, a rectangular enclosure with ditches 0.5 to 0.6m wide and between 0.10m and 0.30m deep as well as several other ditches of unknown function up to 0.40m deep (Thompson 2009). Phase 2: dated from the middle/late 2nd to the mid 3rd century. Phase 3: late 3rd to mid 4th century AD. Phase 4: mid/late 4th century AD.

1.3.9 In 2008, Northants Archaeology evaluated a large area between 300 and 1km to the south and south-east by field walking, geophysical survey and then trial trenching (Holmes 2008). A further area, adjacent to the north-west of this original area, was evaluated later in 2008 (Simmonds and Mason 2008) and this led to strip, map and recording the site (Holmes and Simmonds 2009). Three areas of occupation were found but only one of which was probably part of the current settlement. Here, Northants Archaeology recovered part of a Middle Iron Age and Roman settlement, adjacent to the east of Area A (Hancock 2006 and Thompson 2009; CHER 17824). Within this part of the settlement, occupation dated from the Middle to Late Iron Age

periods through to the transitional 'Belgic' period and up to the early 2nd century AD. Earliest occupation was found on the southern area of the site with a possible shift later northwards. In the Iron Age features comprised ring ditches, field boundaries and enclosures but few pits. Significant domestic refuse was found in some of the features. In the Early Roman period there were ditches and a few pits. Large quantities of pottery (over a kg) was recovered from some of the ditch sections which indicate domestic occupation occurred in this part of the site in this period.

Adjacent and nearby Iron Age and Roman settlements (Figs. 4 and 5)

1.3.10 A separate Iron Age settlement may have found *c.*1km to the south-east by Northants Archaeology and features here included a ring ditch (Holmes 2008).

1.3.11 Another Early Roman site was found *c.*1km to the south but few features were found (Holmes 2008). This latter site seems to have been the eastern part of a settlement which was partially evaluated and excavated in 2006 and 2007 by ASC as part of investigations on the Ely to Haddenham water pipeline (Area B) at TL 51500 78085 (Hancock 2006, trenches 12 and 13; Thompson 2009; Fig. 4; CHER 17823). Here four Roman phases were found which were almost identical in period to the four phases from Area A (see section 1.3.7 above). Most of the Early Roman features were dated middle to late 1st century AD (Thompson 2009). A lot of the features dated to this phase were ditches including two enclosures, curvilinear ditches and these were up to 1.40m wide and all less than 0.40m deep. A pit and post hole structures were found within the enclosures.

1.3.12 Importantly, within a distance of 5km of the development area there have been major excavations; seven Iron Age/Roman settlements (Fig. 5 have been found at Haddenham (Evans and Hodder 2006), Hurst Lane (Evans *et al* 2007), Little Thetford (Lucas and Hinman 1996), Prickwillow Rd, Ely (Atkins and Mudd 2003), Trinity Fields (Masser 2001), Wardy Hill (Evans 2003) and West Fen Rd, Ely (Mortimer *et al* 2005; Mudd and Webster forthcoming). Other Iron Age and/or Roman settlements have been found by field walking or small archaeological evaluation/excavations (Fig. 5).

1.3.13 Where there has been major excavations, all seven sites had been established in the Iron Age and continued into the Roman period (Fig. 5). All Iron Age and Roman sites in the area around the site were placed on land above the fens at least *c.*5mOD with sites often positioned at the fen edge. Iron Age and Roman settlements are now known to occur at intervals of 500m and 1.5km across the eastern half of Ely (Evans *et al* 2007, 74).

1.3.14 To date excavations have shown a relative poverty within Ely settlements (Evans *et al* 2007, 41). Examples Evans *et al* quotes to prove this relative poverty was that only six or seven brooches of the Late Iron Age or conquest period have been found in the main five excavations in the Ely area and from an evaluation at St John's Road as well as an absence of Iron Age coins (Evans *et al* 2007, 72). One of the possible reasons it has been argued is that Ely falls, on the one hand, just north of the Aylesford-Swarling border and the limits of Late Iron Age Gaulish influence and on the other immediately to the west of the sphere of the Iceni polity and south of their later expansion into the central Fenland islands of March, Stonea and Chatteris (Evans *et al* 2007, 41).

Medieval, post-medieval and modern

1.3.15 The area south-west of Ely, towards Grunty Fen was part of Ely's open or common fields. The common field system was in existence in this region by at least the 14th century (Taylor 1975, 92). An air photo survey over the former airfield found that ridge and furrow had survived within some of the fields but not within the development area (Palmer 1995, fig. 1) although it is probable that the whole of this area was once covered by ridge and furrow (Leith 1995, 4).

1.3.16 The 1811 Ordnance Survey Draft 1" Map shows the proposed development area as a small part of a large field (presumably a remnant of this open fields) with no field boundaries within it. This part of Ely/Witchford were mostly enclosed at a very late date in the middle of the 19th century with Grunty Fen enclosed and drained in 1857 (Taylor 1975, 203), Witchford parish by 1838 (Pugh 1953, 176), and Ely St Mary by 1844 (Inclosure Map 1844).

1.3.17 The 1888 Ist Edition Ordnance Survey Map shows the development area as part of a large field. In the 1902 2nd Edition Ordnance Survey Map and 1927 3rd Edition Ordnance Survey Map shows the development area still as part of a large field. For the first time there is a north to south field boundary adjacent to the east of the development area (later in WW II to become Stirling Way).

1.3.18 The building of an airfield in WW II in 1941 affected the development area and the land around. Four farms and six farm cottages are said to have been demolished in order to build the aerodrome (West 1980). The site was levelled using drag lines and excavators, and brick rubble brought by train from London was laid under concrete for the runways (Whetstone, pers. comm. recorded in Leith 1995, 7). Importantly, the depth and the manner of this work was published (Fowler 1948). Stirling Way was built as part of the airfield construction. The excavation area was seemingly not built on in WW II. To the south, within the earlier evaluation area, there was a 'loop dispersal' covering a *c*.50m² area and this led off Stirling Way and was recorded on the 1944 Plan of Witchford Airfield (Cambs. Coll. C.45.7). The evaluation in this area found roof tiles, bricks, asbestos and other material suggesting there had been a building here (Atkins 2009). The airfield was closed in 1946 and the land was gradually cleared and converted back to arable fields. The 1952 Ordnance Survey Map shows the Witchford recycling site as part of a large field. The development area has been run by the Palmer family at Alderforth Farm since 1963 as tenants to the Church Commissioners.

1.4 Acknowledgements

1.4.1 The author would like to thank Capita who commissioned the evaluation especially Tim Harrison who organised the schedule of the project and Cambridgeshire County Council for funding the archaeological work. The project was managed by James Drummond-Murray who also edited this report.

1.4.2 The brief for archaeological works was written by Kasia Gdaniec, of Cambridgeshire County Council, who visited the site and monitored the excavation. Thanks go to Howard Palmer for interest and local information on the site. The county highways agency were very helpful in allowing use of their car park. Sarah Poppy of the Cambridgeshire HER was as ever very useful in supplying information on the sites in the area.

1.4.3 I am grateful for specialist analysis from Peter Boardman, Zoe Uí Choileáin, Steve Critchley, Nina Crummy, Chris Faine, Rachel Fosberry, David Mullin and Steve Wadeson. Richard Mortimer looked at the lithic assemblage. Steve Wadeson

supervised the post-excavation work on the artefacts and Rachel Fosberry the environmental material. Alice Lyons kindly gave helpful advice on the probable mortuary enclosure and on the Iron Age and Roman pottery. Conservation and cleaning of metal work was carried out at Colchester Museum by Emma Hogarth. The illustrations were drawn by Séverine Bézie. Steve Critchley and Nick Richardson kindly metal detected the site. Lipid samples were taken from the Beaker pottery by Lucija Soberl of Bristol University and the preliminary results are published here (with Professor Richard Evershed)

1.4.4 Rachel Clarke surveyed in the excavation area. Rob Atkins directed the excavation with Jon House and Tom Lyons supervising and David Brown, Graham Clarke, Zoe Ui Choileáin, John Diffy and Steve Graham assisting. David Crawford-White kindly organised several volunteers who helped out on site comprising Bob Delaney, James Fairbairn, Claire Halley, Sarah Hull and Rebecca Zarate. The watching brief was carried out by Taleyna Fletcher and Graeme Clarke.

2 Aims and Methodology

2.1 Aims

2.1.1 The primary objective of this excavation was to preserve the archaeological evidence contained within the site by record and to attempt a reconstruction of the history and use of the site.

2.1.2 The brief set out two research priorities (Gdaniec 2008):

1) The characterisation of rural Roman settlement. Although the area requiring investigation constitutes a small part of a settlement, the determination of the land use character at the boundary will be of relevance in relation to what is known about contemporary settlement that has been partially excavated beneath the current Lancaster Way Business Park.

2) Environmental reconstruction. Using the spectrum of environmental techniques appropriate for this aspect of investigation, an attempt will be made to model the landscape and its transformation brought about by the settlement's inhabitants and due to natural events.

2.2 Methodology

2.2.1 A week before the start of the archaeological excavation there was a geotechnical survey within both the Phase 1 and 2 areas of the development area and this was carried out by Gavin Bell of RSA Geotechnics Ltd. This work comprised seven trial pits excavated by a JCB type mechanical excavator and four boreholes by a rig. Two of the trial pits and two boreholes were within the Phase 1 archaeological excavation area. These two trial pits as well as the next two closest to the archaeological excavation were monitored but no archaeological deposits were encountered in any of them. They were up to 5m in length and 0.45m wide and dug to a depth of *c*.4m with the water table encountered at about 3.8m. The boreholes were only 0.35m in diameter and the very limited area affected meant that these were not monitored. Gavin Bell later confirmed that no archaeological remains were seen. During the archaeological excavation, an area of *c*.1m diameter around the two boreholes were left unexcavated.

2.2.2 The Phase 1 archaeological excavation was mechanically excavated using a tracked 360º type excavator using a toothless ditching bucket under constant archaeological supervision with the topsoil and subsoil removed separately and deposited in two bunds to the north of the excavation area. Where possible, the subsoil was metal detected before removal as well as all exposed surfaces and features scanned by Steve Critchley and Nick Richardson. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

2.2.3 Tiles with electricity cables written on them were uncovered running roughly north to south during machining in the central western part of the site and on their exposure a 1m area on either side was left unexcavated. A further live surface trench ran parallel to the west of the electricity cable but no tiles or cables were exposed here. The 2008 geophysical survey recorded the cables as one disturbed area c.7m wide running from the Witchford Road to the county council depot (Masters 2008; reproduced in Atkins 2009 fig.5). Both cables were shown to the clients and their positions recorded. After the site was backfilled, wooden pegs were left recording the positions of these services. The 2008 geophysical survey implied about 30m to the east there were further north to south cable(s). These would have been within the excavation area but no tiles or live

pipes were exposed/encountered in any of the archaeological work and it is therefore uncertain if the geophysical survey was showing live services.

2.2.4 A watching brief over four days took place within the area of the live cable in January 2011. A 3.5m by 2m sub-rectangular pit was excavated over the former cable and a new electricity pipe was attached (Fig. 2). A 0.4m wide new pipe trench re-directed the electricity cable away from the proposed new building. No archaeological features pre-dating the furrows were uncovered.

2.2.5 A human cremation was found during machining and was immediately covered up. The cremation was only excavated after a burial licence was obtained from the Ministry of Justice. After the end of the excavation, a 360º type excavator using a toothless ditching bucket under constant archaeological supervision took down the burial area to check that no other burials were missed during the hand excavation. Also, the main boundary ditches (B and C) was machined down by *c*.0.3m to see if there was any entrance ways through these ditches within the excavation area.

2.2.6 During excavation the archaeological Brief was followed. It required that all discrete features should be fully excavated with 50% being a minimum (Gdaniec 2008). All pits and post holes were excavated to at least the 50% minimum with many 100% excavated. There was a requirement in the Brief that linear features associated with settlement have a minimum of 25% excavation. This percentage was adhered to except the possible mortuary enclosure of which the majority was excavated with only a few small baulks retained.

2.2.7 Nineteen bulk samples of between 10 litres to 30 litres were taken from the fills of features ranging from burials, the cremation, pits, ditches and post holes.

2.2.8 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.

2.2.9 This report has amalgamated the evaluation's Iron Age and Roman features and their artefacts/ecofacts with the results of the present excavation. Post-medieval features/layers and their associated artefacts from the evaluation have not been included in detail although an overview of their importance is assessed.

Period 1	Late Neolithic to Bronze Age
Period 2	
Phase 1	Early to Middle Iron Age
Phase 2	LIA/LPRIA *c*.1st Century BC
Phase 3	LPRIA c.Mid 1st century BC - *c*.Mid 1st century AD
Phase 4	Early Roman c.Mid 1st century AD to *c*. late 1st AD or early 2nd century
Phase 5	Early Roman *c*. late 1st AD or early 2nd century to *c*.later 2nd century
Phase 6	Roman ?(manure scatters) 3rd/4th
Period 3	Medieval to modern

3 Results

3.1 Introduction

3.1.1 This excavation incorporates and discusses both the results of the previous evaluation (Atkins 2009) with the present excavation and the findings are recorded by period. Unstratified flint was recovered from the Early Neolithic although the first features on the site comprised two probable Beaker pits. Evidence of occupation within the development area started in the Late Iron Age and continued into the Middle Roman period with at least four phases represented. The present excavation examined several features uncovered in the evaluation in 2008. The evaluation found a large settlement boundary ditch, small ditches and post holes and these were further examined with the latter proving to have boundaries around a small area of three human burials (including a cremation) possibly a mortuary enclosure. Part of the domestic occupation found in the 2008 evaluation to the south of the boundary ditch, has been, at this stage, left untouched and was not part of the current work.

The present excavation found that the archaeological remains survived at a height of *c*.0.3m below the Late Iron Age ground level. This truncation has meant former positive features such as clay floors will not have not survived. The depths of all features quoted in this report should be increased by about 0.3m to obtain their original height. This original ground level can be hypothesised by the extent a partial surviving cremation has been truncated. The cremation, within the centre of the excavation, comprised two pottery vessels which were found directly below the present topsoil (up to *c*.0.3m deep). with only about 1/3rd of the vessels surviving.

3.2 Period 1: Earlier Prehistoric activity (Neolithic to Bronze Age)

3.2.1 Two Late Neolithic/Early Bronze Age pits (**549** and **575**) were 14m apart (Fig. 6), both were on the northern edge of the knoll plateau overlooking the valley to the north. The pits were of a similar shape and size and both were fully excavated. Pit **549** was oval in shape, 2.3m by 1.3m and 0.25m deep (Fig. 13, S.104). It had moderate (*c*.45º) sides and a gently rounded base. The primary deposit (548), evenly spread across the pit and which may have infilled through natural weathering, was 0.14m thick and comprised a medium brown silty clay with the occasional charcoal fleck and small stone. This deposit was mostly sterile with no artefacts within it. Sealing this deposit was a dark grey brown silty clay deposit, up to 0.20m thick, with frequent charcoal flecks and a few burnt clay flecks (547). There was a collection of 40 Beaker pottery sherds from four vessels as well as three small intrusive Late Bronze Age sherds from a single vessel (Fig. 16; see Mullin Section C.6). Examples of the vessels were analysed for lipids by Lucifa Soberl, a PhD student at Bristol University, and preliminary results show that fatty acids have been recovered from at least two of the sherds (See Šoberl and Evershed, Section C. 10). Two debitage flint flakes were recovered but they may be residual. A 30 litre bulk sample (20) was taken from this context and found small fragments of hazelnuts, large quantities of charcoal some more than 2mm in size comprising *c*.40% of the 60ml flot and a few cereal grains (see Fosberry, Section D.4). Small fragments of burnt animal bone were recovered from the soil sample but thse could not be identified to particular animal species.

3.2.2 It is probable that pit **575** was also a Beaker pit; it is noticeably similar to pit **549** (size and to a certain extent its soil backfill). Pit **575** was severely truncated by later Early Roman Ditch 4 (Fig. 11, S.111). It was oval in shape, 1.75m by 1.25m and 0.09m deep, had gradual sides and a sightly rounded base. It was filled with a single deposit

comprising a mid reddish brown sandy clay (576) with more than 1% very small stones. Whilst pit **575** was undated, ditch 4 contained some earlier pottery (contexts 572 and 574). Context 574 was the fill of the ditch segment which cut pit **575** and it contained a Grooved Ware fragment, whereas from context 572, two probable Beaker sherds were recovered from a section across the ditch, *c*.2m to the south of pit **575**.

3.2.3 There was a small collection of 33 worked flint pieces recovered, all dating to the Neolithic or Bronze Age but were found as residual items, mostly in Roman features. The flint ranged from Early Neolithic blades, to flakes and chunks. A Bronze Age double-pointed awl was found *c*.25m to the south of Beaker pits **549** and **575** within a post-medieval ditch (Fig. 14, SF 23). Double-pointed awls date from the Beaker period and this object may therefore be contemporary with these pits (See Crummy, Section C.2.5).

3.3 **Early/Middle Iron Age** (Period 2, Phase 1)

3.3.1 This was given a separate Phase due to a small number of residual Early/Middle Iron Age pottery sherds found (see Wadeson, Section C.7). No features within the excavation area were found dating to this period but it is likely occupation from this date was nearby.

3.4 **Late Iron Age/LPRIA** (Period 2, Phases 2 and 3)

Phase 2

3.4.1 There was at least two pits (**518** and **587**) dating to this period, both situated at the crest of the hill, in the area located by the Bronze Age Beaker pits. This first phase of occupation in the Late Iron Age pre-dates the LPRIA boundary ditch on the site and this may mean the settlement was unenclosed in this period.

3.4.2 Pits **518** and **587** were adjacent to each other, 0.3m apart, in the extreme west side the excavation near the site's baulk. These pits had been truncated by later Iron Age/Roman occupation on the site, and were the only pre-medieval features directly to the south of boundary ditch C, located where its bank would have been (see below). Pit **587** was cut by boundary ditch C (Fig. 6). It was probably oval in shape, more than 2m long, at least 0.72m wide and 0.22m deep with its southern side having gradual (*c*.35º) edges and its base was slightly concave. There was a single backfill deposit (586) comprising a mottled yellow and olive brown sandy clay with ten LIA pottery sherds and a little bone. Pit **518** was oval in shape, 2.2m by 1.25m and 0.24m deep with moderate (*c*.45º) sides and a sightly concave base. The natural within the pit was not burnt but both backfill deposits (519 and 520) came from material which had burnt material within it. The primary deposit (519) was tipped in from the north and consisted of a dark red brown silty clay but did not contain any artefacts. It was sealed by a mid red brown silty clay which had two pottery sherds and a little bone. A soil sample (32) from this deposit produced only small quantities of charcoal.

Phase 3

Boundary ditch B

3.4.3 In the Late Iron Age a large boundary ditch (B) was dug and this was the main boundary ditch for the settlement - at least on the settlement's northern side. The ditch which was recut (C) in the Early Roman period (see below) with the Iron Age ditch only surviving partly on the eastern side of the excavation, being totally removed on the western side. These ditches followed the crest of the hill and were recorded in the geophysical survey over a 60m distance running roughly east to west on the western side of the excavation area before curving to the north-east near Stirling Way (Fig. 3). The excavation found land directly to the south was devoid of contemporary features and it is likely that the bank of this ditch was placed here.

3.4.4 Boundary ditch B survived best in the section adjacent to Stirling way (Fig. 13, S.119; Plate 8) where the ditch (**656**) was more than 2.8m wide and 0.92m deep and backfilled with four deposits (655 and 665-7). In the other sections where the base of the feature survived (**664**, **650**, **114**), this ditch it was between 0.78m and 1.04m deep. The profile of the ditch was very consistent with it southern edge being at a moderate *c*.45º with a flatish or slightly rounded base. In all the sections apart from **656**, this ditch was only backfilled with a single backfill deposit comprising mostly a light olive or a light orange brown silty clay. The four deposits in ditch **656** consisted of a primary fill which was a dark olive brown silty clay (667) up to 0.92m deep. This was overlaid on its northern side by a dark yellow brown sandy clay (665). Both layers were sealed a 0.04m wide lense (666) tipping down gently from the south to north. This lense comprised a single course thick layer of small stones including flint (*c*.75% of total lense deposit) with the remainder comprising a dark brown silty clay infilling. It is uncertain what the function of this lense was, it is unlikely to have been an east to west metalled trackway associated with Early Roman recut as it wasn't within the other excavated sections. This latest backfill deposit was 655, a dark brown silty clay. Very few artefacts were recovered from the backfill of this Late Iron Age boundary ditch with very small quantities of pottery (only a single pottery sherd although this was a nearly complete profile of a belgic LPRIA vessel from ditch **650;** Fig. 17) and some animal bone which was only recovered from two of the five sections.

3.5 **Early to Middle Roman settlement** (Period 2, Phases 4 and 5)

Phase 4

Boundary ditch C

3.5.1 The site's main Iron Age boundary ditch B was recut on its northern side probably in the Early Roman period (boundary ditch C). Eight sections were excavated through the ditch over the *c*.50m length within the excavation area. All sections produced a very similar in profile with the ditches between 2.8m and 3.15m wide and 1.02m to 1.16m deep with mostly moderate sides, *c*.50°, but occasionally steep in places and a slightly concave base (Fig. 13, S.119). All sections were backfilled with two or three deposits. In one or possibly two of the sections, the layers gently sloped down to the north which may be symptomatic of the bank on the south side slowly slipping back into the ditch whereas other sections especially **657**, show that the soil was tipped in from the other direction. The lower deposits were generally fairly light in colour varied from a light yellow brown silty clay to mid orange brown silty clay to olive brown sandy clay with the exception being section **657** where the basal deposit was a dark red brown sandy clay. The middle and especially the upper deposits were darker with the latter mostly comprising a dark brown silty or sandy clay.

3.5.2 Most of the excavated section slots produced small to moderate amounts of artefacts, with no major concentrations although there were possibly slightly more artefacts in the

upper fills of this ditch. A significant proportion of the artefacts recovered from this site came from this ditch. This can be seen, for example, from a total of 1689 pottery sherds from the site, more than a third (641 pottery sherds) were found in this ditch (see Table 11). Some of the pottery was relatively unabraded, or several sherds of the same vessel were recovered including a substantial part of a suspended bowl comprising 39 sherds (Fig. 18, context 112). The average sherd size from this ditch was just 6.2g per sherd implying that the majority of the pottery was fairly abraded. It is therefore likely there may have been some time between this waste was originally discarded before they were eventually backfilled in the ditch. It is possible that a lot of the backfill within boundary ditch C was from former domestic sources, possibly middens, but significantly the type of artefacts within its backfill was different from other features within the site. This seems to imply the soil within this ditch may have come from other sources than the backfill of features such as boundary ditch A. The differential nature of artefacts recovered can be seen in that boundary ditch C produced all the slag from the site including a smithy hearth bottom (SF 42). There were five slag pieces from three of the sections excavated across the ditch located in the extreme western and eastern sides of the site.

3.5.3 Boundary ditch C also had a disproportionate quantity of Roman small finds recovered from its backfills, comprising six metal and two glass objects. The other non funerary related Roman features within the site produced only two metal objects - a copper-alloy disc from pit **101** and an iron fish hook from ditch 3 and no glass objects. The eight objects from boundary ditch C came from five different excavated slots through the ditch with none of the sections having more than two objects. These finds comprised three copper alloy objects (a hair pin (Fig. 14, SF 7), a ?strip (not illustrated, SF 30)), a late 3rd century coin (SF 31) which was probably intrusive from Late Roman layer 560. Three fe objects consisted of two iron strips (not illustrated, SFs 34 and 35) and an iron collar ferrule (Fig. 15, SF 50), the two glass objects were a bead (SF 44) and an unguent bottle fragment (SF 36). Animal bone from the ditch included a dog burial which was seemingly associated with the glass bead which had been placed/lost at/near its rear.

3.5.4 The five samples which were taken from various deposits within this ditch (samples 4, 35, 36, 37 and 38) were similar. No sample produced any cereal or weed seeds with only small to medium charcoal which implies that the midden deposits were well away from any crop processing on the site (See Fosberry, Section D.4).

Domestic remains found in Evaluation Trenches 38 and 40

3.5.5 Boundary ditch A was recorded on the geophysical survey in the extreme south part of the site where it ran east to west for *c*.50m (Fig. 3) and was sectioned twice in the 2008 evaluation (**95** and **79**; Fig. 13, S5 and S1)(Atkins 2009; Fig. 6). It is uncertain if the ditch was a part of a large enclosure, it was *c*.15m to the south of boundary ditches B/C and this was too far apart to have formed a droveway with it. Ditch A was also too large to be a drainage ditch being between 1.30m and 1.65m wide and 0.58m to 0.70m deep. In both the 1m wide excavated slots, the ditch was backfilled with a single deposit, a mid-grey brown silty clay (78) and a light orange brownish silty clay deposit (94) respectively. It is likely these were two different deposits and the former was backfilled with a small to moderate collection of artefacts whereas the latter had an extremely large collection of artefacts comprising 1.607kg (191 sherds) of pottery, 0.244kg of bone, burnt clay 0.019kg and an oyster shell. These artefacts were spread throughout the fill with no concentration. Taken with the fact this was a single backfill deposit, it implies the ditch was infilled after disuse in a single episode from one domestic source.

This was probably a midden as, although the pottery was found in significant quantities, it was relatively small in size (8.4g per sherd). A soil sample from this deposit found a single cereal grain and a Brassica seed (sample 1).

Phases 4 and 5

Funerary and related features

3.5.6 Directly to the north of the former Phase 4 and 5 main site boundary ditches B and C, and thereby presumably outside the settlement's domestic area, there were features which may relate to funerary activity. This activity may have started in the very late Iron Age period (Phase 4) but certainly was established by the Early Roman period (Phase 5). This funerary activity seems to respect the large boundary ditches, with features aligned on it. Running parallel and perpendicular to it was a possible mortuary enclosure (ditches 1-4) (Fig. 6). The enclosure measured 14m east to west and 7m north to south subdivided into two roughly equal sized compartments by a common northern to south boundary ditch (ditch 4). The eastern compartment comprised four parts/separate ditch segments (ditches 1-4) to enclose an internal sub-square area *c*.6.5m by 5.5m, with two possible entrances on the eastern side and one on the south. Internally only a single post hole (**91**) which may have been part of a contemporary structure, although these lack of other features needs to be taken with some caution as, unfortunately, a modern geotechnical borehole resulted in nearly a quarter of the area being unexcavated. The western side to the enclosure comprised only two ditches (3 and 4) with no corresponding western or southern ditch which may imply the area was "open". Three post holes (**619**, **619** and **634**) further out to the west of the ditches may have represented a fence line and thereby the western limit. Within the two ditches in this western area were two inhumations (**564** and **550**), a cremation (**528**) and some post holes (**604**, **590**, **624**, **626 and 628**). Three postholes were probably directly to the south of the the possible mortuary enclosure and just to the north of boundary ditch C and may have represented a fence line (**565**, **568** and **93**). It is probably significant that there were no post holes to the north of this enclosure.

3.5.7 There are no direct parallels for this enclosure; it does not have the obvious form of a typical termenos with internal shrine, but the use of the eastern part of the enclosure for such activity and the western side as a part enclosed mortuary enclosure should not be ruled out. It is very unlikely that the ditches were slot structures for building(s) as they were mostly "V" shaped with a slightly rounded base. The enclosure ditches were excavated except for a few small baulks left in with sections excavated roughly every metre or metre and a half and these were given different context numbers for comparing artefact distributions (Fig. 12, Plates 6 and 7).

3.5.8 The northern/north-eastern ditch (ditch 3) ran east to west for 14.5m before turning 90º to the south and butt-ending after 3m. It had moderate to steep sides and a slightly concave base and was between 0.57m and 0.89m wide and 0.16m and 0.28m deep (Fig.11, S.11, S.105 and S.109). The size and profile varies with the north-eastern corner surviving the best (although the smallest section, S.11, was due to machining deeper in the evaluation). The ditch was infilled with a single deposit which varied from a largely redeposited natural (mid yellowish brown silty clay) to a mid brown silty clay. Relatively few artefacts were recovered from this ditch with, for example, only 26 pottery sherds although an iron fish hook was also recovered (Fig. 15, SF 49).

3.5.9 There was a possible 0.7m wide entrance way after ditch 3 butt-ended on its eastern side, before a short 1.8m long ditch (ditch 2) began. Ditch 2 was 0.35m wide and

0.15m to 0.18m deep with slightly concave base. This ditch was infilled with a mid orange brown silty clay and contained only a single pottery sherd. To the south of ditch 2 there was a further possible entrance forming with ditch 1, 1.7m wide, at the south-eastern corner of this enclosure. The southern ditch (ditch 1) was 4.3m long which was thin and shallow in the centre and eastern side 0.3m to 0.34m wide and 0.09m to 0.12m deep, widening on its western side to 0.7m and 0.26m deep where it stopped. It was filled with a light to middle orange brown silty clay with only two pottery sherds. There was a third possible entranceway here, 0.7m wide, linked to the start of an east to west ditch (ditch 4) which butted up to the northern ditch (ditch 3) and a post hole **568**, to the south. This post hole was undated, 0.30m in diameter and 0.1m deep. The lower fill (566) comprised a layer of tightly packed small small and medium stones up to 0.06m thick which could have been packing for a post. The upper fill (567) was a mid red brown silty clay.

3.5.10 Ditch 4 was between 0.6m and 0.80m wide and 0.17m and 0.24m deep with steep sides and a slightly concave base with the ditch having a fairly similar profile (Fig. 11, S.110, S.111 and S.112). It was filled with a mid to dark brown or a dark reddish brown silty clay which had very few inclusions *c.*1% small stones. There was two possible placed pottery vessels within this ditch, one of which was very abraded and accounts for most of the 175 sherds recovered from this ditch (See Wadeson, Table 11). There was a complete Nene Valley folded beaker was found in a 0.3m² area and this was situated adjacent to the head of burial **564** (Fig. 9) and substantial remains of the second vessel was found in a 0.3m² area some 3m to the south. Elsewhere within the ditch there was sparse quantities of fairly abraded pottery but included a decorated Samian sherd dated *c.*AD 120-200. There were also small quantities of animal bone etc. but very few remains. This is also true of soil sample 34 which only produced small quantities of charcoal.

3.5.11 Four metres to the west of ditch 3, there were three post holes (**619**, **619** and **634**) which ran roughly in a north to south line, possibly representing a fence line (*c.* 4m long) which could have been the western limit of the enclosure. These features were near the western baulk of the excavation area and there no other features of this period to the west of them. The northern two post holes (**619** and **608**) were similar. The former (**619**) was undated, oval in shape, 0.25m by 0.17m and 0.24m deep, with near vertical sides and a slightly concave base (Fig. 11, S. 115). It was filled with a sterile medium brown silty clay but with a large quantity of charcoal (sample 31). Post hole **608** was also oval in shape, 0.28m by 0.18m and 0.31m deep with vertical sides and a flatish base (Fig. 11, S.114). Its backfill was a dark brown silty clay with frequent charcoal with three pottery sherds which were dated as Iron Age and middle 1st to 2nd century AD in date. With its fill there were also some weed seeds, small burnt bone and frequent charcoal (sample 28; See Fosberry, Section D.4). The southern-most post hole (**634**) was circular, 0.53m in diameter and 0.12m deep with moderate sides and a concave base. It was filled with a sterile middle orange brown silty clay.

3.5.12 Cremation pit **528** was urned and furnished but had survived in a very truncated state. The cremation pit was within the north-western part of the enclosure, was sub-circular 0.71m by 0.6m and 0.07m deep with gentle sides and a flatish/slightly concave base (Fig. 7). There were two vessels (526 and 580) placed up against the southern edge of the pit but most of the pit was empty, suggesting it is was very likely there were originally further artefact(s) buried but had not survived (Plate 1). The most southern vessel (SF 32; context 526) was a funerary urn which contained 158g of an adult but could not be sexed (See Uí Choileáin, Section D.1). Directly to the east of this funerary vessel was an assessory vessel (SF 33; context 530). The pottery vessels were jars in

a reduced ware with the cinerary vessel being a hand made local copy (LPRIA type) with the accessory vessel a local wheel or partially wheel thrown jar. They are likely to be middle 1st century AD date although it is possible they are slightly later but certainly before the middle 2nd century. The fill of both vessels were sieved but no artefacts or ecofacts, apart from the cremated bone from the funerary urn, were recovered from them (samples 25 and 26). The pit was then backfilled with a sterile orange brown sandy clay with only a few charcoal flecks within it (sample 24).

3.5.13 Burial **564** (Sk. 610) contained a moderate to poorly preserved, fragmentary skeleton (Figs. 9 and 10; Plate 4). The inhumation was within the western half of the possible mortuary enclosure, respecting its ditches as it was placed parallel *c.*1m to the west of ditch 4 and *c.*1m perpendicular to the south of ditch 3. The burial was within a north to south, sub-rectangular pit 1.89m long, 0.7m wide and 0.59m deep with near vertical sides and a flatish base. This was a very deep grave, originally c.0.9m deep as the original ground level had not been included. There must have been a reason why this burial plot had been dug so deeply through extremely hard boulder clay. The skeleton was of an adult and was probably a woman but the bones did not survive well enough to give other information such as her height (See Uí Choileáin, Section D.1). The grave goods accompanying this person (rings; see below) further supports the idea she was a woman (See Crummy, Section C.2).

3.5.14 The woman was placed in the grave in a supine, largely extended, position. Her right hand was over her pelvis and her left hand, lay across the upper arm against the western side of the pit. There were five copper alloy rings on two fingers of this hand. Her legs were together in a flexed position with the feet against the middle of the south baulk of the pit. The reason why she was partly flexed and in a slightly cramped position may be due to how she was positioned in this narrow grave. The grave was dug to the right length to have accommodated her laid supine and extended but she was found with a 0.2m gap between the northern edge of the grave and her head. The reason for this position may therefore be due to rigormortis setting in before burial, making it problematic to lay her totally extended. Alternatively, this 0.2m space may have been filled with grave goods placed above the head but these did not survive.

3.5.15 The skeleton had some interesting details with the long bones displaying exaggerated muscle attachments. The women had lost all her teeth except a single premolar, perhaps these had been lost due to her diet. Only three fingers of her left hand survived, with these bones in good condition, albeit stained green by leeching from the copper-alloy rings. There were three rings on the southernmost finger (SFs 37-39), the middle surviving finger was unadorned and two rings on the northernmost finger (SFs 40-41)(Plates 3 and 5). The number of rings being worn is unusual and imply she was either economically or socially important within her community (See Crummy, Section C.2).

3.5.16 In the backfill deposits of **564**, the lower 0.39m (609) consisted of a mid grey orange clay with occasional fine and medium pebbles and flints and occasional charcoal flecks with three pottery sherds dating to the Iron Age and middle 1st century to 2nd century AD. Soil samples from the chest and head area (sample 29) and legs (sample 30) and produced no artefacts or ecofacts. The middle deposit (563), 0.08m thick, was a sterile middle orange brown silty clay, with occasional fine pebbles and chalk lumps as well as a few charcoal flecks and 4g of fired clay. The soil sample (23) from it produced only small charcoal flecks. The upper deposit (562) was another sterile fill comprising a middle orange grey silt, with occasional medium sized pebbles/stones and some

charcoal flecks. Likewise the soil sample from this deposit produced only small quantities of charcoal flecks (sample 22).

3.5.17 Burial **550** (Sk. 551), survived in good condition albeit the skeleton was slightly fragmentary (Fig. 8; Plate 2). The burial had been placed parallel and *c*.0.5m to the north of the former boundary ditch C. It comprised an east to west sub-rectangular grave 1.58m long, 0.7m wide and 0.24m deep. This grave had very steep to near vertical sides and a slightly concave base. At the bottom of the pit two bone spindle-whorls were placed (Fig. 8, SFs 46 and 47). On top of these objects an adult woman,1.65m tall, and upwards of 45 years old, was buried on her right side, mostly extended with her head to the east, her hands roughly together in front of her pelvis with her legs together in a semi-flexed position. Her remains displayed evidence of severe osteoarthritis, possible Schmorl's nodes and worn teeth (See Uí Choileáin, Section D.1). The depositing of spindle-whorls within Roman burials is unusual and not only marks her probable former craft and high status but also adds to the weight of evidence for wool and cloth production (See Crummy, Section C.11).

3.5.18 The burial (**550**) was backfilled by a single deposit (553) comprising a sterile mid grey brown silty clay with some small stones including natural flint. Two soil samples were taken, sample 21 from the backfill around feet and sample 33 from the region of the head. Whilst only charcoal was recovered from sample 21, there were a few abraded cereal grain seeds from sample 33 (Fosberry, Section D.4).

3.5.19 There was a single post hole (**91**) within the eastern part of the enclosure which was directly to the north of ditch 1 (Figs. 6 and 11). It was sub-rectangular in shape measuring 0.28m by 0.20 and 0.25m deep (Fig. 11, S. 4) with vertical edges and a flat(ish) base. The post hole was backfilled with a charcoal enriched fill but this was not too dark (dark grey brown silty clay) and did not have enough charcoal to say they were burnt *in situ*. The post hole contained one very small abraded pottery sherd of 1st to 2nd century AD pottery. A soil sample from its fill found only found sparse charcoal (sample 5).

3.5.20 Within the western part of the enclosure there were three undated features, possibly post holes (**624**, **626** and **628**) within a 1.5m area less than 0.2m to the south of ditch 3 and less than a metre to the north of cremation **528**. The post holes were very close to each other forming a rough triangle. It is uncertain what the function of these features, even if they related to the mortuary enclosure. All three post holes were very shallow, between 0.25m and 0.35m in diameter and 0.02m and 0.06m deep with gradual sides and were filled with a mid brown silty clay.

3.5.21 Within the enclosure there were two further post holes (**590** and **604**), both undated, seven metres apart (Figs. 6 and 11). These post holes had very different profiles and it is uncertain what their function was. The eastern post hole (**590**), was circular, 0.29m in diameter and 0.21m deep with very steep sides and a concave base (Fig. 11, S.107). It had an internal post-pipe which contained frequent charcoal flecks (588) and an external outer fill comprising a compact mid reddish-brown clay (589). The western post hole (**604**) was also circular, 0.38m in diameter but only 0.10m deep, and had vertical to moderate sides and a flat base (Fig. 11, S.108).

3.5.22 Directly to the north of boundary ditch C, within half a metre of its northern edge, there was a line of three post holes running parallel to the ditch, east to west, over a 9m distance (**565**, **568** and **93**) and may have represented a fence line. All three post holes were directly to the south of the possible mortuary enclosure ditches (1 and 4) and inhumation burial **550**.The post holes were not equally spaced and there may have

originally been other post holes which have not survived. The western-most post hole (**565**) and the centre post hole (**568)**, which was half way between the butt-end of ditch 4 and boundary ditch C, were very similar. These post holes were circular, 0.3m in diameter and 0.10 and 0.08m deep respectively. The former had steep sides while the latter had moderate to sharp sides but both had concave bases. The primary fill of both post holes (566 and 568) consisted of a tightly packed layer of angular stones, including flints, collectively 0.06m and 0.04m thick, which may have acted as a pad for a post. The upper fills were both undated dark red brown silty clays (567 and 569). Post hole **93**, directly to the south of ditch 1, was sub-rectangular in shape measuring 0.30m by 0.23m and 0.15m deep. It had a near vertical edges and a flat(ish) base and backfilled with a dark grey brown silty clay with some charcoal. Two very small abraded pottery LPRIA sherds was recovered but soil sample 6 only produced sparse charcoal.

Domestic remains in the evaluation (Phase 5) (Fig. 6)

3.5.23 There were three inter-cutting Roman pits (**97**, **101** and **103**) in the extreme south of Trench 40 and these cut boundary ditch A. The latest was pit **101** which cut the two other pits. They were sub-circular in shape, fairly large, up to 2.5m in diameter and 0.85m deep (Fig. 13, S.5). Due to their positions within the trench, pit **101** was largely excavated and the other pits only sampled so the comments below need to be taken with some caution. The sides of the pits were moderate to steep (*c*.45º to 60º) and it is uncertain what their function were. Although there was some natural clay in the subsoil, far better clay deposits were found in evaluation trenches further down the hill to the north indicating these were not for quarrying clay. If the pits had been for storage they would have been vertically sided. It is just possible the function may have been as cess pits but this was not supported by results from the environmental samples and their inter-cutting nature would make this unlikely.

3.5.24 Pits **97** and **99** were backfilled with a single middle yellowish brown silty clay deposit whereas pit **101** had three backfill deposits with the lower and upper consisting of a middle yellowish brown silty clay and the centre layer being a dark greyish brown clayey silt. Pit **101** had been backfilled with a large amount of domestic waste comprising 138 pottery sherds (nearly 2kg) of largely unabraded pottery with an average sherd size was 13.3g (See Wadeson, Section C.7 (Table 11). Within the assemblage there were some vessels which survived to give a part profile including a Sandy Grey ware jar (Fig. 18)). Only one definitely residual LPRIA sherd was recovered, all the remainder were dated as Early Roman with most as being MC1-C2 or MC1-MC2 periods. There were no later pottery in the assemblage and it is likely that this collection represents a primary assemblage. Other artefacts included a copper-alloy disc (SF 6; not illustrated) which was pierced off-centre. The other two pits (**97** and **103**) had far fewer artefacts which implies that pit **101** was backfilled quickly from nearby domestic area(s) but the backfill of the other pits were probably from other source(s). Soil samples were taken from two pits (**97** and **101**) but only a single cereal grain was recovered from the latter (sample 2).

3.6 Layer/footpath 560 and ?Late Roman manure scatters (Period 2, Phase 6)

3.6.1 Possibly related to the funerary activity was a 4th century layer or footpath/trample (560) which cut into the former boundary ditch C, 11m to the south-east of the possible mortuary enclosure (Fig. 6). This subsoil layer was *c*.3.2m by 3m in size and 0.1m deep, and was a mid reddish brown clay silt. It is not inconceivable that this layer was caused by people crossing the former ditch from the late Roman settlement to the

south of the excavation area to the former mortuary enclosure/funerary area. The date of three of the four coins recovered from the layer or adjacent to it were late 3rd century with the other late 4th (See Crummy, Section C.1). It is important to point out that there was no other features with Late Roman artefacts within. The coins were very close to each other. Three coins SF 27-29 were recovered from this layer (560) within a 2m area (with a fourth coin, SF 31, just to the west within the top of boundary ditch C).

3.6.2 In addition to this layer, in both the 2008 evaluation and 2009 excavation, there were several late Roman artefacts, including a late Roman coin, found in the topsoil or unstratified across the site. There were no concentrations of material but these artefacts may have been derived from manure scatters from the nearby Late Roman settlement.

3.7 Undated pits and post holes (Fig. 6)

3.7.1 There were a few pits and post holes which may date from any period before the medieval. Pit **642**, directly to the north of the mortuary enclose was sub-rounded, 1.34m by 0.9m and 0.24m deep with gradual sides and a flatish base. It was filled with a yellowish brown clay silt (640) primary fill and mid reddish brown clay silt upper deposit (641). Pit **591**, directly to the west of the mortuary enclosure was undated, it was oval in shape, 1.15m by 0.95m and 0.24m deep with moderate sides and a concave base. It was filled with a reddish brown silty clay.

Post hole **513** in the centre of the site (not on plan), had no other features around it, was sub-rounded 0.50m by 0.42m and 0.14m deep with moderate sides and filled with a yellowish brown sandy clay.

Possible features or natural infilling of hollows (Fig. 6)

3.7.2 Three nebulous features (**532**, **536** and **538**) were found directly to the east of the possible mortuary enclosure/shrine. They all were very diffuse with no clear edges and up to 0.1m deep and all filled with a mid orangey brown silty clay (Fig.6). There were a few artefacts within the fills of **532** and **536**, comprising a little pottery, flint and bone recovered. They may be shallow pits but more likely to represent natural infilling of hollows. Possible pit **578**, directly to the north-east of these three possible features, was sightly irregular, kidney shaped although edges were very hard to distinguish but seems to have been up to 2m in length and 1.5m wide and 0.22m deep. There were two small Early Roman pottery sherds within its backfill.

3.8 Period 3: Later post-medieval and modern features

3.8.1 Later post-medieval and modern features were found in the excavation and these features were found across the site in the previous evaluation and were extensively sampled (Atkins 2009 table 3). Mostly these comprised north to south ditches running across the site, probably remnants of furrows which were backfilled with artefacts (pottery and roof tile) dating into 18th century as well as probable modern 18th or 19th century field boundaries. These ditches were seen in the excavation area and due to previous work very few of these were sampled.

3.8.2 The few exceptions were two very shallow furrows **546** and **593** to the east and west of the possible mortuary enclosure, which survived 0.1m and 0.18m deep respectively. An early 1st century AD Colchester brooch (Fig. 14, SF 26) was recovered from furrow **546**. Furrow or ditch **559** was probably the continuation of **546** to the south and it only survived up to 0.08m deep. Directly to the west of **559** were two very shallow (0.07m and 0.08m deep respectively) undated north to south ditches or furrows **555** and **557**.

At the far northern side of the site, were three north to south ditches and recuts **508**, **510** and **514** and furrow **516**.

3.8.3 Drainage ditches containing ceramic pipes, both in "horse shoe type" arrangement and round pipes, were found across the site with three sampled within the north side of the excavation (**502**, **504** and **506**)(not on plan). They post-date the furrows as drainage pipe **506** cut furrow **516** and they are likely to have been put in during the 18th and 19th centuries. In the 2008 evaluation there were also post-medieval/modern 18th/19th century quarry pits at the far northern part of the site near Witchford Road and modern WW II former buildings within a *c*.50m² area adjacent to Stirling Way (Atkins 2009).

3.9 Finds summary

3.9.1 The evaluation and subsequent excavation produced a range of 10 artefact types but the numbers of finds in each of these categories were only small to moderate quantities (see Appendices C.1-10). These ten categories consisted of firstly, 6 Roman coins dating from the 2nd to the later 4th centuries. Secondly, the other metal objects comprised a single prehistoric object; a Bronze Age or Early Iron Age awl, a dozen copper-alloy and iron Roman artefacts which included 2 brooches, a hair pin, 5 copper-alloy rings from a burial, a fish hook and a collar ferule. Small quantites (0.533kg) of Roman metalworking slag were found from a single Early Roman ditch. These remains included smelt and smithing furnace cinder suggesting some working of iron. Across the site there were 33 worked flints (Neolithic and Bronze Age), with two debitage flakes possibly contemporary in a Beaker pit but the remainder from residual or unstratified contexts. Two Roman glass objects comprised a bead and a fragment of an ungent bottle. There were 46 sherds (0.174kg) of Neolithic and Bronze Age pottery which came from two Beaker pits within the site. Iron Age and Roman pottery consisted of 1673 sherds (10.58kg) from a range of features including a cremation, ditches, pits and a few post holes. The Iron Age material comprised very small quantities of residual Early to Middle Iron Age sherds, with a few more Later Iron Age and LPRIA material. The vaste majority of the pottery dated from the middle 1st century AD to into the second century with very few imports or regional wares represented. There were just 16 sherds of post Roman pottery as well as a small quantity of post-medieval roof tile. Fired clay was very poorly represented with just 0.216kg found in 16 Iron Age/Roman contexts. Both worked bone objects found in the excavations were Roman in date. Two spindle-whorls were deliberately placed in a probable 2nd century inhumation burial.

3.10 Environmental summary

3.10.1 There were four environmental reports from the site (Appendix D.1-4). The human remains comprised three burials within a possible mortuary enclosure. There was a truncated probable middle 1st century AD cremation with 158g of bone of an adult recovered from within an urn. Two Roman inhumation skeletons were found with the bone survival poor to good. The remains consisted of a probable female adult and mature female adult both with some evidence of a life of physical hardships. The animal bone remains only consisted of a small collection with 229 fragments of which 93 were classed as countable bones. There was some evidence for site processing/primary butchery of carcasses implying some pastoral farming taking place. Only five mollusca were found in Roman features implying there was very few shells being consumed. Twenty-five bulk samples were taken ranging from 10L to 30L in size. Preservation of remains was generally poor but was enough to give some indication of land use. There was a general lack of evidence for any agricultural practice such as crop processing

with only a hanful of cereal grains in four samples and a few weed seeds from one of these.

4 Discussion and Conclusions

4.1 Neolithic and Earlier Bronze Age activity and occupation

4.1.1 While the main occupation on the Witchford recycling site dates to the Iron Age and Roman period there was probably sporadic visits to the site in the Earlier Neolithic to Early Bronze Age. This can be seen in the Early Neolithic flint scatter and two Late Neolithic/Early Bronze Age Beaker pits found during the archaeological work. The drift geology of the Witchford recycling site was Till (stiff clay) with the nearest water supply *c*.300m to the north. There was no worked flint found from the relatively low land on the northern part of the site - all the 33 worked flint was recovered on higher ground. A few were found in the middle part (at least 13mOD) but most flint came from the northern edge of the southern knoll plateau at *c*.15.5mOD overlooking the valley side (where the two Beaker pits were also found) and along the slope immediately below.

4.1.2 The thirty-three worked lithics were recovered from within later or unstratified features with the possible exception of two debitage fragments from Beaker pit **549**. Of these flints, five blades could be dated to the Early Neolithic, as well as other chunks and flakes dating to the Neolithic and Bronze Age. Hall recorded that the most common early sites were mixed Mesolithic and Neolithic flint 'scatters' (Hall 1996, 154) and as such the development area conforms to Hall's assessment. These flints from the Witchford recycling site, although relatively small in number, are in contrast to the far smaller number of flints (14) recorded in all the archaeological work to the south and east (collectively, many times the size of the development area). The earliest flints from these areas comprised possible Mesolithic material but most were Neolithic to earlier Bronze Age (see Section 1.3.1 above). As with the present work in the development area, blades (five) were by far the most common tool. It is uncertain whether the recovery of these number of blades is significant.

4.1.3 A Bronze Age double-pointed awl was found near the top of the slope, c.25m to the south of two Beaker pits (**549** and **575**). This awl (and some of the Neolithic/Bronze Age flint scatter) could have been contemporary with these pits, but could be slightly later. The double-pointed awls first appear in the archaeological record within Beaker burials (see Crummy, Section C.2.5). The two Beaker pits were uncovered around the same location as most of the flints near the top of the knoll. Artefacts within these pits imply some domestic activity taking place within the site. This is backed up by fatty acids being recovered in the preliminary results from lipids samples absorbed in at least some of the Beaker pottery sherds (See Šoberl and Evershed, Section C.10). There were 46 sherds of pottery recovered from the excavations weighing 176g - and represented seven different vessels, although a Groved Ware sherd may have been intrusive and three sherds from a possible Late Bronze Age vessel may have been residual (See Mullin, Section C.6). This report shows that the pottery seems to have been made locally. The fabric and the poorly executed decoration of the Beaker pottery from these pits were similar to Beaker pottery found within burials 5km away in Ely but, importantly, they were different to the Beaker pottery found *c*.20km away at Fenstanton (Chapman *et al* 2005). This may imply some individuality within groups over a small area but not over larger distances.

4.1.4 The difficulty is in trying to interpret the significance of these discoveries - and it may be dangerous to suggest too much from relatively few remains over about 1 000 years or so. The excavation area was also relatively small and other features of this period may be nearby. It is also difficult to put these discoveries into context as little has been found dating to these periods across this part of Cambridgeshire. Beaker pits are relatively

scarce and so their recovery here is of local importance. The Witchford recycling site was the only one of the excavation sites in the immediate area with pre-Iron Age features (two Beaker pits), and the present development area found far more flint. Overall, it may imply that the area around the proposed Witchford recycling site was more attractive to prehistoric people than nearby sites.

4.1.5 Hall in his extensive fieldwalking survey and overview of remains found in the Isle of Ely and Wisbech only recorded a few lithic sites dating to the Bronze Age, some produced pottery but the main monuments of the period were barrows and activity was recorded by flint scatters (Hall 1996, fig 87;157). An HER search for Bronze Age sites and artefacts within a 5km radius of the site found no other Beaker pits (Fig. 19). In fact in the resulting 57 separate HER records, there were no domestic or agricultural features which definitely dated to the Early Bronze Age (where dated they lie in the Later Bronze Age; see below). There was a find spot of Beaker pottery in Soham 3.5km to the south-east but it is uncertain if this pottery related to a feature or found in a layer (Fig. 19, CHER 06400; TL 5402 7671). The HER records six records for Bronze Age human remains (ring ditch or barrows) within 5km of the Witchford recycling site to the north-east, south-east and south-west (Fig. 19). Beaker burials have been uncovered 5km to the north-east of the development area in Ely comprising a barrow and Beaker burial in 1958 (CHER 06136) at TL 550 816 (Hall 1996 Ely Site12). Nearby to this burial at TL 548 806, a fragmentary Beaker burial was found in 1914 and later, adjacent to this, a further one in 1926 (CHER 07245); PCAS 29 (1928), 106). In Soham Parish, 3.5km to the south-east a beaker burial was found (CHER 07020; TL 539 768). At Wilburton a possible barrow has been found 4km to the south-west (CHER 05827; TL 4844 7668) and a second one 5km to the south-west (CHER 05882; TL 4860 7411). At Wicken there was a ploughed out barrow 5km to the south-east (CHER 06993; TL 5498 7448).

4.1.6 In the Ely parish, Hall recorded several Bronze Age flint scatters in the area, with most parishes having at least one site although none have been recorded within Witchford parish. The nearest seem to be about 5km away, for example at Wentford to the west (Hall 1996, Wentford parish, site 2, 44-5) and Stuntley, 5km to the east being recorded as the main Bronze Age lithic site yet found within Ely parish (Hall 1996 Ely site 4, 35).

4.1.7 It is tempting to view the relatively large numbers of Bronze Age axes and other lithic and metal artefacts within the 5km search area of the site, collectively 49 of the 57 HER records, as suggesting that tree felling, hunting etc. was widespread throughout the Bronze Age in the Ely area but there was little in the way of archaeological evidence for any permanent agricultural and domestic occupation until the Late Bronze Age. Certainly, on higher ground, by the Late Bronze Age there is far more agricultural use across the landscape compared with the Early Bronze Age where no definite sites are known. In the search area, the HER records (Fig. 19) list two causeways, at Little Thetford (CHER 06987; TL 5373 7565) and at Soham (CHER 07064; TL 561 757) with the former probably Late Bronze Age in date but the Soham example was not closely dated. There was a possible Late Bronze Age field system in Ely (CHER MCB17963; TL 5375 8086 (Bush 2008 and Hunter 1992)). Two possible Late Bronze Age ditches, a Late Bronze Age pond-like hollow was found at at Trinity fields (TL 52759 80267) indicating livestock being used as well as fragment of human skull (CHER 15553; Masser 2001; Evans *et al* 2007, fig. 16). A Late Bronze Age oval pit (103) was found on land off the A10 Ely Bypass at 18m OD and this measured 1.28m by 1.03m and 0.37m and had substantial remains of two post-Deverel Rimbury 'plain ware' vessels and a animal bone fragment (CHER CB15536; TL 53884 81283 (Robinson and Bray 1998)). At West Fen Road, 5km to the north-east, 25 Bronze Age pottery sherds, probably a single urn were recovered as surface material (Mortimer *et al* 2005, 15). In most of

these Late Bronze Age sites there was a background scatter of Late Neolithic and Bronze Age flint and in the case of West Fen Road some Neolithic pits (Masser 2001; Robinson and Bray 1998; Mortimer *et al* 2005).

4.1.8 Elsewhere in Cambridgeshire there are a few places where there is more substantial evidence for Beaker domestic activity. Fenstanton is one of the few Cambridgeshire sites where Beaker pits have been recorded and domestic occupation has been suggested (Chapman *et al* 2005). Here, four Neolithic pits were found and these were followed by several Early Bronze Age features including seven inter-cutting pits, some producing Beaker pottery and flint. Even at Fenstanton, the Neolithic and Beaker pottery only numbered 142 pottery sherds (1015g) although 37 individual Beakers were identified. This led to the theory that they had been deliberately deposited as token pieces of domestic material. It has been argued by Gibson (2000) that the depositing of several sherds from many vessels denotes earth rituals designed to ensure the fecundity of the earth and her resources. There might also be another aspect to this, which is that Beakers (including the Ely ones) tend to have grog in the fabric and it could be that Beakers are being fragmented and "recycled", the non-recycled bits ending up in pits (pers. comm. David Mullin). The parts of *c*.5 vessels, hazel nuts and a couple of seeds recovered from these pits does indicate some stop over/visit(s) of a little time. The upper fill of Beaker pit **549** was a dark grey brown silty clay deposit, with frequent charcoal flecks and a few burnt clay flecks. Elsewhere similar fills of Beaker pits at Fenstanton have been interpreted as deposition of hearth debris (Chapman *et al* 2005, 18). Whatever these Beaker pits signify, it is important to say that what we're not looking at is some sort of "domestic" activity on the site (pers. comm. David Mullin).

4.1.9 One of the main reasons for the lack of evidence for Early Bronze Age domestic occupation in the local archaeological record may be due to height; in the Early Bronze Age the water levels were lower and most Early Bronze Age domestic occupation may have been at about 1m to 0m OD. This is a height where there is presently very little housing development, and hence few sites have been excavated. There are three domestic sites all at around this height (Sutton Gault, less than 10km to the west (Connor 2009; Rees 2009; Webley and Hiller 2009); Shippea Hill, *c*.15km to the north-east (Clark 1933) and Hockwold-cum-Wilton, *c*.25km to the north-east (Bamford 1982).

4.1.10 At Sutton Gault, at around 0mOD to 2mOD, archaeological work has found widespread Late Mesolithic to Early Bronze Age remains with permanent occupation from the Late Neolithic comprising domestic, agricultural and funerary use of a small island of river gravel terraces surrounded by deep Nordelph peat deposits interleaved with Fen Clay. Excavations have found dozens of pits, a few large water holes and several ring ditches and barrows have been uncovered or recorded from air photographs. There is evidence from environmental samples of cereal grains and burnt hazel nuts shells. Significantly, no later prehistoric, Romano-British, Saxon or medieval sites are known on the Sutton Gault island or in its near vicinity (Rees 2009). This is presumably because during the Later Bronze Age and later, this area became uninhabitable due to rising flood levels and these earlier features were mostly sealed by a peat layer (Rees 2009). At Hockwold-cum-Wilton, the site (over several fields) was just below the then fen peat and was only found in the late 1950's and early 1960's after the peat had shrunk (Bamford 1982, 8). Many hearths and floors were uncovered with a vast quantity of artefacts recovered including several thousand pottery sherds. The Shippea Hill occupation site was on low islands, just above, and surrounded by contemporary fresh water fen (Clark 1933). The Fenstanton site was at 6-7mOD whose occupants had possibly exploited the fen edge whereas the Witchford recycling site was at a far higher

location at 15.5mOD and well away from the fen edge. The reason for Beaker use at Witchford is therefore uncertain - perhaps for short stay aways for hunting.

4.2 Middle/Late Iron Age to Middle Roman settlement

4.2.1 The current site is near to several other archaeological evaluations and excavations to the east and south which have found Middle to Late Iron Age and/or Roman remains over an area of *c*. 400m by 400m (Fig. 4). The area covered by this archaeological work has taken place over many years following *ad hoc* planning applications and this has meant a patchwork of investigations over this area with the majority of the settlement either unexcavated, or destroyed by the construction of the WWII airfield or by later buildings constructed without prior archaeological work. That being said, enough has been investigated to suggest two separate domestic *foci* within this settlement, probably representing two or more extended families with one on the Witchford recycling site and the other *c*.300m to the east and these two domestic centres continued for several hundred years.

4.2.2 Within the excavation area, Middle/Late Iron Age remains consisted of two pits which were uncovered on the extreme south-western part of the site. One of the pits had moderate amounts of pottery and animal remains suggesting domestic activity. It is likely that other Middle/Late Iron Age remains are in the vicinity, just outside the excavation area. In the very late Iron Age, there was a large ditch/ settlement boundary, probably of a defensive nature. A possible mortuary enclosure was established in this period adjacent to the north of it. In the Northamptonshire Archaeological excavation area 300m to the east, there was far greater evidence for domestic occupation with the start of settlement possibly contemporary in the Middle/Late Iron Age with houses (ring ditches), field boundaries and pits (Holmes 2008; Simmonds and Mason 2008 and Holmes and Simmonds 2009). It is important to note no Iron Age pottery were recorded in either the ASC (Thompson 2009) or HAT (Crank 2000 and Ralph 2003) excavations to the east and south but, unfortunately, there has been intermittent archaeological work across the area and limits of settlement and their relative sizes are unknown. This Middle/Late Iron Age start of both *foci* in the settlement is roughly of similar date to many of the other nearby Iron Age/Roman settlements such as Prickwillow Road, Hurst Lane and Wardy Hill (Atkins and Mudd 2003; Evans *et al* 2007; Evans 2003) and implies that population and farming was expanding in this period.

4.2.3 The Witchford settlement continued into the Roman period, with domestic settlement directly to the south of the large strategic ditch (see below) where pits and ditches as well large quantities of LPRIA/Early Roman pottery were found as well as animal bones with butchery marks. Likewise, domestic occupation continued within the Northamptonshire Archaeology excavation area with, for example, significant amounts of domestic waste found within ditches (Holmes 2008). Adjacent to the Northaptonshire Archaeology area there were also Early Roman features including post holes within two probable enclosures at ASC Area (Thompson 2009). The excavations, *c*.400m to the south-west (HAT) found only one ditch dating to the Early Roman period which may suggest this was part of the settlement's field system (Crank 2000).

4.2.4 Occupation on the Witchford recycling site also continued into at least the Middle Roman period with the mortuary enclosure ditches possibly being open into the 3rd century. There was only a single Late Roman layer found within the development area. The only other artefacts of this period were found in the topsoil and subsoil largely from the test pit survey in 2008 (Atkins 2009). These Late Roman artefacts were few in number, not concentrated in any area, and consisted of a 4th century coin and some

sherds of abraded Roman pottery dating up to the 4th century with an average sherd weight of just 4g. This seems to suggest that these artefacts were deposited as manure scatters for farming after the settlement had gone out of use in this area or as accidental losses as is likely in the case of the coin. The Late Roman settlement is likely to have moved from the development area to the areas just to the east and south (HAT and ASC excavations).

Possible defensive ditch

4.2.5 In the Late Iron Age a large ditch was constructed which cut the Middle Iron Age remains (and was recut in the Early Roman period). The ditch followed the top contour of a meandering ridge at *c.*16mOD. This ditch ran roughly parallel to a causeway route (stream/drain) down to the west giving it a good view (from its internal bank) of this valley bottom. This ditch and its re-cut survived to more than 2.8m wide and up to 1.04m deep (this should be increased by *c.*0.3m due to the subsequent lowering of the ground surface). The internal bank probably survived till the destruction caused by the building of the WWII airfield. Walker in 1910 recorded the Witchford recycling site as a Roman Camp (see 1.3.3 above). It is possible the role of this ditch can be linked to the name Witchford which derives from 'the Watch on the Ford'. The remains in the development area may back up Evans's theory that Witchford has a very important strategical position controlling the causeway route from Grunty Fen to The Cove and that the siting of Iron Age sites may be equally strategic (Evans 2003, 1 and 266-8).

4.2.6 The size of this very Late Iron Age/Early Roman ditch in the development area suggests that it may be more than a boundary ditch. It is of the same size as the concentric circuits at Wardy Hill and even the main sub-square enclosure from West Fen Rd which had ditches 2.50-3.00 metres wide and 1-1.30m deep leading the speculation that these two sites may be classed as defended (Evans *et al* 2007, 74).

4.2.7 The relatively late date of this strategic ditch (Late Iron Age) indicates that there may have been a pressing reason to construct this feature - certainly digging through stiff clay would have been labour and time intensive. It is important to note some of the Middle Iron Age and Late Iron Age ditches on the Northamptonshire Archaeology evaluation site, 300m to the east, were also more than a metre deep (Holmes 2008), but how these relate, if at all, to the development area is unknown.

4.2.8 The large strategic boundary ditch went out of use in the Early Roman period possibly at the same time that Wardy Hill ringwork went out of use in the last quarter of the 1st century AD and here the inhabitants were seemingly displaced (Evans 2003, 270-1). How significant this abandonment is uncertain as all other nearby Iron Age sites, which has been subjected to large scale excavation, have continued into the second century AD (Evans 2003, 271).

Possible mortuary enclosure

It is likely the possible mortuary enclosure, to the north of the defensive ditch, started in the LIA and continued into the Middle Roman period (when it went out of use). The defensive ditch went across the whole development area so the entrance way to the mortuary enclosure was presumably to the west or east of the development area. This would mean there were possibly two contemporary religious structures in relatively close proximity as a probable Iron Age temple has been postulated 1.5km to the north-

west from an air photo which shows a double ditched enclosure (Fig. 19, CHER 07155; TL 511 800).

4.2.9 The development area is only the fourth site in the Ely area (Ely sites Prickwillow Road and West Fen Road and Watson's Lane, Little Thetford) where more than one Roman burial has been found during excavation. Only on the Prickwillow Road site (5 cremation and 16 inhumations) were more than three burials found. There have been several major excavations in and around Ely and the paucity of Roman burials is probably significant as, at best, only a small percentage of the population of each settlement was being buried. The lack of burials around the Ely area is mirrored in many other Roman rural areas in Cambridgeshire. A survey of Roman burials in Cambridgeshire and Peterborough found most burials/cemeteries were found near to former Roman towns with relatively few from rural parts with the area around Ely nearly devoid of remains (Taylor 1993, Fig. 6). The survey found a mixture of burial types practised in the county with inhumation cemeteries, cremation cemeteries, a mixture of the inhumation/cremations within cemeteries and several barrows.

4.2.10 What makes the burials within the Witchford recycling site of greater interest is that the three burials were buried within a mortuary enclosure which seems to have been in use for up to at least 100/150 years. The burials were bounded by ditches and away from the domestic area to the south. None of the other sites with burials within the Ely area were associated with structures, all were either buried in a certain location in the settlement or singularly. It is possible that the enclosed eastern part of the possible mortuary enclosure was a shrine or for laying out the dead? The three LPRIA and Early/Middle Roman burials (one cremation and two inhumations) within the Witchford recycling site were part of a planned site, they were all positioned to the north and respecting the large strategic ditch and the enclosure ditches and it could therefore be argued that this Ely example was "regularly" laid out. This is important as it is thought that regular laid out cemeteries are an indication that formal funerary rite have been conducted (Philpot 1991, 144).

4.2.11 The mixed burial rite is paralleled only at one other settlement in the local area, at Ely, Prickwillow Road where there were five cremations and 15 inhumations were found within a cemetery area *c.*20m by *c.*15m. A further tibia was found in the subsoil which presumably came from a disturbed inhumation. An additional burial was placed in a ditch, 30m to the north-east of the cemetery (Atkins and Mudd 2003, 15-19). Further afield these mixed cemeteries seem to be more common, such as at Duxford to the south of Cambridge, where a mixed rite Late Iron Age and Roman cemetery with shrine have been found (Lyons and Roberts forthcoming).

4.2.12 The date for the start of the mortuary enclosure may be implied by the cremation (both urn and associated vessel) within its western side. This cremation is likely to be middle 1st century AD in date, either side of Conquest although it is possible they may be slightly later in date. The vessels were produced in local reduced ware fabrics of LPRIA type. If it is of middle 1st century date, this cremation is the first LPRIA type cremation yet found within the Ely Area and can be seen as constituting a locally made copy of Gallo-Belgic type cremation. The site is in East Cambridgeshire which is beyond the previous limits (South Cambridgeshire) of La Tène III type cremations (Philpot 1991, 6). It has been postulated that Iron Age cremations have not been forthcoming from any Ely sites which confirms the Aylesford-Swarling border was to the west of Ely providing a distinct archaeological divide (Evans *et al* 2007, 72). Aylesford-Swarling type pottery have been recovered from many sites in and around Ely, although admittedly in relatively low quantities (e.g at Prickwillow Road (Atkins and Mudd 2003)). It is

therefore safer to say that Ely falls within an area which did not embrace the Aylesford-Swarling culture to the same extent as some other places to the west although small quantities of this pottery type were being brought into the area and a few locally made copies were being produced.

4.2.13 The cremation within the development area had an associated vessel but there were no other grave goods. The relative paucity of 'grave goods' is typical of other later cremations found elsewhere in the Ely area. The cremations within the cemetery at Prickwillow Road may have started in the late 1st century or more likely from the 2nd and it possibly continued into the 3rd century AD (none of LPRIA type). All five cremations were placed in Sandy Ware vessels and only one of these had a single associated vessel but none had any other grave goods although two had two and three hobnails respectively (Atkins and Mudd 2003, 14). In Sutton, 5km to the east, there was a 2nd century cremation placed within a large storage jar with another jar also placed inside (Fig. 5; SMR 5744; Hall 1996, 58).

4.2.14 The two inhumation burials within the Witchford recycling site are very likely to have been later than the cremation, and probably date to the 2nd century. Inhumation **550** has a few Early Roman pottery sherds in its backfill whereas inhumation **564** seems to be associated with a Nene Valley beaker which dates from the latter 2nd century. To a certain extent the pattern of cremation first followed by inhumations later is mirrored at Prickwillow Road where the inhumations may only date to the 3rd to 4th century (Atkins and Mudd 2003).

4.2.15 The two inhumations within the Witchford recycling site were unusual in many respects and may point to both burials containing important local people. The burials were buried fairly deep (0.24m) and very deep (0.59m), through stiff clay and were interred with uncommon grave goods. In contrast most/all of the 15 inhumations from Prickwillow Road cemetery were buried in shallow graves and only three were buried with grave goods (all women) and these ranged from single bracelets in two graves and five in the other (Atkins and Mudd 2003). At West Fen Road, there were only three Roman/possibly Roman inhumation burials near the surface with no cut for the burials discernable and all were without grave goods (Dodwell in Mortimer *et al* 2005, 89). On other sites, only single burials have been found including ASC excavation Area B, 800m to the south where a crouched inhumation of probable Late Roman date was found with no grave goods (Thompson 2009). At Watson's Lane, Little Thetford, 4km to the south-east, excavations found three probable Late Roman inhumations, two males and a female (within a 12m distance), none with grave goods (Lucas and Hinman 1996; Evans et al 2007, 71 and fig. 17). Other burial rites may have been occurring in the Ely area, such as at Hurst Lane, where disarticulated single bone parts of 12 individuals were uncovered across the site in the backfill of Iron Age, Roman and undated contexts but there were no complete burials (Dodwell in Evans et al 2007, 66). At Wardy Hill and Trinity Fields there were also no Roman burials found despite extensive areas uncovered although the latter had an undated cremation (Evans 2003, Masser 2001).

4.2.16 The two inhumations at the Witchford recycling centre site both displayed exaggerated muscle attachments suggesting they both were highly physically active but this is not unusual and is often found in the women burials of this period (pers. comm. Zoe Ui Coileáin). Poor oral health can be seen in both skeletons, with burial **564** (Sk. 610; aged between 26 and 44 years old) having only one front tooth surviving at death, with the other teeth (?mostly) lost in adolescence through poor diet whereas the other skeleton from burial **550** (Sk. 551) had extremely worn teeth.

4.2.17 Two bone spindle-whorls wereplaced deposited just below the head of this mature woman (Sk. 551), one recovered from below the left shoulder and the other in the spine/ribs area. It is likely that the spindle-whorls were deliberately placed to be roughly behind the neck area as it was repeatedly favoured position for personal objects in female burials over the whole Roman period. In the Early Roman period a 1st century AD skeleton was buried adjacent to a shrine at Partney, Lincolnshire and had a bag with artefacts inside, placed directly behind her head (Atkins forthcoming) whereas a 4th century burial (HB 10) at Prickwillow Road had five interwined bracelets behind her neck (Atkins and Mudd 2003).

4.2.18 It is likely that the objects were seen as functional and so the two whorls also originally had the spindles attached (as with an example at Lankhills) but as with most other examples, the wood did not survive (Clarke 1979). The spindle-whorls are from within female graves and the function of whorl may therefore be the female equivalent of the agricultural implements or tools in male graves (Philpot, 1991, 184).

4.2.19 Spindle-whorls within Roman inhumation burials comprise only a tiny fraction of recorded burials, they are known from only 12 other sites in England, nine from one area in the south-west (Hampshire, Dorset and Wiltshire), one from Humberside, one from North Yorkshire and one from Peterborough at Normangate, Castor (Philpot 1991, fig. 30). The Normangate example was from one of three 4th century burials found (RCHM 1969, 24). The Peterborough example and now these Witchford spindle-whorls emphasises the use of wool and cloth production in the eastern region (See Crummy, Section C.11). The Witchford recycling site is seemingly unique in having two spindle-whorls within a single burial, as Philpot implies the other examples were a single spindle-whorl (in either shale, jet and bone), some with other grave goods. The Witchford example is early, as spindle-whorl burials usually fall within the last decade of the 3rd or into the 4th century (Philpot 1991, 184).

4.2.20 It is thought that the women who were buried with spindle-whorls were probably from the middle or higher echelons of the rural community and this is seen that graves furnished with spindle-whorls often show some degree of care such as some have been found in lead coffins (Philpot 1991, 184). "The spindle-whorl may act as a general symbol of status emphasising the role of the female in the domestic sphere, particularly spinning " (Philpot 1991, 184). If this assertion is true then the two spindle-whorls within the single grave may have been emphasising the status of the person. It is interesting to note that at one site, Lankhills there were nine graves with spindle-whorls, evenly distributed across the the 4th century burials and all from women, most were considered by Clarke to be a native practice (1979, 248) and may reflect occupations relating to the cloth industry (Clarke 1979, 369). It is important to consider wider implications on the symbol that, "If the spindle-whorl acts as a mark of identification for the gods or as a symbol of rank or status for the living, the presence of the item does not necessary require a belief in the afterlife" (Philpot 1991, 185).

4.2.21 The other burial (**564,** Sk. 610) was a woman who was wearing five rings on two fingers of her left hand. The wearing of rings forms an occasional but consistent feature of Late Iron Age and Roman period inhumations at rural sites over a wide area of central and western England with 24 graves where there are only ring(s) worn and a further 10 where they were also within a mixture of grave goods (Philpot 1991, 142-144). Most of the burials were female and they largely date from the middle 2nd century and became progressively more frequent in burials. The Ely example, probably dating to the later 2nd, is therefore a relatively early example and is more unusual because of the number of rings on her left hand. There are only a few examples of multiple worn rings including

two bronze rings on one finger from a burial from Barnwood, Gloucestershire (Clifford 1930, 253) and one burial from a well in Baldock which had five rings on its fingers (Stead and Rigby 1986, 391).

4.2.22 Rings were familiar ornaments in life and may have been left on the body at burial for sentimental reasons or through carelessness (Philpott 1991, 155). The Witchford example of five rings might suggest that the corpse was dressed up in her finery for burial.

4.2.23 The substantial remains of two pots placed within the enclosing ditch gully may relate to the ritual practice. The pots were both in 0.3m² areas within the sub-diving north to south ditch. A Nene Valley folded beaker was placed, presumably deliberately, parallel to the east of the head of Sk.610. The beaker vessel was complete and may have been placed as offerings. A grey ware jar was placed *c*.3m to the south in the same ditch.

Other artefacts and ecofacts

4.2.24 The small excavation has increased the paucity of Late Iron Age/Conquest period brooches in the Ely area by two. This is a relatively large percentage as only six or seven brooches of the Late Iron Age or conquest period have been found in the main five excavations in the Ely area and from an evaluation at St John's Road (Evans *et al* 2007, 72). It is uncertain if this implies the settlement was relatively wealthy for this part of Cambridgeshire - there were very few imports or regional pottery within the assemblage which may not be significant as other Ely sites have few imports. The number of non- metal small find objects recovered may also imply a settlement of average wealth. From this small area, a hair pin, two Roman glass objects (a bead and a fragment of an ungent bottle) were recovered.

4.2.25 There was good survival of animal bone on site with some evidence for site processing/primary butchery of carcasses implying some pastoral farming taking place (and possibly selling on excess meat). Only four bulk samples found any cereal grains and these were all less than five grains, mostly in poor condition. In addition small quantities of weed seeds were found in one sample. The lack of charred grain and weed seeds from the bulk samples was therefore not entirely due to poor ground conditions but probably because crop processing taking place away from the development area. Small scale metal iron working was also found with smelt and smithing furnace recovered. Only a handful of molluscs were recovered which implies that shells were only a small part of the diet. Overall, the evidence, as with most sites of this period, suggests the settlement was largely self-sufficient and may have been involved in many different activities.

4.3 Post-medieval and modern remains

4.3.1 There was only a background scatter of medieval artefacts from the test pits and these may have been within manure scatters as they were not associated with datable features. The only post-Roman datable features consisted of north to south furrows, backfilled with 18th or 19th century material (and may be from steam ploughing), boundary ditches and drains. The lack of medieval pottery from them may suggest that none were seemingly in use before the 18th century. The 18th and 19th century artefacts from them would tie in with the known very late enclosure of the former Ely field system in the mid 19th century (see 1.3.15 above).

4.3.2 The WWII feature in a c.50m² area next to Stirling Way, almost certainly contained buildings. A lot of modern brick rubble, some slate, asbestos and other modern items

were recovered in test pits within or adjacent to this area. The development area was later returned to fields soon after WWII.

4.4 Significance

4.4.1 The evaluation have found an Early Neolithic/Bronze Age flint scatter, two Late Neolithic/Early Bronze Age Beaker pits, and Middle/Late Iron Age to Middle Roman settlement remains within a *c*.60m by *c*.50m area and these should be considered collectively to be of regional importance. This level of importance is due to the uncovering of several rare features from the Beaker, Iron Age and Roman periods.

4.4.2 The two Beaker pits, one of which produced moderate quantities of pottery from at least four vessels is the first such feature feature from this period excavated in the Ely area. The Middle Iron Age to Middle Roman settlement remains also produced several very important features. The ditch of probable defensive function along the ridge, would have been an important strategic watching point on the causeway leading from Grunty Fen to the Cove. The Late Iron Age/Early Roman into Middle Roman mortuary enclosure directly to the north of this ditch is a rare example of this structure. The cremation is probably of Conquest period and would be the first LPRIA type yet found within the Ely area. The two Roman inhumations, also placed within this enclosure were buried with extremely unusual grave goods (two bone spindle whorls and the other wearing five copper alloy rings).

4.4.3 The domestic area, evaluated last year recovered an interesting large quantity of primary artefacts and this is in contrast to most sites in the area where the Early Roman remains have not been truncated by later Middle and Later Roman features. Primary remains of Conquest period is unusual for this part of Cambridgeshire.

4.4.4 Although only a small part of a large settlement has been found in this development area, there are other parts of this settlement which have/are to be excavated so that these remains can be compared. Overall, a reasonable amount of the settlement will have been excavated to contrast the results with several contemporary sites within a 5km area (see 1.3.10 -1.3.13 above; Fig. 5).

4.5 Recommendations

4.5.1 The first phase of the excavations have recovered some very important archaeological remains which will have a significant impact on archaeological and historical research not only locally but regionally. It is therefore recommended that a small article be published in the county journal on these findings.

4.5.2 The date of proposed second phase of works in the development area is unknown. It is proposed to remove the phase 1 road built on the southern end of the site and extend the phase 1 building with further extension of a new road. It has been suggested that this may occur in ten or so years time and in the meantime the phase 2 area will be landscaped/planted with flowers etc. The uncertainty of the occurrence of this second phase and the probable long delay (especially in this austerity climate), means that it is recommended that the present work is published in PCAS.

Appendix A. Health and Safety Statement

A.1.1 OA East will ensure that all work is carried out in accordance with relevant Health and Safety Policies, to standards defined in *The Health and Safety at Work, etc. Act, 1974* and *The Management of Health and Safety Regulations, 1992,* and in accordance with the manual *Health and Safety in Fieldwork Archaeology* (SCAUM 1997).

A.1.2 Risk assessments prepared for the OA East office will be adhered to.

A.1.3 OA East has Public Liability Insurance. Separate professional insurance is covered by a Public Liability Policy.

A.1.4 Full details of the relevant Health and Safety Policies and the unit's insurance cover can be provided on request.

Appendix B.

Context Inventory

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
1	0	1	layer			topsoil
2	0	1	layer			subsoil also seems to be within boundary ditch
3	0	2	layer			topsoil
4	0	2	layer			subsoil
5	0	3	layer			topsoil
6	0	3	layer			subsoil
7	0	4	layer			topsoil
8	0	4	layer			subsoil
9	0	5	layer			topsoil
10	0	5	layer			subsoil
11	12	5	fill			?pit
12	12	5	cut			?pit
13	0	6	layer			topsoil
14	0	6	layer			subsoil
15	0	7	layer			topsoil
16	0	7	layer			subsoil
17	0	10	layer			topsoil
18	0	10	layer			subsoil
19	0	10	fill			service trench?
20	0	8	layer			topsoil
21	0	8	layer			?subsoil
22	0	9	layer			topsoil
23	0	9	layer			subsoil
24	0	11	layer			topsoil
25	0	11	layer			ploughsoil
26	0	14	layer			topsoil
27	0	14	layer			ploughsoil
28	0	14	layer			brick rubble
29	0	13	layer			topsoil
30	0	13	layer			modern rubble
31	0	12	layer			topsoil
32	0	12	layer			subsoil
33	0	12	layer			modern rubble
34	0	16	layer			topsoil
35	0	16	layer			subsoil
36	0	15	layer			topsoil
37	0	15	layer			subsoil
38	0	17	layer			topsoil
39	0	18	layer			topsoil
40	0	18	layer			subsoil
41	0	21	layer			topsoil
42	0	22	layer			topsoil
43	0	20	layer			topsoil

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
44	0	20	layer			subsoil
45	0	24	layer			topsoil
46	0	23	layer			topsoil
47	0	27	layer			topsoil
48	0	25	layer			topsoil
49	50	25	fill			postmed ditch
50	50	25	cut			postmed ditch
51	0	25	layer			subsoil
52	0	19	layer			topsoil
53	0	19	layer			subsoil
54	0	28	layer			topsoil
55	0	28	layer			subsoil
56	0	31	layer			topsoil
57	0	32	layer			topsoil
58	0	32	layer			subsoil
59	0	30	layer			topsoil
60	0	30	layer			subsoil
61	0	33	layer			topsoil
62	0	33	layer			subsoil
63	64	33	fill			pit
64	64	33	cut			pit
65	0	26	layer			topsoil
66	0	26	layer			subsoil
67	0	26	layer			subsoil
68	0	36	layer			topsoil
69	0	36	layer			subsoil
70	0	35	layer			topsoil
71	0	35	layer			subsoil
72	0	34	layer			topsoil
73	0	34	layer			subsoil
74	0	37	layer			topsoil
75	0	37	layer			subsoil
76	77	38	fill			furrow
77	77	38	cut	3.5	0.2	furrow
78	79	38	fill			boundary ditch A
79	79	38	cut	1.3	0.58	boundary ditch A
80	0	38	layer			topsoil
81	0	38	layer			subsoil
82	0	29	layer			topsoil
83	0	29	layer			subsoil
84	85	40	fill			ditch 3 around burials and ? Shrine
85	85	40	cut	0.65	0.24	ditch 3 around burials and ? Shrine
86	87	40	fill			postmed boundary ditch
87	87	40	cut	0.65	0.11	postmed boundary ditch
88	89	40	fill			modern drainage ditch
89	89	40	cut	0.45		modern drainage ditch
90	91	40	fill			post hole
91	91	40	cut	0.28	0.25	post hole
92	93	40	fill			post hole
93	93	40	cut	0.3	0.15	post hole

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
94	95	40	fill			boundary ditch A
95	95	40	cut	1.65	0.7	boundary ditch A
96	97	40	fill			pit
97	97	40	cut	0.6	0.06	pit
98	101	40	fill			pit
99	101	40	fill			pit
100	101	40	fill			pit
101	101	40	cut	2.4	0.82	pit
102	103	40	fill			pit
103	103	40	cut	1	0.6	pit
104	106	40	fill			Boundary ditch C
105	106	40	fill			Boundary ditch C
106	106	40	cut	2.87	1.05	Boundary ditch C
107	108	39	fill			furrow
108	108	39	cut	1.2	0.2	furrow
109	0	39	layer			
110	112	39	fill			Boundary ditch C
111	112	39	fill			Boundary ditch C
112	112	39	cut	2.8	1.08	Boundary ditch C
113	114	39	fill			Boundary ditch B
114	114	39	cut	1.3	0.78	Boundary ditch B
115	116	42	fill			postmed ditch
116	116	42	cut	0.52	0.2	postmed ditch
117	118	42	fill			postmed ditch
118	118	42	cut	0.8	0.26	postmed ditch
119	120	42	fill			postmed ditch
120	120	42	cut	0.64	0.22	postmed ditch
121	121	39	cut	0.3	0.35	modern drainage ditch
122	121	39	fill			modern drainage ditch
123	124	41	fill			postmed ditch
124	124	41	cut			postmed ditch
125	126	41	fill			postmed ditch
126	126	41	cut			postmed ditch
127	128	41	fill			postmed ditch
128	128	41	cut			postmed ditch
129	130	44	fill			pit
130	130	44	cut	1.7	0.18	pit
131	132	45	fill			postmed ditch
132	132	45	cut	0.7	0.23	postmed ditch
133	134	45	fill			postmed ditch
134	134	45	cut	0.45	0.12	postmed ditch
135	136	45	fill			postmed ditch
136	136	45	cut	0.65	0.26	postmed ditch
137	138	45	fill			postmed ditch
138	138	45	cut	0.45	0.1	postmed ditch
139	140	47	fill			pit
140	140	47	cut	3.2	0.38	pit
141	142	43	fill			postmed ditch
142	142	43	cut	0.54	0.38	postmed ditch
143	145	43	fill			ditch

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
144	145	43	fill			ditch
145	145	43	cut	1.8	0.64	ditch
146	147	40	fill			ditch 1 of ?shrine
147	147	40	cut	0.3	0.12	ditch 1 of ?shrine
148	149	43	fill			?pit
149	149	43	cut			?pit
150	151	47	fill			pit
151	151	47	cut	2.3	0.38	pit
152	0	47	layer			postmed rubble
153	154	40	fill			postmed ditch
154	154	40	cut	0.5	0.07	postmed ditch
500	0	0	layer			Topsoil
501	0	0	layer			subsoil
502	502	0	cut	0.8	0.67	drainage ditch
503	502	0	fill			drainage ditch
504	504	0	cut	0.4	0.73	drainage ditch
505	504	0	fill			drainage ditch
506	506	0	cut	0.34	0.7	drainage ditch
507	506	0	fill			drainage ditch
508	508	0	cut	0.3	0.25	ditch
509	508	0	fill			ditch
510	510	0	cut	0.5	0.34	ditch
511	510	0	fill			ditch
512	513	0	fill			post hole
513	513	0	cut	0.42	0.14	post hole
514	514	0	cut	0.74	0.16	furrow
515	514	0	fill			furrow
516	516	0	cut	0.9	0.21	furrow
517	516	0	fill			furrow
518	518	0	cut	2.2	0.24	pit
519	518	0	fill			pit
520	518	0	fill			pit
521	521	0	cut		0.15	Boundary ditch C
522	521	0	fill			Boundary ditch C
525	528	0	fill			fill of cremation vessel within cremation pit
526	528	0	HSR			cremated bone within cremation pit
527	528	0	fill			cremation pit
528	528	0	cut			cremation pit
529	528	0	fill	0.71	0.6	fill of cremation vessel
530	528	0	fill			cremation vessel
531	532	0	fill			ditch or pit or subsoil
532	532	0	cut	0.9	0.1	ditch or pit or subsoil
533	534	0	fill			ditch 2 of ?shrine
534	534	0	cut	0.34	0.18	ditch 2 of ?shrine
535	536	0	fill			pit?
536	536	0	cut	1.75	0.07	pit?
537	538	0	fill			pit?
538	538	0	cut	1.2	0.07	pit?
539	540	0	fill			ditch 1 of ?shrine
540	540	0	cut	0.34	0.09	ditch 1 of ?shrine

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
541	542	0	fill			ditch 1 of ?shrine
542	542	0	cut	0.7	0.26	ditch 1 of ?shrine
543	544	0	fill			ditch 3 around burials and ? Shrine
544	544	0	cut	0.68	0.28	ditch 3 around burials and ? Shrine
545	546	0	fill			furrow
546	546	0	cut	1.8	0.1	furrow
547	549	0	fill			pit
548	549	0	fill			pit
549	549	0	cut	2.3	0.25	pit
550	550	0	cut	0.7	0.24	Inhumation grave
551	550	0	HSR			skeleton of Inhumation burial
552	550	0	fill			Inhumation grave
553	550	0	fill			Inhumation grave
554	555	0	fill			ditch
555	555	0	cut	1	0.07	ditch
556	557	0	fill			ditch or furrow
557	557	0	cut	1	0.08	ditch or furrow
558	559	0	fill			ditch or furrow
559	559	0	cut	0.9	0.08	ditch or furrow
560	0	0	layer			Late Roman layer?
561	561	0	cut			Boundary ditch B
562	564	0	fill			Inhumation burial
563	564	0	fill			Inhumation burial
564	564	0	cut	0.7	0.59	Inhumation burial
565	565	0	cut	0.3	0.1	post hole
566	565	0	fill			post hole
567	565	0	fill			post hole
568	568	0	cut	0.3	0.08	post hole
569	568	0	fill			post hole
570	568	0	fill			post hole
571	571	0	cut	0.8	0.16	ditch 4 around burials
572	571	0	fill			ditch 4 around burials
573	573	0	cut	0.7	0.24	ditch 4 around burials
574	573	0	fill			ditch 4 around burials
575	575	0	cut	1.75	0.09	pit
576	575	0	fill			pit
577	578	0	fill			ditch or subsoil
578	578	0	cut	1.18	0.22	ditch or pit
579	561	0	fill			boundary ditch B
580	580	0	cut	0.57	0.17	ditch 3 around burials
581	580	0	fill			ditch 3 around burials
582	585	0	fill			Boundary ditch C
583	585	0	fill			Boundary ditch C
584	585	0	fill			Boundary ditch C
585	585	0	cut		1.08	Boundary ditch C
586	587	0	fill			pit
587	587	0	cut	2	0.22	pit
588	590	0	fill			post hole
589	590	0	fill			post hole
590	590	0	cut	0.29	0.21	post hole

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
591	591	0	cut	1.15	0.24	pit
592	591	0	fill			pit
593	593	0	cut	1.2	0.18	furrow
594	593	0	fill			furrow
595	595	0	cut	0.6	0.24	ditch 4 around burials
596	595	0	fill			ditch 4 around burials
597	597	0	cut	0.7	0.2	ditch 4 around burials
598	597	0	fill			ditch 4 around burials
599	599	0	cut	0.6	0.16	ditch 3 around burials and ? Shrine
600	599	0	fill			ditch 3 around burials and ? Shrine
601	601	0	cut	0.8	0.17	ditch 3 around burials and ? Shrine
602	601	0	fill			ditch 3 around burials and ? Shrine
603	604	0	fill			post hole
604	604	0	cut	0.28	0.1	post hole
605	606	0	fill			ditch 3 around burials and ? Shrine
606	606	0	cut	0.65	0.27	ditch 3 around burials and ? Shrine
607	607	0	cut	0.28	0.31	post hole
608	607	0	fill			post hole
609	564	0	fill			Inhumation burial
610	564	0	HSR			skeleton of Inhumation burial
611	611	0	cut	0.65	0.2	ditch 4 around burials
612	611	0	fill			ditch 4 around burials
613	615	0	fill			Boundary ditch C
614	615	0	fill			Boundary ditch C
615	615	0	cut	2.96	1.02	Boundary ditch C
616	617	0	fill			ditch 4 around burials
617	617	0	cut	0.75	0.18	ditch 4 around burials
618	619	0	fill			post hole
619	619	0	cut	0.25	0.24	post hole
620	620	0	cut	0.6	0.17	ditch 4 around burials
621	620	0	fill			ditch 4 around burials
622		0				ditch 4 around burials (master number)
623	624	0	fill			post hole
624	624	0	cut	0.25	0.06	post hole
625	626	0	fill			post hole
626	626	0	cut	0.3	0.06	post hole
627	628	0	fill			post hole
628	628	0	cut	0.35	0.02	post hole
629	629	0	cut	3.15	1.09	Boundary ditch C
630	629	0	fill			Boundary ditch C
631	629	0	fill			Boundary ditch C
632	629	0	fill			Boundary ditch C
633	634	0	fill			post hole
634	634	0	cut			post hole
635		0				ditch 3 around burials and ?shrine (master number)
636	637	0	fill			ditch 3 around burials and ? Shrine
637	637	0	cut	0.89	0.18	ditch 3 around burials and ? Shrine
638	615	0	fill			Boundary ditch C
639	615	0	fill			Boundary ditch C
640	642	0	fill			pit

Context	Cut	Trench	Category	Breadth	Depth	Feature Type
641	642	0	fill			pit
642	642	0	cut	1.34	0.24	pit
643	644	0	fill			ditch
644	644	0	cut	1	0.34	ditch
645	648	0	fill			Boundary ditch C
646	648	0	fill			Boundary ditch C
647	648	0	fill			Boundary ditch C
648	648	0	cut	2.8	1.16	Boundary ditch C
649	650	0	fill			Boundary ditch B
650	650	0	cut	1.75	1.04	Boundary ditch B
651	0	0	layer			subsoil
652	653	0	fill			ditch 2 of ?shrine
653	653	0	cut	0.35	0.15	ditch 2 of ?shrine
654	606	0	fill			ditch 3 around burials and ? Shrine
655	656	0	fill			Boundary ditch B
656	656	0	cut	2.8	0.92	Boundary ditch B
657	657	0	cut	3	1	Boundary ditch C
658	544	0	fill			ditch 3 around burials and ? Shrine
659	662	0	fill			Boundary ditch C
660	662	0	fill			Boundary ditch C
661	662	0	fill			Boundary ditch C
662	662	0	cut	2.8	1.15	Boundary ditch C
663	664	0	fill			Boundary ditch B
664	664	0	cut		0.88	Boundary ditch B
665	656	0	fill			Boundary ditch B
666	656	0	fill			Boundary ditch B
667	656	0	fill			Boundary ditch B
668	657	0	fill			Boundary ditch C
669	657	0	fill			Boundary ditch C
670	657	0	fill			Boundary ditch C
671						SF 20 assigned context number in post-ex
672						SF 23 assigned context number in post-ex
673						SF 22 assigned context number in post-ex

Appendix C. Finds Reports

C.1 Coins

By Nina Crummy

Results

C.1.1 The coins range in date from the early 2nd to mid 4th century. Although the assemblage is too small to be of statistical value, the concentration of issues from the late 3rd to mid 4th century is typical for a rural site in this region (*e.g.* Guest 2003; Plouviez 2004).

Catalogue

SF 25. (99999). Unstratified; from machining topsoil. Worn copper-alloy 2nd century *as*, probably of Hadrian (AD 117-38). Diameter 24 mm; weight 10.52 g.

SF 29. (560). Base silver *antoninianus* of Gallienus. AD 260-8. Diameter 21 mm; weight 2.23 g.

SF 28. (560). Very worn copper-alloy coin fragment, probably an *antoninianus* of Victorinus (AD 268-70). Diameter 17 mm; weight 1.55 g.

SF 31. (645). Copper-alloy barbarous radiate with a small part of the sprue remaining. AD 270-94. Diameter 14 mm; weight 0.90 g.

SF 3. (38). Copper-alloy issue of Constantius II, reverse Gloria Exercitus, two standards. Lyons mint, reference HK 194. AD 330-5. Diameter 16 mm; weight 1.54 g.

SF 27. (560). Corroded copper-alloy coin, probably a copy of the House of Constantine Fel Temp Reparatio falling horseman issue. AD 350-60. Diameter 12 mm; weight 0.72 g.

C.2 Metalwork

By Nina Crummy

Burial 564

C.2.1 Five rings were found on the left hand of the woman in this grave, three on the middle finger and two on the forefinger. All are plain copper-alloy bands, varying from square to D-shaped in section, although the distinction between the two forms is sometimes very slight.

C.2.2 Finger-rings are rarely the only dress accessories deposited in a grave as they often form part of a suite of jewellery buried with young females (Clarke 1979, 318-20, Table 2; Crummy *et al.* 1993, 142-3; Philpott 1991, 130). Sometimes only one ring might be present in a burial, and in this case it might have been a symbol of marriage (Philpott 1991, 130). Of eleven late Roman burials with finger-rings at Lankhills, Winchester, one contained eight and only four had one, leaving the majority with either two, three or four rings. In most cases the multiple groups of finger-rings were not worn and, because of the decay of the bones, the evidence for wear in the graves with one to three rings is often not clear (Clarke 1979, Table 2). The burial from Lankhills that is most pertinent to that from Ely is of a 20-25 year old adult and contained three rings, two of which were found on the same phalanx of the left hand while the third was in close association; the other hand bones were not well preserved but it is likely that this ring had been on an adjacent finger (Clarke 1979, 68-9, grave 326). In general, late Roman burials of juveniles or young adults with multiple finger-rings in a suite of unworn jewellery imply

that it was fashionable to wear several rings at once. Several burials contain two or three (Clarke 1979, 318-20; Crummy *et al.* 1993, Table 2.56; Philpott 1991, 130), but a grave at Ospringe, Kent, had four rings, and graves 155 and 438 at Lankhills had four and eight rings respectively, all of the thin hoop style noted at Ely, although many had some element of decoration (Whiting 1926, 145-6; Clarke 1979, Table 2).

C.2.3 Burial 564 with its five finger-rings is therefore not unique in containing a large number of finger-rings, but it is an unusually clear indicator of a fashion for wearing many rings on one hand and often on one finger. Pliny observed in the mid 1st century AD that when Britons and Gauls wore rings they placed them upon the middle finger, and it may be no coincidence that in burial 564 the three rings were placed on the middle finger but only two on the forefinger (*Nat. Hist.* XXXIII, 24). He also notes that among the Romans rings were worn on all fingers except the middle one, the others being 'loaded with rings, smaller rings even being separately adapted for the smaller joints of the fingers' (*ibid.*). A combination of the two practices seems to have survived sporadically in Roman Britain.

C.2.4 Worn by an adult woman and unaccompanied by any other jewellery, the plain finger-rings in burial 564 are comparatively unostentatious, the expenditure of both metal and artisanal skill being minimal. Such stark style points to local manufacture, and they do not imply great wealth, yet even so they would have marked out the woman wearing them as special within her community, either economically or socially.

Fig. 9, SF 37. (610). Plain copper-alloy finger-ring of D-shaped section, the uppermost of three on the middle finger of the left hand. Diameter 21 mm, height 3 mm, 2 mm thick.

Fig. 9, SF 38. (610). Plain copper-alloy finger-ring of rectangular section, the central one of three on the middle finger of the left hand. Diameter 21 mm, height 1.5 mm, 1 mm thick.

Fig. 9, SF 39. (610). Plain copper-alloy finger-ring of square section, the lowermost of three on the middle finger of the left hand. Diameter 21 mm, height 2 mm, 2 mm thick.

Fig. 9, SF 40. (610). Plain copper-alloy finger-ring of D-shaped section, in fragments; one of two on the forefinger of the left hand. Diameter 21 mm, height 1.5 mm, 1.5 mm thick.

Fig. 9, SF 41. (610). Plain copper-alloy finger-ring of D-shaped section, in fragments; one of two on the forefinger of the left hand. Diameter approximately 21 mm, height 1.5 mm, 1.5 mm thick.

Other finds

C.2.5 The earliest object in this group is a double-pointed awl that probably dates to the Bronze Age or earliest Iron Age (Fig. 14, SF 23). The awl was found *c.*25m to the sourth of the Beaker pits. Used for punching stitch holes into leather or hide, Bronze Age awls usually, as here, have a square or circular-section working point and a square-section tang for insertion into the handle. A wooden handle still survives on an awl from one of the Wiltshire barrows (Annable & Simpson 1964, no. 420), and iron examples with traces of wood on the tang come from Iron Age contexts at All Cannings Cross and Danebury (Cunnington 1923, pl. 19, 7; Sellwood 1984b, 354, fig. 7.13, 2.58). Awls of double-pointed form first appear in Beaker burials and are found in the Middle and Late Bronze Age in hoards and on settlement sites; both iron and bronze examples appear together in the Iron Age (Clarke 1970, 448; Needham 1986, 141-2). What may be the earliest double-pointed awl from Britain was made from copper and found at Abingdon, Oxfordshire, in a Beaker burial containing the crouched skeleton of a 20-24 year old female radiocarbon-dated to 2460-2220 cal. BC (Allen & Kamash 2008, 9, 54, 61, 71, fig. 6). A slightly later burial with a tin-bronze awl from Radley, Oxfordshire, was dated to 2330-1950 cal. BC, a date similar to that of a male burial with an awl from barrow 51 at Amesbury, Wiltshire, and to that of an elderly female burial with an awl from Little Pond Ground Farm near Milton Keynes, Buckinghamshire, dated to 2289-1876 cal. BC

(Barclay & Halpin 1999, 188-95; Ashbee 1978, 20, 24; Brodie 1997, 304; Green 1974, 113-16, fig. 11). The Ely awl may therefore not be much later than the Beaker pottery found nearby, and in this respect it is worth noting a pointed/chisel-ended awl found in a cremation pit close to a Beaker burial at Moulton in Suffolk in 2009 (Archaeological Solutions Ltd, site MUN 035, SF 3, pit F2106).

C.2.6 A Colchester brooch (Fig. 14, SF 26) belongs to the first half of the first century AD (*c.* AD 10-50). One-piece brooches with a forward hook to retain the chord, they are a Catuvellanian/Trinovantian type and were made in considerable numbers. They are particularly common at Verulamium and at Sheepen, Camulodunum, where they are the principal type present before the conquest (Stead & Rigby 1986, 112; 1989, 17, 89-91; Niblett 2006, figs 9-10; Hawkes & Hull 1947, 308-10). They have a wider distribution than their concentration on the two tribal areas implies, as they also occur among the Iceni and extend north to Lincolnshire and Yorkshire, west to Gloucestershire and south into Kent, mainly reflecting the trade routes and expansionist policy of Cunobelin and his sons. As many would have been in use at the conquest this diffusion may also demonstrate a scattering of some elements of the tribes immediately after the Roman invasion.

C.2.7 A Hod Hill brooch fragment dated to *c.* AD 43-60/5 may be linked to the Roman army of conquest (Fig. 14, SF. 17). The type occurs in the fort at Hofheim, and in Britain many come from military sites such as Colchester, Longthorpe and Richborough, while at Hod Hill, the type-site, they are the most common form among the early imported brooches (Ritterling 1913, 129, nos 240-6; Hawkes & Hull 1947, 324, nos 143-57, 158-60; Niblett 1985, fig. 75, 31-6; Crummy 1983, nos 25-32; Goodburn 1974, 44-5; Bayley & Butcher 2004, 70-4, 78, group a and no. 142 in group f; Brailsford 1962, 9, C57-C78, figs 8-9). One was found with two Aucissa brooches on the site of the presumed early fort at Cambridge, and another came from just beyond its northern defences (Gardiner *et al.* 2000, 86, nos 26-7, 31-2).

C.2.8 An iron coiled collar ferrule may be contemporary with either or both of these brooches (Fig. 15, SF. 49). Similar ferrules have been found in the mid 1st century AD Catuvellaunian warrior burial at Stanway, Essex, and there are several from the hill-fort battle sites of Hod Hill in Dorset and Alésia in central Gaul, presumably from British and Gallic spears respectively, as they are not typical of Roman military site assemblages (Crummy *et al.* 2007, 183; Manning 1985, 141, S84-94; Sievers 2001, pl. 73, 400-06).

C.2.9 A complete copper-alloy hairpin (Fig. 14, SF 7) is not matched in Cool's study of Romano-British metal hairpins (1990), although it makes use of the same decorative traditions of several of her groups. It can be assigned a broad date-range from the mid 1st century into the 2nd century.

C.2.10 If the metal hairpin suggests domestic occupation of some quality, an iron fish-hook points to local watercourses supplying the inhabitants with food (Fig. 15, SF 49). No tools or other equipment were recovered, the remaining objects consisting only of two iron strip fragments, both from the same context and so possibly from the same object (SFs 34-5).

Catalogue

Fig. 14, SF 23. (672). Copper-alloy awl with a thick blunt round point at one end and a long square-section pointed tang at the other. Length 38 mm.

Fig. 14, SF 26. (545). Copper-alloy Colchester brooch, missing the pin and the lower part of the bow with the catchplate; part of the spring is detached. The bow is plain. Length 40 mm.

Fig. 14, SF 1. (17). Fragment of the bow of a copper-alloy Hod Hill brooch. A central vertical beaded moulding is flanked by plain mouldings and beaded margins, with traces of tinning visible on the surface. Length 13 mm, maximum width 7 mm.

Fig. 14, SF 7. (110). Copper-alloy hairpin with a nippled globular head above a baluster and a square block with a saltire on each face. The globular element is grooved at the base. The shaft is bent. Length 103 mm.

Fig. 15, SF 50. (632). Iron collar ferrule made from a coiled strip with tapering terminals. Diameter 27 mm, length 18 mm.

Fig. 15, SF 49. (543). Iron fish hook, broken across the perforated upper terminal. Length 45 mm.

SF 34. (582). Tapering and slightly curved iron strip. Length 51 mm, maximum width 14 mm.

SF 35. (582). Iron strip fragment, slightly tapering and convex on the long axis. Length 45 mm, width 22 mm.

Post-medieval

C.2.11 A number of post-Roman objects are listed in archive; they include a ?18th century farthing and a modern clog clasp (See Crummy 2009).

C.3 **Metalworking waste**

By Peter Boardman

Introduction

C.3.1 There were five slag pieces (533g) recovered from the excavation. All the slag and cinder remains found on this site came from various contexts within boundary ditch C. There were no slag recovered from Roman features within the 2008 evaluation (Atkins 2009).

Results

C.3.2 Context 582: There were two pieces of cinder material and they have a combined weight of 34g. There is a very small ferrous content with clay, sand and ash inclusions. This combined with the size of the air voids in the cinder suggest that these pieces are from a smithy furnace, not from a smelt furnace.

C.3.3 Context 669: From this context, one piece of slag was recovered. It has a weight of 11g and a very high ferrous content. The smoothness of one side and the tiny size of the air voids suggest that it is slow cooled tap-slag. No other inclusions suggests that this piece is either from the inside of the smelt furnace or very close to the outside.

C.3.4 Context 670: One small piece of cinder was recovered, with a weight of 2g. Sand, clay and flint inclusions suggest that this is from the base of a smithy furnace. The small ferrous content suggest that most of the Fe had already been removed before this piece was formed.

C.3.5 Context 631: From this one context a piece was recovered with a weight of 486g. This piece is a very small smelt furnace base, with a tap plug of lighter slag attached. The diameter of the base, 0.10m, suggests a small scale smelt. The ferrous content of the base also suggests a very inefficient furnace. The size of the tap plug, as well as its relative position to the base identify an early tap smelt furnace of late I.A to early Roman.

Conclusions

C.3.6 The small size of the smelt and the presence of smithy furnace cinder suggest a small scale, possibly domestic, production and working of iron, during the late I.A to early Roman period.

C.4 Non-building stone

Results

C.4.1 A total of 33 pieces of struck flint were recovered from the site with 25 recovered from the excavation and eight from the evaluation (Table 1). Two flake debitage pieces were recovered from Beaker pit **549** but this flint was probably Neolithic in date. All the worked flint was definitely recovered in residual contexts, eleven from within Roman features, five in post-medieval features and layers and two unstratified. The flints were only found on the higher ground in the southern half of the site but there was no concentration of the material in any one location within this part of the site.

C.4.2 There seems to have been a dearth of flint recovered from other archaeological excavated areas to the south and east (see 1.3.1 above) with only five other flints recorded. Within these five flints there was only a single datable example, an Early Neolithic blade (Thompson 2009).

Context	Flake	Blade	Chunk	Suggested date	Comments
7 (Test Pit 4)	1				
13 (Test Pit 6)			1		
47 (Test Pit 27)		1		Early Neolithic	
102 SF 8 (Trench 40, fill of pit **103**)		1		Early Neolithic	Part of a blade with denticulated (toothed) edge
111 (Trench 39, fill of ditch **112**; **BD C**)		1		Early Neolithic	
115 SF 9 (Trench 42, fill of ?field boundary **116**)		1		Early Neolithic	Part of a larger blade (has lost both ends)
131 (Trench 45, fill of ? field boundary **132**)	1				
535 (Fill of pit **536**)	1			Neolithic	Patinated
547 (Fill of pit **549**)	2			?Neolithic	Debitage
551 (Fill of burial **550**)	1				
582 (Fill of ditch **585**; **BD C**)			1		
584 (Fill of ditch **585**; **BD C**)			6	?Bronze Age	
613 (Fill of ditch **615**; **BD C**)			3	?1 Neolithic,?2 Bronze Age	
631 (Fill of ditch **629**;			5	?Bronze Age	

BD C)					
632 (Fill of ditch **629**; **BD C**)			3	?Bronze Age	
636 (Fill of ditch **637**; **Ditch 3**)			1	?Neolithic	Patinated
645 (Fill of ditch **648**; **BD C**)		1		Earlier Neolithic	Denticulation along one edge
99999	1		1		
TOTAL	**7**	**5**	**21**		

Table1: *Quantification of lithic material by context*

Discussion and Significance

C.4.3 The assemblage is very small but indicates a sparse Early Neolithic scatter with blades clearly important. Two flake debitage pieces from Beaker pit **549** probably pre-date the feature. The chunks and flakes indicate small scale activity in the Neolithic and Bronze Age. Although indicative of prehistoric activity at the site in this period, the assemblage is too small to inform on the precise nature of the occupation or the range of activities undertaken.

C.5 Glass

By Steve Wadeson

Introduction

C.5.1 Excavations at the East Cambridge recycling centre recovered a small assemblage of glass consisting of a single fragment of Roman vessel glass and an undecorated large globular bead. Both artefacts are consistent with an Early Roman date and are associated with general settlement activity. The assemblage is in a stable state of preservation.

Vessel Glass

C.5.2 **SF 36** (613) Phase 4, boundary ditch C. A lower body and base fragment of natural, pale green translucent glass from an unguent bottle. The fragment has a slightly convex, curved body sloping out sharply before curving into flat base. Although too small for the exact shape of the vessel to be identified, it is likely to be from a bottle with a short conical body (Isings form 82b). Commonly recovered from sites the vessel can be dated to the late 1st century or early 2nd century AD (Price and Cottam 1998, 172-174).

Glass Bead

C.5.3 **SF 44** (660) Phase 4, boundary ditch C. A large, undecorated globular bead in a natural, pale green translucent glass, classified by Guido as a Group 7(i) type, (Guido 1978 69). This type of bead first reached Britain during the 1st century BC, however Guido suggests that beads of this style were never popular either in the Late Iron Age or Romano-British periods. Associated with the pottery from ditch fill 660, SF 44 can be dated to the mid 1st century AD to early/mid 2nd century AD.

Discussion

C.5.4 Much of the Roman glass recovered from Britain was imported from the continent, however more evidence is emerging for the local manufacture of some vessels (Allen 1998, 13). Situated to the east of Ermine Street, the Ely site was easily accessible the the local markets of both Godmanchester and more importantly Durobriave (Water Newton), from where excavations have uncovered evidence of both a glass furnace and crucible remains.

Catalogue

SF 36 Lower body and base fragment from a small conical unguent bottle. Slightly convex curved body sloping out sharply and curving into flat base. Free blown; Natural pale green translucent glass. Thickness; 5.2mm. Weight; 3g Period: Last quarter of 1st century-first quarter of 2nd century Ditch **615**, (613) Mid 1st to early 2nd centuries

SF 44 Undecorated large globular bead, Group 7 (i) (Guido 1978, 69). Natural pale green translucent glass.Dia; 17.6mm. Thickness: 9.5mm. Decoration Dia; 5.5mm. Weight; 4g Period; 1st century BC - 4th century AD. Ditch **662**, (660) Mid 1st to early/mid 2nd century.

C.6 Prehistoric pottery

By David Mullin

Introduction

C.6.1 A total of 46 sherds weighing 174g were recovered from three contexts. The majority of the material is Beaker, but a single sherd of Grooved Ware was recovered from context 574.

Methods

C.6.2 The total numbers of sherds and weight were quantified by context. Fabrics were assessed macroscopically by x10 hand lens and microscope (x20). Data was entered directly into a Microsoft Excel spreadsheet and included in the report as Table 2.

Results

Grooved Ware.

C.6.3 A single sherd weighing 12g in a heavily grogged fabric was recovered from context 574 within ditch **573** (which cut pit **575**). This sherd was deocrated with four narrow diagnoal grooves below a horizontal groove, but could not be placed within a narrower Grooved Ware sub-style. Grooved Ware of similar fabric has been recovered from Church Farm, Fenstanton (Chapman *et al* 2005) and from North Fen, Sutton (Webley and Hiller 2009).

Beaker

C.6.4 Two sherds, including a small fragment of a rim were recovered from context 572, fill within ditch **571**. One body sherd was decorated with a pair of parallel impressed lines below which were two diagonal lines, probably part of a chevron.

C.6.5 A total of 40 sherds weighing 144g were recovered from Pit **549**. At least four vessels were predominantly represented by decorated body sherds. No vessel profiles could be reconstructed.

C.6.6 Vessel 1 comprised three sherds decorated with diverging incised lines, possibly part of a chevon. Two rims sherds of Vessel 2 were present, which were decorated by incised vertical lines bounded by parallel lines of cord impressions (Fig. 16). The decoration is very worn but can be paralleled with Beakers from Fengate, Northamptonshire (Clarke 1970, fig 858), and also by two vessels from Ely itself (Clarke 1970, figs 885 and 994). The body of the vessel appears to have been decorated by curving incised lines filled by parallel incised decoration, again possibly part of a chevron which can also be paralleled with the Ely vessels illustrated by Clarke. A further commonality between these three Beakers is the poorly executed decoration. Vessel 3 was represented by 23 sherds, mainly from a carination on the body of the vessel. This was demarked by horizontal rows of comb impressions, below which is a zone of diagonal comb impressions (Fig. 16). This emphasis on the carination or change in vessel profile is fairly common amongst Beakers. A single, small fabric of a simple rim of this vessel was present. Vessel 4 was represented by only four sherds, two of which were decorated by fingernail impressions (Fig. 16, SF 20). Again, fingernail decorated, or "rusticated" Beakers are fairly common and have been found at Snailwell, Cambridgeshire (Clarke 1970, fig 791) and North Fen, Sutton (Webley and Hiller 2009). All of the material from pit **549** is fragmentary and shows old breaks and worn surfaces.

Late Bronze Age

C.6.7 A total of three sherds weighing 16g of a fine walled, flint tempered fabric were recovered from pit **549**. These appear (based on the fabric) to be Late Bronze Age in date and are probably intrusive into the pit.

Fabric Descriptions

C.6.8 F: frequent angular crushed flint up to 3mm. Interior and exterior surfaces light brown, black core. Late Bronze Age.

G+Q1: frequent grog, occasional sand. Interior and exterior red-brown. Late Neolithic/Early Bronze Age.

G+Q2: frequent, poorly sorted grog up to 2mm. Exterior light brow, interior grey, grey core. Late Neolithic.

G+Q3: sparse sand and grog up to 2mm. Exterior burnished, dark brown. Interior light brown, black core. Late Neolithic/Early Bronze Age.

G+Q4: frequent grog, moderate sand. Exterior light brown, interior black, black core. Late Neolithic/Early Bronze Age.

G+Q5: finely crushed grog and sand. Light brown exterior and interior, black core. Late Neolithic/Early Bronze Age.

G+Q6: moderate grog and sand. Exterior light brown, interior and core black. Late Neolithic/Early Bronze Age.

Discussion

C.6.9 The single sherd of Grooved Ware from the site adds to the modest corpus of Grooved Ware from Cambridgeshire, and is of a fairly typical groggy fabric. It cannot be assigned a sub-style due to the small sherd size.

C.6.10 The Beakers from Pit **549** are a fairly typical assesmblage of Beakers recovered from a pit context and can be paralleled locally with those from Church Farm, Fenstanton (Chapman *et al* 2005), where fragments of 37 Beakers were recovered from a pit. The decoration of the Fenstanton sherds is very different, however, and the Ely Beakers are best paralleled with other Beakers from the Ely region (Clarke 1970, figs 885 and 994). The fabrics of the Ely Beakers are also fairly typical of Beakers from the region being predominantly grog with added sand.

C.6.11 The small amount of Late Bronze Age pottery is probably residual.

Cont	Feature	NOSH	Weight	Rim	Wall	Fabric	Decoration	Notes
572	Ditch 4	2	2	1	1	G+Q1	incised chevron over horiz ?cord	?Beaker
574	Ditch 4	1	12		1	G+Q2	incised curving lines	?Grooved Ware
547	Pit **549**	3	16		3	F	x	?LBA
547	Pit **549**	3	10		3	G+Q3	incised lines on 2 sherds	?Beaker
547	Pit **549**	10	41	2	8	G+Q4	bounded incised lines below rim; curving and straight lines of comb on body	Beaker
547	Pit **549**	23	73	1	22	G+Q5	double parallel ?comb impressed lines along carination; diagonal comb	Beaker
547	Pit **549**	4	20		4	G+Q6	fingernail impressions	Beaker

Table 2 : Earlier prehistoric pottery

C.7 Iron Age and Roman pottery

By Stephen Wadeson with contributions by Alice Lyons

Summary

C.7.1 A total of 1673 sherds, weighing 10.58Kg with an Estimated Vessel Equivalent (EVE) of 4.92 vessels were recovered during excavations at the East Cambridgeshire Recycling Centre, Ely, Cambridgeshire (ELY REC 09). This is a multi-period assemblage divided by phase with pottery dating from the Early-Mid Iron Age, Later Iron Age, Late Pre Roman Iron Age, Romano-British, Medieval and post-Medieval periods (Table 3). The majority of the assemblage however is largely Early Roman in date and was recovered from phases 5 and 6 (Table 7).

C.7.2 The assemblage suggests continuous occupation in the vicinity of the site throughout the 1st centuries BC to AD with activity ceasing by the end of the 2nd, beginning of the 3rd century AD. The small number of post-Roman sherds also recovered suggests low

levels of settlement activity or waste disposal on site in the Medieval and post Medieval periods.

C.7.3 Vessel forms present indicate a domestic coarse ware assemblage with limited access to high status products. Specialist wares are present, however only in relatively small amounts.

C.7.4 The assemblage is fragmentary and significantly abraded not only from post-depositional processes but also the natural action of the local clay soils with many of the sherds not retaining their original surfaces. As a result of these processes this material has an average sherd weight of only c.6g suggesting that the majority of the sherds were not found within their site of primary deposition.

Ceramic Period	Quantity	% Quantity	Weight (kg)	% Weight	EVE	MSW (g)
Iron Age	89	5.27	0.582	5.50	0.00	6.5
LPRIA	24	1.42	0.195	1.84	0.00	8.1
Roman	1560	92.36	9.687	91.52	4.81	6.2
Post Roman	16	0.95	0.121	1.14	0.11	7.6
Total	**1689**	**100.00**	**10.585**	**100.00**	**4.92**	

Table 3: Quantity and weight of pottery by ceramic period (MSW = Mean sherd weight)

Methodology

C.7.5 The assemblage was examined in accordance with the guidelines set down by the Study Group for Roman Pottery (Webster 1976; Darling 2004; Willis 2004). The total assemblage was studied and a preliminary catalogue was prepared. The sherds were examined using a magnifying lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. The fabric codes are descriptive and abbreviated by the main letters of the title (Sandy grey ware = SGW) vessel form was also recorded.

C.7.6 The report has taken into account site phasing given by the excavator (Table 5) however the majority of this assessment will be discussed by ceramic periods.

C.7.7 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

Quantification

C.7.8 All sherds have been counted, classified and weighed to the nearest whole gram. Decoration and abrasion were also noted and a spot date has been provided for each individual sherd and context.

The Assemblage

Iron Age Pottery

C.7.9 A total of eighty-nine sherds, weighing 0.582kg, from twenty-two excavated features were identified of an Iron Age date. (Table 4). Predominantly late Iron Age the pottery accounts for 5.5% by weight of the total assemblage recovered, with six fabrics identified in three fabric groups (Table 5).

Period	Sherd Count	Sherd Count (%)	Sherd Weight (kg)	Sherd Weight (%)
Early/Mid Iron Age	10	11.2	0.024	4.1
Late Iron Age	79	88.8	0.558	95.9
Total	**89**	**100.0**	**0.582**	**100.0**

Table 4: Quantity and weight by period

C.7.10 The earliest material recovered dates from the early and mid Iron Age and consists of 10 sherds, weighing 0.024kg of a flint and quartz tempered fabric (F1).

C.7.11 Found as a residual element in all features the sherds are small and heavily abraded with an average sherd weight of 2.4g. This pottery was deposited in later features, due to post depositional processes in the Early Roman period and represents an earlier phase of settlement activity on or near the current site of excavation. The majority of the sherds were recovered from boundary Ditch C.

C.7.12 The majority of the Iron Age pottery, 79 sherds weighing 0.558kg date to the Late Iron Age period (3rd to 1st centuries BC). Significantly abraded the average sherd weight is just 7.0g. Fabrics containing quartz sand make up the majority of the Late Iron Age assemblage *c*.95% by weight, the most common of these fabrics Q3 accounting for *c*.92% of the LIA assemblage. This assemblage parallels with other sites around Ely which seem to show a preference for quartz rich fabrics utilizing the local boulder clays despite a ready local supply of shell rich sources being available (Hill with Horne 2003,171).

C.7.13 The most substantial sherd is the partial profile from a handmade Le Tene style carinated jar (Thompson 1982) from Ditch B, **650** (Fig 17). The presence of this vessel suggests the beginning of the adoption of 'Belgic' styles.

C.7.14 In common with other Later Iron Age (LIA) assemblages such as 'Bob's Wood' Hinchingbrooke, (Lyons and Percival, 2004) most of the pottery was recovered from ditch fills, the majority as a residual element from Ditch C which dates to the Early Roman period (Phase 5). This ditch is a re-cut of the earlier ditch, boundary Ditch B, dated to the Late Iron Age/ Late pre Roman Iron Age (Phase 4).

Fabric	Description	Sherd Count	Sherd Weight	Weight (%)
F1	Handmade. Common medium sub-angular flint; moderate quartz sand. Hard fired. Roughened surface.	10	0.024	4.12
Q1	Handmade. Common quartz sand, common calciferous inclusions. Dark-grey throughout. Hard fired. Oxidised surfaces.	1	0.006	1.03
Q2	Handmade. Common quartz sand, occasional angular quartz. Dark-grey throughout. Hard fired. Smooth, oxidised surfaces.	1	0.002	0.34
Q3	Handmade. Common quartz sand, occasional angular flint or quartz. Reduced throughout. Hard fired. Smoothed surface, occasionally burnished.	70	0.514	88.32
Q4	Handmade. Common quartz sand, occasional angular flint or quartz. Reduced throughout. Hard fired. Smooth oxidised surfaces.	6	0.030	5.15
V1	Handmade. Vegetable/organic tempered, moderate quartz sand. Dark-grey core oxidised surfaces. Surfaces smoothed, contain vegetable/organic impressions. Hard fired.	1	0.006	1.03
Total		**89**	**0.582**	**100.00**

Table 5: The Iron Age pottery fabrics and forms, listed in alphabetically order

The Late Pre Roman Iron Age Pottery

C.7.15 Twenty-four sherds, weighing 0.195kg of Late Pre Roman Iron Age date (LPRIA), were identified during excavations. The assemblage was recovered from eleven excavated features, mostly ditches. Pottery from this period represents 1.84% of the total assemblage by weight with a total of six fabrics identified in two fabric groups (Table 6).

Fabric Name	Vessel Forms	Sherd Count	Sherd Weight	EVE	Weight (%)
Grey ware (grog)	Misc Jar	5	0.048	0.00	24.62
Grey ware (grog) (Oxidised surfaces)		1	0.004	0.00	2.05
Oxidised ware (grog)		1	0.017	0.00	8.72

Reduced ware (grog)	Misc Jar	4	0.032	0.00	16.41
Reduced ware (grog) (Oxidised surfaces)		3	0.011	0.00	5.64
Sandy reduced ware (HM)		10	0.083	0.00	42.56
Total		**24**	**0.195**	**0.00**	**100.00**

Table 6: The Late Pre Roman Iron Age pottery fabrics and forms, listed in alphabetically order

C.7.16 Initially produced using Iron Age fabrics and technologies (hand made/bonfired pottery) the LPRIA/Transitional pottery can be distinguished from earlier Iron Age vessels by the adoption of more Romanised forms (such as the wide mouthed carinated jar). Alongside the introduction of new pottery fabrics such as grog tempered wares new technologies in the form of the fast potters wheel and the semi-permanent kiln became more widespread (Lyons and Percival 2004).

C.7.17 The majority of the vessels recovered are grog tempered wares (Table 6) accounting for *c.* 57% by weight of the LPRIA assemblage. While no vessel types were identified it is most likely that the assemblage consists of a small number of utilitarian coarse ware vessels occasionally decorated with combed surfaces. Mainly recovered from ditches, in particular boundary ditch C the pottery is in poor to moderate condition and most are abraded with an average sherd weight 8g.

C.7.18 The remaining ten sherds (*c*.43% by weight) are handmade and produced in a finer sand tempered reduced ware. A distinctly transitional fabric it is a darker, coarser (often thicker) predecessor of the more Romanised Sandy reduced ware, typical of the Early Roman period onwards.

C.7.19 It is worthy of note that LPRIA pottery is rarely found by itself, it is frequently found with Later Iron Age and Roman material and also just Roman material, confirming it is contemporary with both pottery types (Lyons and Percival 2004).

The Roman Pottery

C.7.20 A relatively large assemblage of Early Roman and Romano-British pottery, 1560 sherds, weighing 9.687kg were recovered during excavations. The assemblage was recovered from (approximately) forty-eight stratified deposits, mostly ditches. Pottery from this period represents *c*.92% by weight of the total assemblage and is significantly abraded with an average sherd weight of only *c*.6g. As a result little evidence for surface finishes or residues survive. A total of thirty-two main fabrics were identified (Table 8).

C.7.21 Predominantly Early Roman (mid 1st to early/mid 2nd century AD) in date occupation has ceased by the end of the 2nd, beginning of the 3rd century AD.

C.7.22 Examination of the Roman pottery by phase (Table 5) indicates relatively high levels of intrusiveness and residuality. The majority of material however is associated with Early Roman deposits, especially ditch (*c*.67%) and pit (*c*.19%) fills.

Phase	Type	Weight (kg)	% Weight
Unphased	Unknown	0.236	2.23
2 Early/Mid Iron Age (c.8th to 2nd centuries BC)		0.000	0.00
3 LIA/LPRIA (c.1st century BC)	pit	0.115	1.09
	subsoil	0.009	0.09
4 LPRIA (c. Mid 1st century BC to c. mid 1st AD)	ditch	0.119	1.12
5 Early Roman (c. Mid 1st century AD to c. late 1st or early 2nd century AD)	ditch	5.574	52.66
	layer	0.002	0.02
	Cremation Pit	0.525	4.96
6 Early Roman (c. Late 1st century AD or early 2nd century to c. later 2nd century)	Unknown	0.018	0.17
	ditch	1.477	13.95

	layer	0.050	0.47
	pit	2.04	19.24
	post hole	0.014	0.13
	Inhumation Burial	0.003	0.03
7 Roman (3rd to 4th Centuries AD)		0.000	0.00
8 Medieval to Modern	Unknown	0.031	0.29
	ditch	0.009	0.09
	Test Pit	0.343	3.24
	Furrow	0.023	0.22
Total		**10.585**	**100.00**

Table 7: Weight of pottery by site phase

C.7.23 The vast majority of the assemblage (*c*.48% by weight) consists of unsourced, but locally produced, sandy grey ware sherds (Table 8).

C.7.24 The earliest of these grey wares can be referred to as 'proto' sandy grey wares (*c*.11%) and was due to the variable consistency and colour of the fabrics produced at the time. This was the result of poor clay preparation and firing technology during the 1st and early 2nd century before the use of both the fast wheel and the semi-permanent kiln became widespread (Swan 1984).

C.7.25 The Early Roman period was the first era in which fully Romanised Sandy grey wares (*c*.37%) were manufactured and account for the majority of the grey wares recovered. The assemblage is heavily fragmented and the majority of the sherds undiagnostic, where specific types could be assigned the majority of sherds belong to medium mouthed jars of the globular variety. Also identified were 52 sherds from a decorated large narrow mouthed jar (Fig. 18) recovered from pit **101**. In addition the partial remains of a suspended bowl, ditch **112** (Hancocks 2003, p.86, fig7.16, no139) were also identified (Fig. 18). The bowl is an updated form of an Iron Age vessel type, copying the metal cauldrons in use at that time (Lyons 2009, 91-4).

C.7.26 Soot residues are rare on all sandy grey wares suggesting that most of these vessels were rarely used for cooking, more for the small scale storage (especially lid seated vessels) and the consumption of food and drink.

C.7.27 The second most common fabric recovered are Sandy reduced wares accounting for c.26% of the total Roman assemblage. The sherds, like the majority of the assemblage are undiagnostic however identifiable sherds present are primarily medium mouthed jars. Two reduced ware flat bottomed jars were recovered from cremation burial **528,** both vessels are heavily fragmented and abraded due to post depositional processes with only the lower third of the vessels remaining making specific identification impossible. The cinerary urn (526) was a locally produced hand made jar. The accessory vessel (580) was wheel made in a similar fabric but better fired. Both vessels are local copies of Gallo-Belgic in LPRIA style. They are likely to have been produced either side of the Conquest i.e middle 1st century AD. Due to their fragmentary state, it is possible that they were slightly later in date even possibly going into the 2nd century. Four sherds from a straight sided flanged bowl (6.17.1) were identified and represents one of the latest dated vessels found in the reduced ware assemblage.

C.7.28 In addition a small yet significant assemblage of sandy coarse wares (*c*.12% by weight) were recovered. Used to produced low quality utilitarian vessels throughout the Roman period few forms were identified within the assemblage, forms identified were limited to jars, specifically storage jars.

C.7.29 Sandy oxidised wares, most likely manufactured at a range of local centres, (similar to the sandy grey ware fabrics) were found in relatively low numbers (*c*.4%). Forms identified were limited to flagons and include both ring necked (1.1) and Hofheim (1.5) types. The majority of the material however was too small and abraded to assign to specific vessel types. In addition a further eleven sherds (*c*.0.5%) of a gritty oxidised ware were recovered from the assemblage. This ware is visually identical to 1st and early 2nd century Verulamium white ware (Tyers 1999, 199-201), but is known to have been produced into the 2nd and 3rd centuries in the Northampton region and at Godmanchester in Cambridgeshire (Lyons 2008). A single sherd from a possible flagon was the only form identified in this fabric.

C.7.30 Shell tempered wares are rare within the assemblage with only ten sherds identified (*c*.1%by weight). It is worth noting that the use of sand to temper the clay used for pottery production appears to have been a deliberate cultural choice, making the people in and around Ely distinct from the shell temper users in the west of the region (Percival in prep).

C.7.31 A small quantity of fine ware material (*c*.5% by weight) was recovered and is generally Early Roman in date. In addition a small amount of later material was recovered from test pits close to the main area of excavation.

C.7.32 The majority of fine wares identified are Nene Valley colour coat wares (*c*.4.5%). The bulk of this assemblage consists of a single indented beaker with applied barbotine scale decoration (*c*.4%) of mid to late 2nd, early 3rd century (Perrin 1999, 93-5). This drinking vessel is the latest material associated with the main area of excavation.

C.7.33 Later produced domestic fine wares (3-4th century AD) include the partial remains of two castor boxes consisting of the lip from a box (6.2.2) and part of the rouletted box lid (6.2.1) retrieved from test pit deposits. Suggesting later Roman activity was taking place close to the main area of excavation, indicating that the focus of Later Roman settlement was elsewhere.

C.7.34 Further early fine wares recovered include six sherds (*c*.0.5%) from a Butt beaker (3.13) (Lucas et al, 2007, 58, fig. 11, no 3). Inspired by continental 'Belgic' forms (Thompson 1982, Type G) the presence of these vessels are diagnostic of the mid 1st to early 2nd century AD before domestic pottery production became industrialised and pottery styles became more standardised and general utilitarian (Gibson & Lucas 2002).

C.7.35 Other fabrics identified include a small amount of domestically produced, unsourced red fine wares (*c*.0.3%) possibly copies of the more expensive Samian and Oxfordshire wares, such as those produced at the Obelisk kilns at Harston in South Cambridgeshre however it is uncertain if these sherds originate from these kilns.

C.7.36 Samian is very poorly represented with only five sherds, weighing 0.25% (by weight) identified within the assemblage. This includes a single decorated sherd from a Drag. 37 bowl from Lezoux, Central Gaul (AD120-200) (Tomber and Dore 1998, 32). The main decoration consists of a single ridge medallion containing a figure of a cupid. In addition the sherd has been repaired in antiquity with the remains of a single repair hole, for a lead rivet, remaining. The early date of the pottery assemblage should not preclude the presence of samian as it was common in most areas of southern Britain from the mid to later part of the 1st century AD (Tyers 1999, 107, fig 91). The lack of imported wares on rural sites is typical of low order settlements in the region (Evans 2003, 105).

Fabric Name	Vessel Forms inc.	Sherd Count	Sherd Weight	EVE	Weight (%)
Black surfaced red ware		11	0.050	0.00	0.52

Central Gaulish Samian	Bowl	3	0.022	0.06	0.23
Horningsea type	Storage Jar	2	0.054	0.00	0.56
Grey ware (fine) 'London-type ware'		2	0.003	0.00	0.03
Grey ware (fine) (Oxidised Surfaces)	Butt Beaker	12	0.04	0.12	0.41
Miscellaneous		2	0.009	0.00	0.09
Red fine ware		8	0.025	0.00	0.26
Miscellaneous sandy oxidised ware		138	0.121	0.00	1.25
Nene Valley colour coat		34	0.441	0.61	4.55
Sandy coarse ware	Misc Jar, Storage Jar	70	1.181	0.10	12.19
Sandy coarse ware (fine)	Misc Jar	1	0.021	0.00	0.22
South Gaulish Samian		2	0.002	0.00	0.02
Sandy grey ware	Misc Jar, Storage Jar, W/MJar, M/MJar, Jar/Bowl	212	3	1.72	30.98
Sandy grey ware (calc)	Misc Jar	19	0.099	0.10	1.02
Sandy grey ware (fine) (mica)	Bowl, Jar/Bowl	3	0.022	0.06	0.23
Sandy grey ware (flint) (Oxidised surfaces)		1	0.006	0.00	0.06
Sandy grey ware (grog)	Jar/Bowl	7	0.056	0.00	0.58
Sandy grey ware (Oxidised surfaces)	Misc Jar	41	0.356	0.12	3.68
Sandy grey ware (calc) (Oxidised surfaces)	Storage Jar	3	0.048	0.00	0.50
Sandy grey ware (proto)	Misc Jar	129	4.69	0.06	7.14
Sandy grey ware (proto) (calc)	Jar/Bowl	15	0.044	0.00	0.45
Sandy grey ware (proto) (flint)		29	0.311	0.00	3.21
Sandy oxidised ware		81	0.166	0.00	1.71
Sandy oxidised ware (calc)	Flagon	43	0.137	0.09	1.41
Sandy oxidised ware (fine)		14	0.024	0.00	0.25
Sandy reduced ware	Misc Jar, Storage Jar, M/MJar, Pedestal Jar, Jar/Bowl, Bowl	632	2.463	1.67	25.43
Sandy reduced ware (calc)		1	0.009	0.00	0.09
Sandy reduced ware (flint)		21	0.075	0.00	0.77
Shell-tempered ware	M/MJar	10	0.115	0.10	1.19
Gritty oxidised ware	Flagon	11	0.058	0.00	0.60
White ware	Bowl	3	0.036	0.00	0.37
Total		**1560**	**13.683**	**4.81**	**100.00**

Table 8: The Early Roman pottery fabrics and forms, listed in alphabetically order

The Post Roman Pottery

C.7.37 Sixteen sherds, weighing 0.121kg, with an EVE of 0.11, of Post Roman date, including both Medieval and post-Medieval pottery (Table 10) were recovered from site. Pottery from this period accounts for 1.14% by weight of the total assemblage.

Period	Sherd Count	Sherd Count (%)	Sherd Weight (kg)	Sherd Weight (%)
Medieval	15	93.8	0.119	98.3
Post Medieval	1	6.2	0.002	1.7
Total	**16**	**100.0**	**0.121**	**100.0**

Table 9: Quantity and weight by period

C.7.38 The majority of the post-Roman assemblage, eleven sherds of Medieval Ely ware (MEL) were recovered from several ditches across the site. Both the six sherds recovered from boundary Ditch B and three MEL sherds within Ditch **557** appear to be intrusive while a single sherd identified from Ditch **502**, the only pottery present suggests a date of the mid 12th to mid 15th century. The sherd however was abraded and cannot be relied upon to date the feature. A further three sherds of MEL were unstratified and a single sherd was recovered from the topsoil in test pit 27.

C.7.39 In addition a single intrusive sherd of post-Medieval black glazed ware dating to the 17th century was recovered from context 638 Ditch C and most likely represents post medieval manuring across the site.

Fabric Name	Vessel Forms	Sherd Count	Sherd Weight	EVE	Weight (%)
Medieval Ely ware	Misc Jar	15	0.119	0.11	98.35
Post-Medieval Black Glazed ware		1	0.002	0.00	1.65
Total		**16**	**0.121**	**0.11**	**100.00**

Table 10: The Post Roman pottery fabrics and forms, listed in alphabetically order

Assemblage in relation to excavated features

Boundary ditches A and C

C.7.40 These boundary ditches produced the majority of the pottery assemblage recovered from site (Table 11).

C.7.41 Boundary ditch A produced only early Roman fabrics primarily Sandy grey wares (SGW) along side a small number of fine wares including several sherds from an early Butt beaker (Fig. 17). Where other specific types could be assigned the majority of sherds belong to medium mouthed jars.

C.7.42 Boundary ditch C produced the largest assemblage by feature including residual sherds of Early to mid Iron Age, Late Iron Age and Late pre Roman Iron Age pottery as well as early Roman fabrics including 'proto' sandy grey wares, sandy grey wares, sandy reduced and sandy oxidised wares. Few forms were identified with in the assemblage, those present include mainly jars, however in addition 39 relatively unabraded sherds from a suspended bowl (Hancocks 2003, p.86, fig7.16, no139) (Fig. 18) and a single decorated sherd from a Drag. 37 samian bowl from Lezoux, Central Gaul (Tomber and Dore 1998, 32) were also identified.

Ditches 1, 2, 3 and 4

C.7.43 Ditches one through to four enclose an area which possibly relates to funerary activity. Ditch 1 produced only two heavily abraded sherds of early to mid Iron Age pottery while a single sherd of Sandy grey ware was recovered from ditch 2. By comparison ditch 3 produced 26 sherds of sandy coarse wares including 15 sherds from a single sandy reduced ware vessel. Ditch four produced the largest assemblage of the group, 175 sherds, weighing 1.244kg and consist mainly of sandy reduced ware jars. In addition a near complete Nene Valley colour coat indent beaker (with applied barbotine 'scale' decoration) (Perrin 1999, 93-5) was recovered (Fig. 9). The vessel was broken in antiquity and was most probably depostited in the ditch shortly after it was broken. A further single sherd from a white ware bowl was identified also.

Pits 97, 101 and 103

C.7.44 Pit 97 contained only three small abraded, undiagnostic proto sandy grey wares. By comparison pit 101 produced 146 sherds weighing almost 2kg. Of these, 52 sherds are from a single large, decorated sandy grey ware narrow mouthed jar (Fig. 18). Largely unabraded the condition of the vessel would suggest it is possibly located within its primary site of deposition. Pit 103 contained a further 18 sherds, primarily sandy coarse wares including several sherds of 'proto' sandy grey wares.

C.7.45 The majority of the assemblage recovered from these features is significantly abraded and suggests that much of the pottery was deposited through secondary processes. Although the material present is primarily from a domestic coarse ware assemblage

normally associated with settlement activity in this instance the assemblage recovered from these features can not be directly associated with settlement activity within the area of excavation.

Feature Type	Phase	Sherd Count	Sherd Weight	% Wgt of whole assemblage	MSW (g)
Boundary Ditch A	5	191	1.607	0.09	8.4
Boundary Ditch C	5	641	3.967	15.18	6.2
Ditch 1	6	2	0.009	37.48	4.5
Ditch 2	6	1	0.004	0.04	4.0
Ditch 3	6	26	0.220	2.08	8.5
Ditch 4	6	175	1.244	11.75	7.1
Pit 97	6	3	0.003	0.03	1.0
Pit 101	6	146	1.941	18.34	13.3
Pit 103	6	18	0.093	0.88	5.2
Total		**1203**	**9.088**	**85.87**	

Table 11: Quantity and weight by feature type

Discussion

C.7.46 This is a relatively large assemblage which although containing pottery from several sequential periods is primarily Early Roman (Mid 1st to late 2nd/early 3rd century AD) in date. Alongside the Early Roman material is a small assemblage of residual Iron Age and Late pre Roman Iron Age pottery. This material would suggest a period of pre Roman activity in the vicinity. Although typical of prehistoric activity the assemblage is too small to suggest the nature of the occupation or of any activities undertaken.

C.7.47 The Early Roman assemblage consists predominantly of locally produced utilitarian coarse wares, particularly sand tempered coarse wares supplemented by a small range of products from the regional pottery production centres in the Lower Nene valley. The presence of Nene Valley wares, on this and other sites in the region is due to the proximity of the site to the production centres of the Nene Valley. Forms and fabrics traditionally associated with specialist wares are rare within the assemblage as are continental imports.

C.7.48 This assemblage has many similarities with the pottery recovered from Hurst Lane reservoir site (Lucas *et al* 2007, 56-58) and would suggest activity in the vicinity of the site during the mid 1st to mid-late 2nd century AD. The assemblage is typical of a utilitarian domestic assemblage recovered from low order settlements within this region (Evans 2003, 105).

C.7.49 The domestic nature of this assemblage contradicts the activities taking place on the site which appear to be funerary related with little sign of settlement activity. The majority of the pottery is abraded with few vessels recovered from their place of primary deposition, only five such vessels were recovered, two of theses related to the cremation burial. It is probable that the majority of the domestic pottery reached the site through secondary processes such as middening, and general site clearance.

Sampling Bias

C.7.50 The open area excavation was carried out by hand and selection made through standard sampling strategies on a feature by feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental and artefactual remains, there has also been some recovery of pottery. These are small

quantities of abraded sherds and have not been quantified, and serious bias is not likely to result.

Illustrated sherd catalogue

Fig. 17:,SF 43 Reduced ware (Q3) Le Tene style carinated jar, H/M. Period: LIA (1st Century BC), Ditch B, **650**, (649), Phase 4.

Fig. 18:, Sandy Grey ware narrow mouthed jar with zig, zag decoration. Period: RB (Mid 1st Century - Early/Mid 2nd century AD), Pit **101**, (99), Phase 6.

Fig. 18:, Sandy Grey ware suspended bowl. Period: RB (Mid 1st Century - Early/Mid 2nd century AD), Ditch C, **112**, (110), Phase 5.

Fig. 9:, Nene Valley colour coated indent beaker with applied barbotine scale decoration. Period: RB (Mid/Late 2nd, Early 3rd centuries AD), Ditch 4, **595**, (596), Phase 6.

Fabrics

C.7.51 **Black surfaced red ware *(11 sherds, weighing 50g, 0 EVE. A total of 0.52% by weight of the entire Roman assemblage)***

This is a broad fabric group of local sandy grey wares that have misfired, resulting in a red fabric and black surface. Vessel types: none identified

C.7.52 **Samian *(5 sherds, 24g, 0.06 EVE. A total of 0.25% of the entire Roman assemblage by weight)***

A distinctive glossy red fabric, often decorated (Tomber and Dore 1998, 25–41). A variety of southern and central Gaulish samian was recovered, of which central Gaulish was the most common.

Vessel types: Dr 31/Dr 31R, Dr 37

C.7.53 **Grey ware (fine) *(2 sherds, 3g, 0 EVE. A total of 0.03% by weight of the entire Roman assemblage)***

This has a dark brownish grey fabric with a similar or darker surface; it is hard with a smooth fracture and it has a smooth to soapy feel. Sometimes referred to as ‘London type ware’ this fabric was made at several centres including West Stow and Wattisfield in Suffolk, the Nene Valley and also London. This is a fine fabric used to make good quality vessels in the Early Roman period, some of the vessels copied samian and other Gaulish pot shapes.

Vessel types: none identified

C.7.54 **Grey ware (fine) (Oxidised surfaces) *(12 sherds, 40g, 0.12 EVE. A total of 0.41% by weight of the entire Roman assemblage)***

Similar to Grey ware (fine) but with oxidised surfaces

Vessel types: 3.13

C.7.55 **Horningsea type ware *(2 sherds, 54g, 0 EVE. A total of 0.56% of the entire Roman assemblage by weight)***

Similar to Horningsea reduced wares, normally brown-grey, often with pale grey margins and a thick blue-grey core. The fabric can have a 'biscuit' feel and has a distinctive open texture. Often with combed decoration sherds are commonly thick and are generally associated with large storage jars with a distinctive out-turned rim

Vessel types: Misc S/Jar

C.7.56 **Red fine ware *(8 sherds, weighing 25g, 0 EVE. A total of 0.26% by weight of the entire Roman assemblage)***

These are oxidized, normally red or orange and frequently have a reduced core and pink margins. The fabric contains well-sorted inclusions and is characterized by common fine, silver (sometimes gold) mica and common to abundant quartz. This material is not slipped. It may be a local copy of Samian and Oxfordshire wares, such as those produced at the Obelisk kilns at Harston in South Cambridgeshre (CHER 05074), between the 2nd and 4th centuries

Vessel types: none identified

C.7.57 **Miscellaneous sandy oxidised ware *(138 sherds, weighing 121g, 0 EVE. A total of 1.25% by weight of the entire Roman assemblage)***

An oxidised fabric with reduced, dark-grey surfaces containing common well-rounded quartz and sparse amounts of calciferous material

Vessel types: none identified

C.7.58 **Nene Valley colour-coat *(34 sherds, weighing 441g, 0.61 EVE. A total of 4.55% of the entire Roman assemblage by weight)***

Pale cream-to-orange sherds with a wide range of coloured slips (Tomber and Dore 1998, 118). This assemblage contains mainly early continental-type beakers, with darker colour-coats (mainly brown and dark grey)

Vessel types: 3.3.1, 6.2.1, 6.2.2

C.7.59 **Sandy coarse wares *(70 sherds, 1181g, 0.10 EVE. A total of 12.19% of the entire Roman assemblage by weight)***

This is a loosely mixed sandy fabric that often presents as a sandwich ware with a variety of core and surface colours ranging from pale grey to dark brown. It is a poorly made fabric that represents low quality utilitarian vessel manufacture throughout the Roman period. Often with combed decoration

Vessel types: Misc Jars & S/Jars

C.7.60 **Sandy coarse wares (Fine) *(1 sherds, 21g, 0 EVE. A total of 0.22% of the entire Roman assemblage by weight)***

Similar to Sandy coarse ware but containing less quartz, resulting in a finer less gritty feel to the fabric

Vessel types: none identified

C.7.61 **Sandy grey ware *(212 sherds, 3001g, 1.72 EVE. A total of 30.98% of the entire Roman assemblage by weight)***

A light brown to dark grey fabric that contains abundant well-rounded quartz and sparse mica (Perrin 1996, 120). It is a utilitarian fabric that was used to produce most jar and bowl forms during the Roman period. The source of this material is unknown, and could originate from anywhere within a radius of twenty to thirty miles- perhaps further if water transport was available (*ibid*, 121)

Vessel types: 4.0, 5.0, Misc S/Jar

C.7.62 **Sandy grey ware *with Oxidised surfaces (41 sherds, 356g, 0.12 EVE. A total of 3.68% of the entire Roman assemblage by weight)***

Similar to sandy grey ware but with oxidised surfaces

Vessel types: 8.2.1, Misc S/Jar

C.7.63 **Sandy grey ware (calc) *(19 sherds, 99g, 0.10 EVE. A total of 1.02% of the entire Roman assemblage by weight)***

Similar to sandy grey ware but containing sparse to moderate amounts of calciferous material

Vessel types: Misc Jar

C.7.64 **Sandy grey ware (calc) *with Oxidised surfaces (3 sherds, 48g, 0 EVE. A total of 0.50% of the entire Roman assemblage by weight)***

Similar to sandy grey ware with oxidised surfaces but containing sparse to moderate amounts of calciferous material.

Vessel types: Misc S/Jar

C.7.65 **Sandy grey ware (fine) (mica) *(3 sherds, 22g, 0.06 EVE. A total of 0.23% of the entire Roman assemblage by weight)***

A grey ware fabric which is similar to the Grey ware (fine) fabric described above but with abundant silver mica inclusions. The presence of more quartz means it has a less soapy texture

Vessel types: 6.21.1

C.7.66 **Sandy grey ware (flint) with Oxidised surfaces *(1 sherd, 6g, 0 EVE. A total of 0.06% of the entire Roman assemblage by weight)***

Similar to sandy grey ware with oxidised surfaces but containing sparse amounts of very coarse flint (up to 3mm)

Vessel types: none identified

C.7.67 **Sandy grey ware (grog) *(7 sherds, 56g, 0 EVE. A total of 0.58% of the entire Roman assemblage by weight)***

Similar to sandy grey ware but with frequent coarse (larger than 1mm) grog inclusions

Vessel types: none identified

C.7.68 **Sandy grey ware (proto) *(129 sherds, 4688g, 0.06 EVE. A total of 7.14% of the entire Roman assemblage by weight)***

A sandy fabric which presents as a sandwich ware with a variety of core and surface colours ranging from pale grey to dark brown frequently with orange margins. Containing abundant well-rounded quartz and sparse mica it is a predecessor (1st to early/mid 2nd century) of the Romanised sandy grey ware fabric, and can be hand made or wheel made

Vessel types: 4.14, Misc Jar

C.7.69 **Sandy grey ware (proto/calc)** ***(15 sherds, 44g, 0 EVE. A total of 0.45% of the entire Roman assemblage by weight)***

Similar to proto sandy grey ware but containing moderate amounts of calciferous material

Vessel types: none identified

C.7.70 **Sandy grey ware (proto/flint)** ***(29 sherds, 311g, 0 EVE. A total of 3.21% of the entire Roman assemblage by weight)***

Similar to proto sandy grey ware but containing sparse amounts of coarse (up to 3mm) flint inclusions

Vessel types: none identified

C.7.71 **Sandy oxidized ware** ***(81sherds, 166g, 0 EVE. A total of 1.71% of the entire Roman assemblage by weight)***An oxidized fabric that can vary in colour from very pale brown to creamy white, and often has sand inclusions (Andrews 1985, 94–5, OW2)

Vessel types: none identified

C.7.72 **Sandy oxidised ware (calc)** ***(43 sherds, 137g, 0.09 EVE. A total of 1.41% of the entire Roman assemblage by weight)***

Similar to sandy oxidised ware but containing frequent amounts of calciferous material

Vessel types: 1.0, 1.1, 1.5

C.7.73 **Sandy oxidised ware (fine)** ***(14 sherds, 24g, 0 EVE. A total of 0.25% of the entire Roman assemblage by weight)***

An oxidised ware that is similar to the Grey ware (fine) fabric described above, but the presence of more quartz means it has a less soapy texture

Vessel types: none identified

C.7.74 **Sandy reduced ware (wheel made)** ***(632 sherds, 2463g, 1.67 EVE. A total of 25.43% of the entire Roman assemblage by weight)***

A hard sandy fabric normally dark grey throughout with a moderate amount of quartz and occasional flint fragments resulting in an irregular fracture. However many of the fabrics identified in the assemblage present as sandwich wares with core and surface colours ranging from mid grey to dark grey or black, frequently with dark brown margins. Reduced wares seem to have been produced throughout the Roman period, in addition to the finer grey wares, but are particularly common in early and late assemblages

Vessel types: 4.13, 6.17.1, Misc Jar, Pedestal Jar, Misc S/Jar

C.7.75 **Sandy reduced ware (calc)** ***(1 sherd, 9g, 0 EVE. A total of 0.09% of the entire Roman assemblage by weight)***

Similar to sandy reduced ware but containing sparse to moderate amounts of calciferous material

Vessel types: none identified

C.7.76 **Sandy reduced ware (flint)** ***(21 sherds, 75g, 0 EVE. A total of 0.77% of the entire Roman assemblage by weight)***

Similar to sandy reduced ware but containing sparse to common fragments of flint (up to 3mm)

Vessel types: none identified

C.7.77 **Shell-tempered ware (unsourced)** ***(10 sherds, weighing 115g, 0.10 EVE. A total of 1.19% of the entire Roman assemblage by weight)***

Most are brown-grey and are heavily tempered with fossil shell, which is a natural constituent of the clay. Where rim forms are lacking, it can be difficult to differentiate between the various possible manufacturing centres for shell-tempered wares in the Roman period. The Romanised shell tempered wares differed from their Iron Age predecessors as they do not include grog and showed signs of finer preparation (the shell is often crushed). The Lower Nene Valley was know to have been a production centre for shell-tempered storage jars (Perrin 1996, 119–20) between the late Iron Age and 3rd century AD. Early Roman shell tempered wares were known to have been produced at Bourne in Lincolnshire and Greetham in Humberside (Tomber and Dore 1998, 156), while distinctive lipped Dales ware shell tempered jars were made in the Lincolnshire area between the late 2nd and 3rd centuries. Moreover the Harrold kilns in Bedfordshire (Tomber and Dore 1998, 115) and other unsourced sites (Tomber and Dore 1998, 212) produced rilled cooking pots in the later Roman period. However, numerous unsourced local production sites would have exploited the Jurassic shelly clay beds throughout the Roman period (Perrin 1996, 119)

Vessel types: 4.14

C.7.78 **Gritty oxidised ware** ***(11 sherds, weighing 58g, 0 EVE. A total of 0.60% of the entire Roman assemblage by weight***

This is a white-to-pale yellow fabric (Cameron 1996, 449) with significant amounts of quartz, giving it a gritty appearance. This ware is visually identical to 1st and early 2nd century Verulamium white ware (Tyers 1996, 199-201), but is known to have been produced into the 2nd and 3rd centuries in the Northampton region and at Godmanchester in Cambridgeshire (Martin and Wallis 2006, 3.7.1, iii and iv). This fabric went out of fashion before the end of the Roman period

Vessel types: 1.0

C.7.79 **White ware *(3 sherds, weighing 36g, 0 EVE. A total of 0.37% of the entire Roman assemblage by weight)***

Various pipe clay fabrics, possibly regional imports *e.g.* from Colchester

Vessel types: 6.0

C.7.80 **Grey ware (grog) *(5 sherds, 48g, 0 EVE. A total of 24.62% by weight of the entire LPRIA assemblage)***

This has a dark brownish grey fabric with a similar or darker surface. It is quite a hard, soapy, hackly-fractured fabric with frequent very coarse (larger than 1mm) grog inclusions. This fabric was initially used to produced handmade forms in the Belgic style, however its suitability for wheel production quickly established it as the main Early Roman utilitarian ware.

Vessel types: Misc Jar

C.7.81 **Grey ware (grog), with oxidised surfaces *(1 sherd, 4g, 0 EVE. A total of 2.05% by weight of the entire LPRIA assemblage)***

This has a dark brownish grey fabric with a oxidised surfaces. It is quite a hard, soapy, hackly-fractured fabric with frequent very coarse (larger than 1mm) grog inclusions. It is a distinctively transitional and Early Roman (1st century) handmade fabric

Vessel types: none identified

C.7.82 **Oxidised ware (grog) *(1 sherd, 17g, 0 EVE. A total of 8.72% of the entire LPRIA assemblage by weight)***

This has a brownish yellow fabric with similar or darker surfaces. It is quite a hard, soapy, hackly-fractured fabric with frequent very coarse (larger than 1mm) grog inclusions. The fabric is distinctively transitional and Early Roman handmade fabric

Vessel types: none identified

C.7.83 **Reduced ware (grog) *(4 sherds, 32g, 0 EVE. A total of 16.41% of the entire LPRIA assemblage by weight)***

This is a smooth, laminated fabric made with very little quartz (Perrin 1996, 121), which contain grog as a common inclusion. It is a distinctively transitional and Early Roman handmade fabric. It is a darker, coarser (often thicker) predecessor of the more Romanised Grey ware (grog) fabric.

Vessel types: Misc Jar

C.7.84 **Reduced ware (grog), with oxidised surfaces *(3 sherds, weighing 11g, 0 EVE. A total of 5.64% of the entire LPRIA assemblage by weight)***

This is a smooth, laminated fabric made with very little quartz which contain grog as a common inclusion (Marney 1989, 190, fabric46a). It is a distinctively transitional and Early Roman (1st century) handmade fabric. Vessels with orange (or oxidized) surfaces of this type are commonly found in Thompson (1982) Zone 8 around the Milton Keynes area.

Vessel types: none identified

C.7.85 ***S*andy reduced ware (handmade) *(10 sherds, weighing 83g, 0 EVE. A total of 42.56% of the entire LPRIA assemblage by weight)***

A quite hard, rough fabric, very dark grey throughout, with a moderate amount of quartz and occasional fragments of flint, resulting in an irregular fracture. This sandy reduced fabric became more common towards the end of the Iron Age and continued in use as wheel made technology was introduced.

Vessel types: none identified

List of Forms

C.7.86 A list of the broad vessel forms found in this assemblage and their Estimated Vessel Equivalent (EVE) (Table 12). (* This does not include the EVE's recorded in the Medieval assemblage)

Form	EVE	%EVE
M/MJAR	1.95	40.54
MISCELLANEOUS JAR*	1.49	30.98
BEAKER	0.54	11.23

JAR/BOWL	0.17	3.53
W/MJAR	0.16	3.33
BOWL	0.12	2.49
LID	0.12	2.49
STORAGE JAR	0.10	2.08
FLAGON	0.09	1.87
CASTOR BOX	0.07	1.46
BUTT BEAKER	0.00	0.00
CASTOR BOX LID	0.00	0.00
PEDISTALLED JAR	0.00	0.00
Total	**4.81**	**100.00**

Table 12: Forms by Estimated Vessel Equivalent (EVE)

Form Descriptions and Published Parallels

C.7.87 Flagons

Miscellaneous or indeterminate

Ring necked flagons (Perrin 1996, 90)

Hofheim type, single (Stead and Rigby 1986, 191) and double (*ibid*, 229) handled flagons with cylindrical necks and out-curved lips, triangular in section

C.7.88 Beakers

Curved neck, including little or no neck, with oval indents (NV: 40,41 PKM: 0174/1)

Butt beakers (Stead and Rigby 1986, 339)

C.7.89 Medium Mouthed Jars

Miscellaneous medium-mouthed jars

Medium-mouthed jar, rounded body and simple everted rim (Rogerson 1977 5; Martin 1988, 250; 251)

Large storage vessels - Misc or indeterminate sherds (PKM: 0781/13 0163/64)

C.7.90 Wide Mouthed Jars

Miscellaneous wide-mouthed jars

C.7.91 Bowl, Cup, Dish, Platter; any open form

Caister box (NV: 89)

Caister box lid (NV: 89)

Flanged rim bowls, straight sided, flat base, slight bead (IKL: 16, 25)

Open bowl, sharp internal angle, incurving rim, flat or footring base (PKM: 0770/10,0113/144, 145,148 4068/4 0972/6 WS:225)

C.7.92 Lids

With rounded surface and bead (Scole)

C.7.93 Samian (Tyers 1999, 105-116)

DRAG. 31 A shallow bowl, with a curved wall and beaded rim, the division between wall and floor apparent.

DRAG. 31R A shallow bowl, with a curved wall and beaded rim, the division between wall and floor is vestigial, although marked by a slight ledge.

DRAG. 37 A deep bowl with slightly curved sides. The wall of the vessel is usually divided into two (approximately) equal zones, where the lower half is decorated.

Site Abbreviation	Site name	Publication reference
BAL	Baldock, Hertfordshire	Stead & Rigby 1986
IKL	Icklingham, Suffolk	West & Plouviez 1976
NV	Nene Valley, Cambridgeshire	Howe et al
OHF	Orton Hall Farm, Cambridgeshire	Perrin 1996
PKM	Pakenham, Suffolk	
Scole	Scole, Norfolk	Rogerson 1977
WS	West Stow, Suffolk	West 1990

Key to Sites abbreviated in pottery type series

Acknowledgements

C.7.94 Special thanks to Alice Lyons, OA East for her time, support and specialist knowledge of Roman pottery and Carole Fletcher, OA East for her time and patience.

C.8 Tiles

By Rob Atkins

Results

C.8.1 A small quantity of post-medieval roof tile, all pre. *c*.1800 in date, were recovered from three contexts in the excavation. These contexts were 505 (0.608kg; drainage ditch **504**), 507 (1.141kg; drainage ditch **506**) and 632 (0.006kg; ditch **629** (boundary ditch **C**). The roof tile had been reused within the first two features as the flat surface for 19th century ceramic "horse shoe" type drains. There was a single roof tile fragment with a complete width (context 507) and this was 20.5cm wide and 14mm thick. It was in an orange sandy fabric with shell inclusions (a typical Ely Fabric pers comm Carole Fletcher). The tiles from contexts 505 and 632 were in a mixed yellow/red clay fabric. Within a Roman ditch (context 632) there was a single small intrusive fragment. In the evaluation there were similar tiles were recovered, all from within post-medieval features (Atkins 2009) but these have not been recorded here.

C.9 Burnt clay

By Rob Atkins

Results

C.9.1 A very small collection of burnt clay was found in sixteen Iron Age and Roman contexts (0.216kg), twelve from the excavation (0.138kg) and four within the evaluation (0.073kg). Within the evaluation there was a further six post-medieval contexts (0.113kg) which contained fired clay (Atkins 2009) but these post-medieval deposits have not been recorded again in this report.

C.9.2 None of the burnt clay was diagnostic (pers. comm. Carol Fletcher). There is no indication of industrial or domestic features within the excavation or the evaluation. The fragments were very small and it is entirely possible that most may be Iron Age in date and have taken a long time to find their way into Roman features.

Context	No. Fragments	Weight (g)	Phase
78 (Trench 38, ditch **79**; Boundary Ditch **A**)	1	19	
84 (Trench 40, ditch **85;** Ditch **3**)	1	2	
98 (Trench 40, pit **101**)	3	20	
102 (Trench 40, pit **103**)	2	32	
512 (Post hole **513**)	1	1	
543 (Ditch **544**; Ditch **3**)	1	1	
563 (Grave **564**)	1	4	
584 (Ditch **585**; Boundary Ditch **C**)	5	32	
586 (Pit **587**)	1	4	
608 (Post hole **607**)	2	15	
613 (Ditch **615**; Boundary Ditch **C**)	3	10	
631 (Ditch **629**; Boundary Ditch **C**)	1	8	
632 (Ditch **629**; Boundary Ditch **C**)	7	29	
638 (Ditch **615**; Boundary Ditch **C**)	1	5	
659 (Ditch **662**; Boundary Ditch **C**)	1	7	
660 (Ditch **662**; Boundary Ditch **C**)	3	22	
Total	**34**	**216**	

Table 13: ***Burnt clay***

C.10 Lipid Samples

By Lucija Šoberl and Richard P. Evershed

Introduction

C.10.1 Cooking and processing other organic commodities enables insoluble lipid residues to get absorbed into the porous ceramic matrix and preserved for several thousand years in the form of surface or/and absorbed residues. The components of the lipid extracts of such residues can be identified and quantified through solvent extraction and using a combination of analytical techniques capable of achieving molecular level resolution, i.e. high temperature-gas chromatography (HTGC), GC/mass spectrometry (GC/MS; Evershed *et al*., 1990) and GC-combustion-isotope ratio MS (GC-C-IRMS; Evershed *et al.*, 1994), Characterisation of lipid extracts in order to illuminate the commodity type processed is only possible through detailed knowledge of diagnostic compounds and their associated degradation products formed during vessel use or burial. For example, triglycerides (TAGs) are found in abundance in fresh modern animal fats, however, they are readily degraded to diglyceride (DAGs), monoglyceride (MAGs) and free fatty acids

during vessel use and burial, such that in archaeological pottery the free fatty acids tend to predominate; this has been observed in numerous pottery vessels (Evershed *et al*., 2002) and verified through laboratory degradation experiments (e.g. Charters *et al*., 1997; Dudd and Evershed, 1998; Evershed, 2008). During the past twenty years of research into the lipid residues of archaeological pottery, an increasing range of commodities have been detected in pottery vessels, including animal products – meat and milk (e.g. Evershed *et al*., 1992, Copley *et al*., 2003), leafy vegetables (Evershed *et al*., 1991, Evershed *et al*., 1994), specific plant oils (Copley *et al*., 2005a), beeswax (Evershed *et al*., 1997, Evershed *et al.*, 2003) and several others.

C.10.2 Animal fats are by far the most common class of residue identified from archaeological pottery with compound-specific stable carbon isotope analysis allowing detailed characterisation of their source. GC-C-IRMS allows the carbon stable isotope ($\delta^{13}C$) values of individual compounds (within a mixture) to be determined. We have found that the $\delta^{13}C$ values for the principal fatty acids ($C_{16:0}$ and $C_{18:0}$) are effective in distinguishing between different animal fats, e.g. ruminant and non-ruminant adipose fats and dairy fats (Evershed *et al*., 1997a, Dudd & Evershed, 1998), as well as in the identification of the mixing of commodities (Charters *et al.,* 1995, Evershed *et al.*, 1999). Recently we have demonstrated that dairy products were important commodities in Prehistoric Britain, as illustrated through the persistence of dairy fats in archaeological pottery vessels (Copley *et al*., 2003, 2005b). For an overview of the use of compound specific stable isotopes in archaeology, see (Evershed *et al*., 1999).

Materials and Methods

C.10.3 Lipid analyses were performed using established protocols which are described in detail in earlier publications (Evershed *et al*., 1990; Charters *et al*., 1993). The identification of individual compounds was based upon eluting order, comparison of retention times to standards and comparing the mass spectra with known fragmentation patters and NIST spectra library. The analyses proceeded as follows:

Solvent extraction of lipid residues

C.10.4 Lipid analysis of the potsherd involved taking a 2 g samples and cleaning the surface using a modelling drill to remove any exogenous lipids (e.g. soil or finger lipids due to handling). The sample was then ground to a fine powder, accurately weighed and a known amount (20 μg) of internal standard (*n*-tetratriacontane) added which enables later quantification of lipid concentration. The surface residues were not cleaned due to their fragile nature, but were sub-sampled and ground to a fine powder and weighed; again an internal standard was added. The lipids were extracted with a mixture of chloroform and methanol (2:1 v/v). Following separation from the ground sample the solvent was evaporated under a gentle stream of nitrogen to obtain the total lipid extract (TLE). Portions (generally one third aliquots) of the extracts were then trimethylsilylated and submitted directly to analysis by HTGC. Where necessary combined GC/MS analyses were also performed on trimethylsilylated aliquots of the lipid extracts to enable the elucidation of structures of components not identifiable on the basis of HTGC retention time alone.

Preparation of trimethylsilyl derivatives

C.10.5 Portions of the total lipid extracts were derivatised using *N,O*-bis(trimethylsilyl) trifluoroacetamide (40 μl; 70°C; 60 min; T-6381; Sigma-Aldrich Company Ltd., Gillingham, UK) and analysed by HTGC and GC/MS).

Saponification of total lipid extracts

C.10.6 Methanolic sodium hydroxide (5% v/v) was added to the TLE and heated at 70°C for 1 h. Following neutralisation, lipids were extracted into chloroform and the solvent reduced under gentle stream of nitrogen.

Preparation of methyl ester derivatives (FAMEs)

C.10.7 FAMEs were prepared by reaction with BF_3-methanol (14% w/v; 100µl; B-1252; Sigma-Aldrich, Gillingham, UK) at 70°C for 1 h. The methyl ester derivatives were extracted with chloroform and the solvent removed under nitrogen. FAMEs were re-dissolved into hexane for analysis by GC and GC-combustion-isotope ratio MS (GC-C-IRMS).

Pottery samples

C.10.8 Four sherds of Early Bronze Age pottery from the site were received for lipid analyses. Potsherd samples were all taken from the body or shoulder of the vessels. The potsherd details are listed in Table 14.

Bristol Sample No	Stratigraphy	Weight (g)	Description
CAM 57	Vessel 1	2.236	Beaker, body
CAM 58	Vessel 2	2.976	Beaker, body/shoulder, 2 sherds
CAM 59	Vessel 3	2.822	Beaker, body/shoulder, 2 sherds
CAM 60	Vessel 4	1.797	Collared urn, body

Table 14 *Details of the potsherds submitted for organic residue analysis*

Results and discussion

C.10.9 HTGC and GC/MS analyses serve to quantify and identify compounds present in lipid extracts, such that it is possible to determine the presence of: (i) animal fat or plant oil, and/or (ii) plant epicuticular waxes, and/or (iii) beeswax (reflecting use of beeswax applied as sealant), and/or (iv) mid-chain ketones which indicate that the vessels have been heated (Evershed *et al.*, 1995, Raven *et al.*, 1997). GC-C-IRMS analyses can distinguish between ruminant and non-ruminant adipose fats and dairy fats by investigating the $\delta^{13}C$ values of most abundant free fatty acids, namely $C_{16:0}$ and $C_{18:0}$. Table 15 lists the samples, the concentrations of lipids detected and the preliminary assignments of the broad commodity groups based on the molecular data retrieved so far. The isotopic analyses of lipid extracts, which offer a more accurate assignment of the lipid source, are still in progress.

C.10.10 Witchford Recycling Centre pottery displays relatively good lipid preservation with two out of four potsherds (50% success) yielding a significant lipid concentration (i.e. > 5 µg g^{-1}). The lipid concentration limit of 5 µg g^{-1} of potsherd represents the minimum concentration, which can be reliably attributed to and interpreted as remnants of ancient food processing, rather than contamination from the surrounding soil or post-excavation handling. The preservation of lipids in pottery is heavily influenced by their degradative alterations that may occur during vessel use or due to post-burial conditions in the soil (Evershed et al., 1999; Evershed 2008).

C.10.11 Figure 21 shows a typical partial gas chromatogram for the total lipid extract (TLE) of the absorbed residue from potsherd CAM 60, indicating the variety of compounds detected, namely: free fatty acids, with high abundances of saturated $C_{16:0}$ and $C_{18:0}$ components. Mono-, di- and triacylglycerols were also present in two potsherd extracts, which confirms the relatively good degree of preservation, since they are mainly present in fresh animal fats and plant oils. The chromatogram also shows traces of odd carbon number saturated fatty acids ($C_{15:0}$, $C_{17:0}$) with their *iso*- and *anteiso*-branched varieties ($C_{17:0br}$), which generally indicate ruminant lipid source (Mottram *et al*., 1999; Evershed *et al*., 2002).

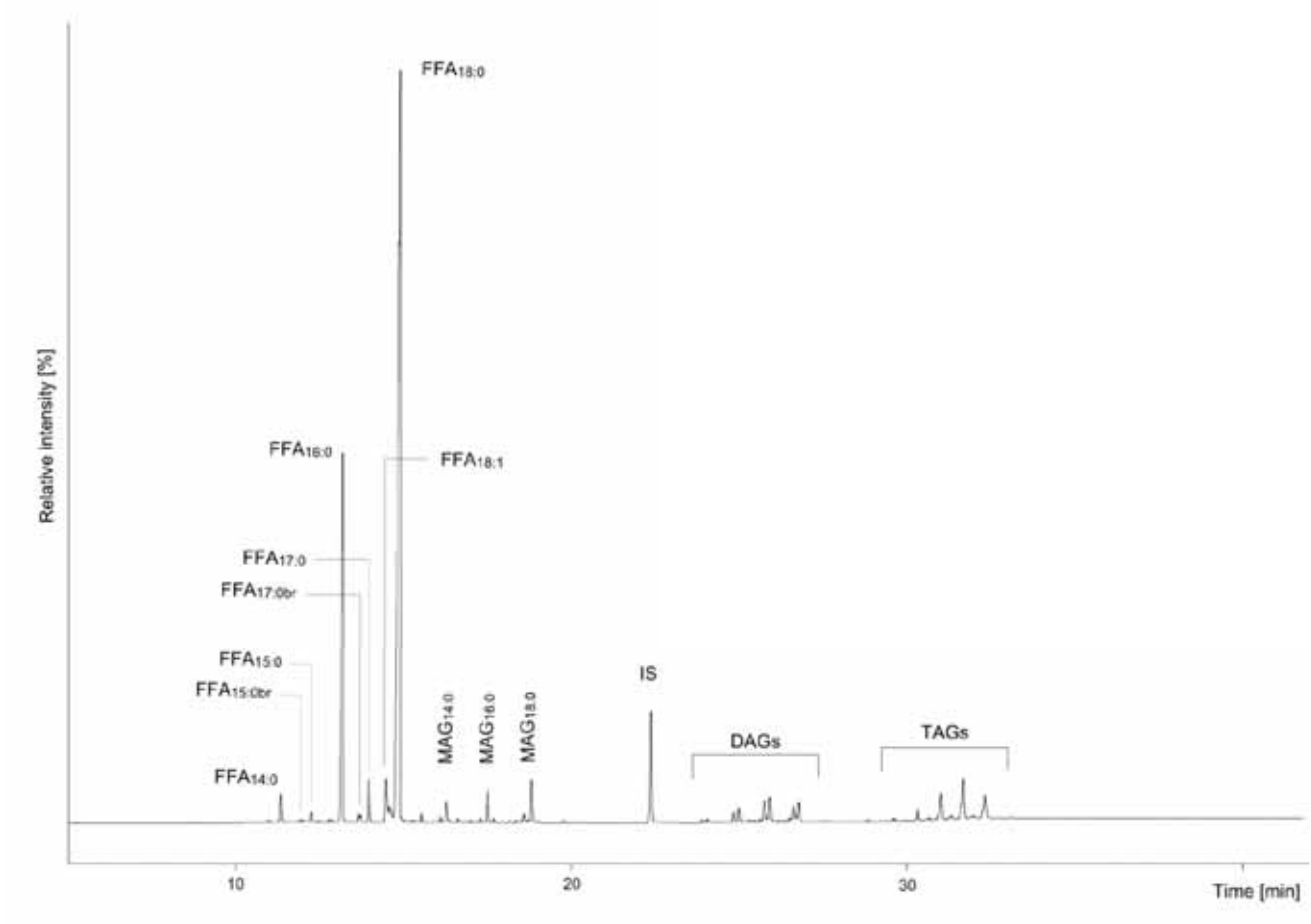


Figure 21 Partial HTGC profile of the trimethylsilylated total lipid extract from sample CAM 60 illustrating the distribution of compounds characteristic of degraded animal fat. Key: $FFA_{X:0}$ are free fatty acids of carbon length x and degree of unsaturation y; $FFA_{X:0br}$ are branched free fatty acids; IS is the added internal standard (C_{34} alkane). MAGs are monoacylglycerols; DAGs are diacylglycerols; TAGs are triacylglycerols

Bristol sherd number	Lipid concentration ($\mu g\ g^{-1}$)	Lipids detected	$\delta^{13}C_{16:0} \pm 0.3$ (‰)	$\delta^{13}C_{18:0} \pm 0.3$ (‰)	Predominant commodity type
CAM 57	0.00	nd	/	/	/
CAM 58	94.02	FFA (16<18; 14:0, 15:0, 17:0, 17:0br, 18:1, 19:0,	in progress	in progress	degraded ruminant fat

		20:0)			
CAM 59	0.70	nd	/	/	/
CAM 60	226.53	FFA (16<18; 14:0, 15:0, 15:0br, 17:0, 17:0br, 18:1, 19:0), MAG, DAG, TAG	in progress	in progress	degraded ruminant fat

Table 15 *Summary of the results of the organic residue analyses*

Key: FFA refers to free fatty acids, X:Y are of carbon chain length x and degree of unsaturation y; MAG are monoacylglycerols; DAG are diacylglycerols; TAG are triacylglycerols.

C.10.12 Triacylglycerols (TAGs) are the most abundant constituents of fresh fats and get degraded quickly through microbial degradation and weathering. Comparison of the TAG distributions with those of modern reference fats has shown that specific distributions can be linked to different lipid sources and allow preliminary differentiation of their origins from the two major classes of domestic animals (ruminant and non-ruminant/ porcine) and between ruminant dairy and adipose fats. Ruminant animals show a characteristic distribution of TAGs with carbon numbers ranging from C_{44} to C_{54} with a maximum concentration at C_{52}; where as non-ruminant animals display a slightly shorter distribution with carbon numbers between C_{48} and C_{54} with a low concentration at C_{48} and C_{54} and a maximum again at C_{50} and/or $C_{52.}$ Dairy fats show the widest TAG distribution with carbon numbers range C_{42} until C_{54}, usually with two maximums at C_{50} and C_{52} (Evershed *et al*. 1997; Dudd & Evershed 1998; Mottram *et al*. 1999).

C.10.13 However, laboratory experiments have shown that triacylglycerol distributions can be skewed by degradation; the wide TAGs distribution characteristic of fresh ruminant dairy fat is considerably narrowed due to preferential degradation of compounds with lower carbon numbers, and thus come to resemble the narrower distribution seen in ruminant adipose fat TAGs distribution (Dudd et al., 1998). Therefore conclusions drawn from TAG distributions have to be made with caution and complemented with measurements of $\delta^{13}C$ values. The TAG distributions for the extract CAM 60 of the Witchford Recycling Centre pottery are shown in Figure 22.

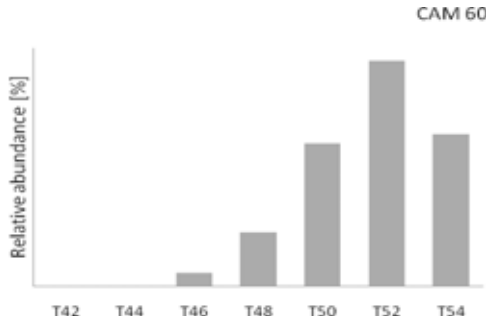


Fig. 22 *The distributions of triacylglycerols detected in lipid extract CAM 60*

C.10.14 The TAG distribution detected in the potsherd CAM 60 shows a range of carbon numbers between C_{46} and C_{54}, with a maximum abundance at C_{52} which are typical for ruminant animal fat TAG distributions. The ruminant source is also indicated by the presence of odd-carbon number fatty acids ($C_{15:0br}$, $C_{17:0br}$). A similar interpretation can be proposed for the CAM 58 pottery extract. All the preliminary interpretations made so far have to be made with caution, due to their limitations. The stable carbon isotope ratio measurements (□^{13}C), which are in the process of completing, will give us a more

accurate and definitive answer to the precise source of lipids preserved in the Early Bronze Age pottery from the Witchford Recycling Centre.

Conclusions

C.10.15 Lipid residue analyses of the four Witchford Recycling Centre Early Bronze Age pottery vessels revealed good preservation of lipids absorbed within the vessel walls with two out of four potsherds yielding an appreciable lipid concentration. Gas chromatograms of pottery lipid extracts show the presence of compounds, indicative of partially degraded animal fat with free fatty acids (palmitic and stearic acid predominantly), mono-, di- and triglycerides. Both pottery extracts display also the presence of odd-carbon number fatty acids with their branched varieties that indicate the presence of ruminant animal fat. The ruminant source of one lipid extract (CAM 60) has also been indicated by its TAG distributions.

C.10.16 Further work is being done with gas chromatography-combustion-isotope ratio mass spectrometry to measure $\delta^{13}C$ values which will provide a more accurate and secure assignation of commodities that were processed within the Beaker and Collared Urn. The preliminary results of the lipid residue analyses fit well within the ongoing study of British Early Bronze Age pottery from domestic and funerary contexts, where the Collared Urns as well as the Beakers have shown the presence of lipids, originating from various food sources, mainly animal meat or dairy products (Soberl, unpublished data).

C.11 Bone artefacts

By Nina Crummy

Burial 550

C.11.1 Two bone spindle-whorls were found in Burial 550, one beneath the right shoulder (SF 47) and the other placed close against the upper back (SF 46). As the one behind the back rested on its side and in the correct position for use (with the flat face uppermost), it must have been deposited fitted onto a wooden spindle, which has not survived burial. The spindle would have reached up as far as the back of the skull, possible to the top. If the whorl beneath the right shoulder had also been on its spindle, then the two rods would have framed the head. The spindles would have varied considerably in diameter, as the minimum diameter of the perforation through SF 46 is only 4 mm, and that through SF 47 is 11 mm. The whorls both weigh the same, so the narrower spindle does not reflect a lighter weight for its whorl and perhaps a change of implement for a finer thread.

C.11.2 Each whorl is made from the articular condyle, or head, of a cattle femur. *Bos* femur heads were utilised in this way from the Iron Age to the Saxo-Norman period, being both a readily available source where cattle formed part of the local economy and an ideal shape requiring little adaptation beyond drilling or cutting the spindle hole, which was usually done from both sides to produce a hole with an hour-glass-shaped profile (Rees *et al.* 2008, 244). Iron Age examples have been found at Glastonbury and Meare lake villages and at Danebury, where they come from contexts phased to 300-100/50 BC and later (Bulleid & Gray 1917, 1948; MacGregor 1985, 187; Coles 1987, 51; Sellwood 1984a, 395, fig. 7.39, 3.212-13; Cunliffe & Poole 1991, 366, fig. 7.37, 3.369). They are scarce in the Roman period, and there is some possibility that they almost went out of use. There is one from a 2nd to 3rd century context at Colchester and one

from a Late Roman context at Hacheston, Suffolk (Crummy 1992, 198, no. 1722; Seeley 2004, 144, fig. 103, 347). An unstratified example from Milton Keynes was catalogued as Roman but may be later (Zeepvat 1987, 143, fig. 45, 172). One from the Anglo-Saxon village at West Stow, Suffolk, was associated with an early 5th century sunken featured building (West 1985, 43, 147, fig. 176, 9). They occur in their greatest numbers in the Anglo-Scandinavian/Late Saxon periods at urban centres such as York, Lincoln, Thetford and Winchester (Walton Rogers 1997, 1741-3; Mann 1982, 22; Rogerson & Dallas 1984, 179; Woodland 1990, 222-4; Rees *et al.* 2008, 243-6).

C.11.3 The whorls in Burial 550 are a valuable source of information about the local economy of the dead woman's community. They are unlikely to have been used to spin a vegetable fibre such as flax, as it does not do well in waterlogged soils, making the Ely area unsuitable for such a crop. They imply that cattle were kept and at least some slaughtered locally rather than driven to a large settlement to supply its demands, and that their bones were made available for utilisation after slaughter. They also point to the keeping of sheep and/or goats and allowing many to reach maturity so that they would provide wool, instead of slaughtering most in their first or second year as would be the case for a flock kept for milk and meat (Payne 1973, 292-4).

C.11.4 In the eastern region during the Roman period there is a distinct imbalance between the material evidence for fibre preparation, spinning and cloth finishing compared to that for weaving. Medium-sized shears for shearing sheep and iron wool-combs as well as disassociated wool-comb teeth have been found across the region; there are also many examples of spindle-whorls, particularly those made from recycled pot sherds, and the only large cloth-cropping shears known from Britain come from Great Chesterford (*e.g.* Manning 1966; 1985, 34; Sealey 1995, 77; Crummy 1983, 67; 1992, 156; 2003, 112-13, fig. 44, 96; 2006, 71; Major 1999, 102; Seeley 2004, 120, fig. 81, 140, 144, fig. 103, 346-7; Gardiner *et al.* 2000, 88, pl. 13, 117). In contrast, the triangular loomweights that were used on the vertical warp-weighted loom and are almost ubiquitous on Iron Age settlement sites disappear from the archaeological record in this area soon after the Roman conquest, and no other form of loomweight takes their place. The sudden decline in loomweights on rural sites after the conquest may mark a rapid switch to industrial production in urban centres or on imperial estates and a move away from the self-sufficiency in cloth manufacture that characterised both large and small Iron Age communities, but there is a similar absence of loomweights in Roman towns. There may have been a change in weaving technology, such as a different method of securing and tensioning the warp so that loomweights were unnecessary, but the vertical two-beam loom, which needs no weights, does not seem to have reached Britain before the 10th century at the earliest, even though it is known to have been used in Roman Gaul (Walton Rogers 1997, 1759-61; 2001, 160-1). Despite this uncertainty over the contemporary loom type, the material evidence for the early stages of cloth production in eastern Britain during the Roman period point to sheep and their wool forming a major element of the economy (Frere 1994, 290-1).

C.11.5 The *Notitia Dignitatum* mentions the post of procurator of an imperial fulling mill in Britain at *Venta* (*procurator gynaecii (in Britannis) Ventensis*) and Haverfield and others have suggested that the *Venta* in question was most likely to have been *Belgarum* (Winchester) rather than *Silurum* (Caerwent) or *Icenorum* (Caistor-by-Norwich). The arguments in favour of Winchester are slight and originally rested upon the supposition that the lands around Caerwent and Caistor were unsuitable for sheep-rearing and that the *gynaecium* in Winchester could have drawn upon wool from an imperial estate in that area (Haverfield 1900, 292; Wild 1967; 1970, 9; Clarke 1979, 369). The deposition of spinning and tablet-weaving equipment in 4th-century female graves in the Lankhills

cemetery at *Venta Belgarum* has been linked to this suggestion and has been further extended to cover the wider area of Hampshire, Dorset and Somerset, where many of the Romano-British burials containing spindle-whorls are found, all female and several of them in rural locations (Clarke 1979, 369; Philpott 1991, 184). So far there is no material or structural evidence from non-funerary sites in or immediately outside Winchester to link the town to the large-scale production of cloth (Rees *et al.* 2008, 385), and, as most whorls in these southern burials are turned from shale quarried at Kimmeridge in Dorset (Philpott 1991, Table A33), their concentration in this area is better seen as a indication of the principal zone over which they were marketed. Bone whorls from the same area are also turned and usually made from antler (Clarke 1979, 248-9). The symmetry, durability and smoothness of turned whorls of either shale or antler would make them superior products to those made from recycled sherds and their deposition in any burial is probably more an indication of the dead females' enhanced socio-economic status as of a greater association with spinning than their peers.

C.11.6 Instead of Winchester, Manning (1966) proposed that the imperial fulling-mill recorded in the *Notitia Dignitatum* was at Caistor-by-Norwich (*Venta Icenorum*). His arguments are at least as persuasive as those for Winchester, if not more so. They include the eastern concentration of wool-combs and other equipment associated with cloth-production, a concentration that has increased considerably since the time he was writing, the suitability of both the light Breckland soils and the loams of north-east Norfolk for sheep-rearing and their very successful use for this purpose in the medieval period, as well as the proposal that a substantial part of the eastern region was in imperial ownership following the Boudican revolt and the draining of the fens (see also Potter 1981, 130). He also pointed out that the duty of the *comes sacrarum largitionum*, the official to whom the procurator of a *gynaecium* would have reported, was to clothe the court, the army and the civil service, and that in the late Roman period cloth woven on an imperial estate centred on Norfolk could have been sent to the continent from the ports of Burgh Castle and Caistor-by-Yarmouth either directly or via London. The parallels with the large shipments of grain from the region to the continent in the late Roman period are clear (Salway 1981, 259, 359; Davies 1996, 37). Manuring arable land between crops by allowing sheep to graze, as happened in the medieval period (Manning 1966, 60), provides a good agricultural reason why Roman farmers may have combined both cereal and wool production.

C.11.7 The female burial with bone whorls at Ely adds to the weight of evidence for wool and cloth production in the eastern region. In the use of cattle femur head whorls it also introduces an element of the pre-Roman Iron Age tradition of self-sufficiency, that is, making tools from materials to hand rather than purchasing a workshop-made item, and to this extent the burial differs from those in southern Britain that contained commercially produced lathe-turned whorls. Even so, the dead woman can be assumed to have enjoyed a degree of wealth and status by association with the flocks that would have supplied the wool for spinning. The whorls are also well worn, and therefore represent skill as well as status. She would have been expert at her craft, which was one generally carried out when other tasks had been completed. The deposition of spinning equipment in her grave may also have been intended to signify that she had leisure to spin, in the same way that the wool basket and spinning equipment coupled with a jewellery box depicted on the South Shields tombstone of the Catuvellaunian freedwoman Regina, shown seated on a basket chair, implied comparative wealth and freedom from physically hard domestic tasks (*RIB* 1065).

Catalogue

Fig. 8, SF 47. (551). Found under the right shoulder. Bone spindle-whorl made from the articular condyle of a cattle femur. The spindle hole is a well worn hour-glass shape. Diameter 46 mm, height 24 mm; weight 18 g. Minimum diameter of spindle hole 11 mm.

Fig. 8, SF 46. (552). Found by the left shoulder. Bone spindle-whorl as SF 47. The spindle hole is hour-glass-shaped and worn. Diameter 42 mm, height 23 mm; weight 18 g. Minimum diameter of spindle hole 4 mm.

Appendix D. Environmental Reports

D.1 Human bone

By Zoe Ui Choileain

Introduction and methodology

D.1.1 Two inhumations [551], [610] and a single urned cremation [525] were found during the excavation at Witchford recycling centre. The inhumations and the cremations range in date with the cremation dating to the middle 1st century AD whilst the inhumations were probably *c*.2nd century AD. They were all were found within the same area surrounded by an enclosure ditch-possibly part of a mortuary complex. It is possible that this may have been a burial plot although the number of individuals discovered is too few to definitively interpret the area as such.

D.1.2 The remains were analysed to determine the age, sex and stature of the individuals and to record any pathological changes that could be observed. General methods used in the osteological analysis of the skeletal material were those of Bass (1995) Brickley (2004) and Buikstra and Ubelaker (1994). Completeness was estimated by recording, as a percentage, how much of the skeleton had survived and assigning it to one of the following categories:

1 = < 25% complete

2 = 25-50% complete

3 = >50-75% complete

4 = > 75% complete

D.1.3 Fragmentation was scored as either high (most bones fragmented and in pieces), moderate (approximately half of the skeleton has bones that are in fragments) or low (limited or few bones are fragmented).

D.1.4 The condition of the bone was assessed according to the degree of erosion of the bone surface and how much of the epiphyses (the ends of the bones) and cancellous bone (the spongy bone that is beneath the outer layer) had survived. Condition was graded on a scale of 0 (no erosion) to 5+ (extensive erosion), in accordance with the criteria set out by McKinley.

D.1.5 An assessment of age was based on the pubic symphysis as described by Brooks and Suchey (1990) and on changes to the auricular surface Lovejoy *et al* (1985). The age categories used in this report are:

Young adult 18-25 years

Prime adult 26-35 years

Mature adult 36-45 years

Older adult > 45 years

Adult (non-specific) >18 years

D.1.6 The sex of the individuals was ascertained where possible from sexually dimorphic traits on the pelvis and the skull. A stature estimate was determined using the method outlined in Trotter (1970).

D.1.7 Osteological analysis of the cremation followed procedures outlined for cremated human bone by McKinley (2002 and 2004). The cremation was excavated in the lab in 2cm spits. It was sieved for analysis into >5mm, <5mm >2mm and >2mm fractions.

Results

D.1.8 The results are summarised in the tables below:

Skeleton	Burial position	Orientation*	Grave depth(m)	Age	Sex	Stature (m)	Pathology	Grave goods
551	Semi flexed	E-W	0.24	Older adult	Female	1.65	Caries, calculus OA	Two bone spindle-whorls
610	Semi flexed	N-S	0.59	Adult	Probably female		Enamel hyperplasia	5 copper-alloy rings

Table 16: I*nhumations*

*position of the skull referred to first. OA = osteoarthritis

Context (fill)	Context (Cut)	Total weight (g)*	Age	Depth of deposit (cm)	Deposit type
525	526	158	Adult	0.07	Urned

Table 17: C*remation 526*

* total weight of bone > than 2mm

Preservation

D.1.9 The skeletal analysis has been affected both by the incompleteness of the skeletons and the fragmentary condition of the surviving bones. Skeleton [610], the body in the deeper grave cut, was less than 25% complete and highly fragmented. Fragments of skull, arms hands, legs and feet were present. The ribs and vertebrae were extremely fragmented and little remained.The pelvis was almost entirely missing therefore this individual was sexed on skull traits alone. Most of the long bones were represented by shaft fragments only with badly damaged epiphyses/ joint surfaces only present on the left humerus and the femurs. The surface condition of the bones was good-fair however with some root damage present. This was consistant with McKinley's grade 3 because the general morphology of the bones had been retained, but most of the bone surfaces had been affected by some degree of erosion, which had masked the detail of some parts (Mckinley 2004, 16).

D.1.10 Skeleton [551], although the grave cut was shallower, was better preserved allowing for a more detailed analysis of the remains. The skeleton was was between 50 - 75% complete and fragmentation was scored as moderate. Fragments of the skull, arms, legs, pelvis, hands, feet, ribs and vertebrae were present. The arms were the most complete bones with the left humerus being suitable to use for stature estimation. Most

epiphyses/joint surfaces were surviving as had a large amount of the cancellous bone. Like [610] the surface condition of the bones was consistant with Mckinley's grade 3.

D.1.11 The cremation had been truncated by ploughing however what remained was very well preserved with a large amount of cancellous bone and some joint surfaces present. Several large diagnostic pieces of bone were contained inside the urn - mainly long bone shafts but also a humeral head.

Discussion

Skeleton [610]

D.1.12 Analysis of the less complete skeleton [610] identified the individual to be probably female and the broad age range of adult was assigned based on the degree of ostearthritis observed although as this is not a particularly reliable technique. While it appears than the skeleton is younger than [551] not enough diagnostic traits survived to confirm this. While a stature estimate was not possible the robustity of the bones suggests a slighter build than that of [551]. Exaggerated muscle attachments on all of the long bones were present. All of the teeth bar one lower first premolar were missing the mandible was fully present although badly fragmented but the maxilla was absent. The mandible showed almost total resorption meaning that the teeth were lost some time before the individuals death. Tooth loss often occurs later in life but as the bones show very little porosity or signs of degenerative joint disease it is possible that here it is at least in part the result of the individuals diet. The premolar showed almost no enamel with no signs of wear or breakages. This trait is a congenital condition known as 'peg tooth'. Congenital conditions are most often the result of defects occurring within the womb. This skeleton was buried in an unusually deep grave for the period and this plus the five copper rings found on the hand of skeleton [610] suggests that this individual may have been of a higher status.

Skeleton [551]

D.1.13 Skeleton [551] was much less fragmentary allowing a more detailed analysis to be made. The individual could be identified as a mature adult female, the auricular surface and pubic symphisis suggest an age upwards of 45 although probably not any higher than mid fifties. This diagnosis was based upon the categories for ageinggg using the pubic symphysis by Brooks and Suchey (1990) and those laid out for aging using the auricular surface by Lovejoy et al (1985). Severe osteoarthritis was observed on the joint surfaces most particularly that of the hip and knee joints with osteophytes also beginning to appear on the shoulder joints which is rare. Extra bone growth and lipping were also observed on the pelvis, lumber and lower vertebrae also a sign of degenerative joint disease which becomes more common in old age. The level of OA was determined using the standards laid down by Buikstra and Ubelaker (1994 122). Possible Schmorl's nodes may be beginning to develop in the lumber vertebrae although the condition of the vertebrae give no conclusive evidence for this. Like skeleton [610], [551] displays very exaggerated muscle attachments on all of the bones including that of the remaining wrist bones. This in conjunction with the extreme osteoarthritis displayed could suggest a life including a large amount of physical activity although there are many causes of OA including not just age and activity but also diet and genetic predisposition. The teeth of this individual were almost all present. Of the upper teeth all four incisors both canines, three upper premolars and three upper

molars were worn down to the dentine.The three lower molars were also worn down to the dentine with caries being present on all three. Tooth wear, or dental attrition, progresses with the advancement of age because older people would have used their teeth to masticate(chew) than younger people. Dental attrition can also be a sign of an agricultural diet with rougher foods such as grain being consumed. This body was also buried with grave goods two bone spindle-whorls being retrieved.

Cremation [525]

D.1.14 Cremation [525] was found in a shallow pit in the same area as the two inhumations. The cremation was urned with a secondary urn which was empty positioned beside it in the pit. Both urns had been truncated by ploughing meaning that not all of the cremation remained. The total weight of the remaining bone was 158g and of this several large diagnostic pieces were noted. Recognisable fragments of the humerus and ulna survived including the humeral head. Numerous fragments of skull, vertebrae and ribs were also present suggesting a bias towards the upper half of the body although as half of the urn is missing this cannot be fully confirmed. It was possible to identify the individual as an adult but a more specific age or sex could not be estimated. The pyre heat can be determined by the colour of the remains white being a sign of high temperature. The skull vertebrae and ribs were buff white in colour meaning that these bones were exposed to temperatures of over 600 degrees centigrade while the arm bones were a more blue white suggesting a slightly lower temperature in this area. This is natural as the hottest part of the fire would have been in the centre of the body. The urn contained no charcoal or evidence of pyre debris indicating that the remains had been carefully picked from the pyre rather than scooped up. The fact that the cremation was both urned and that the pit contained a secondary urn suggests that like the inhumation this person was of high status.

Further Work and Methods statement

D.1.15 While no further analysis is required on the bones it is recommended that both inhumations are sent for carbon dating in order to determine how long ago they had been buried and this would help to show how long the possible mortuary enclosure was in use.

D.2 **Mammal bone**

By Chris Faine

Introduction and methodology

D.2.1 Five point two kilograms of faunal material was recovered from the evaluation and excavation at Witchford, Ely, yielding 93 “countable” bones (see below). All bones were collected by hand apart from those recovered from environmental samples; hence a bias towards smaller fragments is to be expected. Residuality appears not be an issue and there is no evidence of later contamination of any context. Faunal material was recovered from pits and ditches largely dating from the Early Roman period. Two hundred and twenty-nine fragments of animal bone were recovered with 92 identifiable to species (40% of the total sample).

Methodology

D.2.2 All data was initially recorded using a specially written MS Access database. Bones were recorded using a version of the criteria described in Davis (1992) and Albarella & Davis (1994). Initially all elements were assessed in terms of siding (where appropriate), completeness, tooth wear stages (also where applicable) and epiphyseal fusion. Completeness was assessed in terms of percentage and zones present (after Dobney & Reilly, 1988). Initially the whole identifiable assemblage was quantified in terms of number of individual fragments (NISP) and minimum numbers of individuals MNI (see Table 18). The ageing of the population was largely achieved by examining the wear stages of cheek teeth of cattle, sheep/goat and pig (after Grant, 1982). Wear stages were recorded for lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. The states of epiphyseal fusion for all relevant bones were recorded to give a broad age range for the major domesticates (after Getty, 1975). Measurements were largely carried out according to the conventions of von den Driesch (1976). Measurements were either carried out using a 150mm sliding calliper or an osteometric board in the case of larger bones.

The Assemblage

D.2.3 Table 18 shows the species distribution for the entire assemblage. As one would expect the assemblage is dominated by the domestic mammals with roughly equal numbers of cattle and sheep/goat remains, along with smaller numbers of pig and horse. Whilst some Late Iron Age features contained faunal material, the vast majority (77%) was recovered from Early Roman (Mid 1st to Late 2nd Century) contexts. As mentioned above Iron Age faunal material is limited, consisting of fragmentary cattle and pig scapulae and a single portion of sheep/goat tibia. By far the largest amount of Early Roman material was recovered from contexts comprising boundary ditch C. Table 19 shows the distribution of the main domesticates compared to contemporary sites in the area. The proportions at Witchford are broadly similar, with the site having slightly higher numbers of sheep remains. Higher numbers of medium size mammal remains have been suggested as being more indicative of settlement core (Wilson, 1996), a pattern that has been some contemporary sites such as Wardy Hill (Davis, 2003) but not at others such as Hurst Lane (Higbee, 2007).

D.2.4 Cattle remains from the Early Roman assemblage consisted largely of lower limb elements, portions of the axial skeleton and loose teeth. Only two upper limb elements were recovered. The majority of these elements were from adult animals, with 58% of the sample showing evidence of butchery. The sheep/goat assemblage shows similar patterns, again consisting of lower limb elements, especially radii and tibiae. Seventy-seven percent of the sample showed evidence of butchery. Pig remains are limited, consisting a fragmentary adult mandible and 1st phalange.

D.2.5 Horse remains from Early Roman contexts are limited to single portion of tibia and a number of loose mandibular molars. Two of these displayed developmental defects in the shape of deformed roots leading to abnormal wear on the occlusal surfaces. Morphological and metrical analysis of the enamel folds on an M1/2 from boundary ditch C (context 584**)** could suggest the presence of mule in the assemblage (Baxter, 1998, p.10). However identification form a single tooth is tenuous, in addition to the fact that mule is difficult to distinguish from horse, due to their shared characteristics compared to other hybrids. Whilst mules were certainly employed both by the army and the *cursus publicus* (Ibid, p.6) their presence in North-West European deposits is rare, with the majority of these being complete mandibles (Armitage and Chapman 1979, p.345-9).

D.2.6 Dog remains are mostly fragmentary, consisting mostly of loose teeth, mandible fragments and carpal and tarsal bones. Only one portion of long bone (an adult humerus) was recovered. Bird remains were limited to two fragmentary femora from a domestic fowl and an unidentified wader. Identifiable material from environmental samples consisted of two slow worm (*Angius fragilis*) scales.

Conclusions

D.2.7 This is small assemblage compared to other contemporary sites in the area, albeit with similar species proportions. The high prevalence of lower limb and cranial elements in the domestic mammal assemblage suggests on site processing/primary butchery of carcasses, with meat bearing elements possibly being transported elsewhere (or at the very least outside the limits of this excavation). It has been suggested that some Iron Age settlements in the area may have supplied beef and mutton in particular to possible local centres such as Wardy Hilll (Davis, 2003). Horses were likely used for traction and ridden. The slow worm and bird remains are indicative of the general environment at the time.

	NISP	NISP%	MNI	MNI%
Cattle (*Bos*)	35	37	13	30.9
Sheep/Goat (*Ovis/Capra*)	31	33.1	13	30.9
Pig (*Sus scrofa*)	4	4.2	4	9.6
Horse (*Equus caballus*)	9	9.6	4	9.6
Dog (*Canis familiaris*)	11	11.7	4	9.6
Domestic fowl (*Gallus sp.*)	1	1.1	1	2.3
Unid. Bird	1	1.1	1	2.3
Slow Worm (*Anguis fragilis*)	2	2.2	2	4.8
Total	**94**	**100**	**42**	**100**

Table 18: Species distribution for the entire assemblage

	% NISP Cattle	% NISP Sheep	% NISP Pig
Witchford	50	44	6
Hurst Lane (Higbee, 2007)	45	41	9
West Fen Rd (Higbee, 2005)	52	42	6
Prickwillow Rd (Deighton, 2003)	53	36	11

Table 19: Proportions of the main domesticates compared to other contemporary sites

D.3 Mollusca

By Rob Atkins

Introduction and methodology

D.3.1 Five Oyster shell fragments were recovered from Roman features, four in the excavation and one in the evaluation. One oyster shell was found in Evaluation Trench 38 from context from (78), fill of Early Roman boundary ditch (**A**). Four oyster shells were found from Early Roman boundary ditch **C**.

D.3.2 A further two oyster shells and a cockle shell were found in post-medieval features in the evaluation (Atkins 2009).

D.4 Environmental samples

By Rachel Fosberry

Introduction and methodology

D.4.1 Twenty-five bulk samples were taken from across the evaluation and excavated phases. At the evaluation six bulk samples had been assessed and the results had shown that preservation was poor with limited potential for the recovery of plant remains (Fosberry 2009). Features sampled included an early Bronze Age pit, along with pits, ditches, post-holes and two graves and a single cremation dating to the LPRIA/Roman period.

D.4.2 Samples 24 and 25 consisted of the contents of vessels 525 and 529 from cremation pit 528. These samples were wet-sieved using a 1mm sieve. The residue was sorted and discarded.

D.4.3 The remaining bulk samples were soaked in a solution of sodium carbonate for two weeks prior to processing in order to break down the heavy clay. Up to thirty litres of each sample were processed by tank flotation for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The flot was collected in a 0.3mm nylon mesh and the residue was washed through a 0.5mm sieve. Both flot and residue were allowed to air dry. The dried residue was passed through 5mm and 2mm sieves and a magnet was dragged through each resulting fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The flot was examined under a binocular microscope at x16 magnification and the presence of any plant remains or other artefacts are noted on Table 20.

Quantification

D.4.4 For the purpose of this initial assessment, items such as seeds, cereal grains and small animal bones have been scanned and recorded qualitatively according to the following categories

= 1-10, ## = 11-50, ### = 51+ specimens

D.4.5 Items that cannot be easily quantified such as charcoal, magnetic residues and fragmented bone have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Preservation

D.4.6 Preservation is by carbonisation and is generally poor.

Sample No.	Context No.	Cut No.	Feature Type	Comments	Flot Volume (ml)	Cereals	Weed Seeds	Snails from flot	Small Bones	Charcoa <2mm	Charcoal > 2mm	Flot comments	Small animal bones	Large animal bones	Pottery	Flint debitage	Residue comments
1	78	79	Boundary ditch A	Roman ditch with lots of pot but comparatively little bone. Probably associated with nearby settlement or field system. Seems to have filled quickly	5	#	#	0	0	+	+		0	0	#	0	
2	99	101	Pit	organic fill, small bones noted	10	#	0	0	0	+	+		0	0	0	0	no finds
3	96	97	Pit	basal fill of pit – earliest in pit sequence	10	0	0	0	0	+	0		0	0	0	0	no finds
4	110	112	Boundary ditch C	main fill of large Roman dutch which truncates smaller undated ditch. Poss boundary ditch	15	0	0	0	0	+	0		0	0	0	0	no finds
5	90	91	Post hole	Half of a Roman post-hole	2	0	0	0	0	+	0		0	0	0	0	no finds
6	92	93	Post hole	Half of a Roman post-hole	2	0	0	0	0	+	0		0	0	0	0	no finds
20	547	549	Beaker pit	Dark material containing charcoal and burnt nuts?	60	#	0	0	0	+++	++	Small fragments of hazelnut in flot	0	0	##	#	charcoal c.40%
21	553	550	Grave	burial fill around HSR 551 – taken from feet area	2	0	0	0	0	+	+		0	0	0	0	no finds
22	562	564	Grave	upper silty fill of possible grave cut	5	0	0	0	0	+	0		0	0	0	0	no finds
23	563	564	Grave	redeposited natural fill of grave cut	1	0	0	0	0	+	0		0	0	0	0	no finds
24	527	528	Cremation	fill around cremation in [528}	2	0	0	0	0	+	0		0	0	0	0	no finds
25	525	528	Cremation vessel fill	fill of cremation vessel (526)	0	0	0	0	0	0	0		0	0	0	0	
26	529	528	Cremation vessel fill	fill of secondary cremation vessel	0	0	0	0	0	0	0		0	0	0	0	
27	603	604	Post hole	fill of post hole	1	0	0	0	0	+	0	fired clay fragments	0	0	0	0	no finds
28	608	607	Post hole	very dark brown fill, within cremation cemetery so important. Common fired clay and some cremated bone	60	0	#	0	##	+++	+++	Chenopodium sp., Gallium aparine, un-id bone- slow-worm?	0	0	0	0	charcoal c. 15%, no finds
29	609	564	Grave	head and thorax area of skeleton	15	0	0	0	0	+	0	abundant microscopic bone fragments	0	#	0	0	
30	609	564	Grave	lower area of skeleton	2	0	0	0	0	+	0	abundant microscopic bone fragments	0	#	0	0	
31	618	619	Post hole	very dark fill, adjacent to burial cemetery	35	0	0	0	0	+++	+++	charcoal only	0	#	#	0	Charcoal <10%
32	520	518	Pit	fill of pit containing Roman material and charcoal flecks	15	0	0	0	0	+	0		0	0	0	0	no finds
33	523	551	Grave	from region of the head	15	#	0	0	0	++	+	abraded grain	0	##	0	0	
34	596	595	Ditch 4	ditch adjacent to cemetery. Fill of Roman pot	1	0	0	0	0	+	0		0	0	0	0	no finds
35	632	629	Bounday ditch C	tertiary fill of early Roman ditch. 1.2M deep	1	0	0	0	0	+	0	no waterlogging	0	#	0	0	
36	631	629	Boundary ditch C	backfill in deep early Roman ditch – contain lots of snails	15	0	0	###	0	++	+		0	#	0	0	
37	631	629	Boundary ditch C	sample taken from around PCB found in fill of deep ditch	1	0	0	##	0	+	0	no hammerscale	#	0	#	0	
38	660	662	Boundary ditch C	material around small bone collection, possibly a dog. A glass bead was found amongst the bones.	5	0	0	###	0	+	0	wetland snails	#	#	0	0	

Table 20: Results from environmental samples

Plant Remains

Cereals

D.4.7 Charred cereal grains occur in four of the samples in quantities of less than five specimens in each. Wheat (*Triticum* sp.) grains are present although identification is tentative due to poor preservation No chaff elements occur.

Weed seeds

D.4.8 Charred weed seeds are extremely rare and only occur in Sample 28, fill 608 of post hole 607. Goosefoot (*Chenopodium* sp.) and cleavers (*Gallium aparine)* were noted in the flot.

Ecofacts and Artefacts

D.4.9 Animal bone fragments were noted in some of the residues along with occasional small rodent bones. Sample 28 contained several small bones that have been tentatively identified as slow-worm (*Anguis fragilis*).

D.4.10 Sample 20, fill 547, pit 549 contains pieces of Beaker pottery, small fragments of hazelnuts (*Corylus avellana*) and occasional cremated bones.

D.4.11 Sample 28 and Sample 31, context 618, post hole 619, both contain substantial amounts of charcoal. Neither post hole showed evidence of burning in situ so the charcoal must have been deposited either after the post was removed or accumulated around the post. The post holes are close enough to be associated and are near to the burial cemetery; it is just possible that the charcoal may be pyre debris.

Contamination

D.4.12 Modern roots were present in all of the samples.

Discussion

D.4.13 In general the samples were poor in terms of identifiable material. The flots produced a low abundance of charred material in the form of cereal grains and sparse charcoal fragments The occasional cereal grains were all poorly preserved along with extremely rare charred weed seeds.

D.4.14 The plant remains recovered offers little insight into the diet and economy of the site. The lack of food plants is somewhat unusual as the presence of animal bone shows that food waste was being deliberately deposited. Hearth waste, which is comprised of charcoal and possibly charred grain and seeds, does not seem to have been included and there is no evidence of any agricultural practices such as crop processing.

D.4.15 The charred cereal grain recovered from Sample 33, fill 523 of grave 551 is very abraded presumably because it had been redeposited when the grave was dug.

Further Work and Methods Statement

D.4.16 The charred hazelnuts and/or associated charcoal is recommended for submission for a radiocarbon (AMS) date.

Appendix E. Bibliography

Albarella, U., and Davis, S. J. M., 1994. *The Saxon & Medieval animal bones excavated 1985-1989 from West Cotton, Northamptonshire,* AML Rep. Ser. 17/1994

Allen, D., 1988 *Roman Glass in Britain* Shire Archaeology

Allen, T. G. and Kamash, Z., 2008 *Saved from the grave: Neolitihic to Saxon discoveries at Spring Road Municipal Cemetery, Abingdon, Oxfordshire, 1990-2000*, Thames Valley Landscapes 28 (Oxford)

Annable, F. K. and Simpson, D. D. A., 1964 *Guide catalogue of the Neolithic and Bronze Age collections in Devizes Museum* (Devizes)

Armitage, P., and Chapman, H. 1979 'Roman Mules', *The London Archaeologist* 3, 339-46

Ashbee, P., 1978 'Amesbury Barrow 51: excavation 1960', *Wiltshire Archaeological Magazine* 70-1, 1-60

Atkins, R., 2009 Late Iron Age and Roman Settlement on Land off Stirling Way, Nr. Witchford, Ely Oxford Archaeology East Evaluation Report 1061 (unpublished)

Atkins, R., forthcoming Prehistoric to Roman Remains Along the Partney By-Pass, Lincolnshire Lincs. Monograph Ser.

Atkins, R., and Mudd, A., 2003 'An Iron Age and Romano-British settlement at Prickwillow Road, Ely, Cambridgeshire: Excavations 1999-2000', *Proc. Cambridge Antiq. Soc.* 92, 5-55

Bamford, H., 1982 *Beaker Domestic Sites in the Fen Edge and East Anglia,* E. Anglian Archaeol. 16

Barclay, A. and Halpin, C., 1999 *Excavations at Barrow Hills, Radley, Oxfordshire, I: the Neolithic and Bronze Age monument complex*, Thames Valley Landscapes 11 (Oxford)

Bass, W. M. 1995 *Human Osteology A Laboratory and Field Manual.* Missouri Archaeological Society special edition 2

Baxter, I. L., 1998 Species identification of equids from Western European archaeological deposits: methodologies, techniques and problems in Anderson, S., and Boyle, K. (eds.), *Current and Recent Research in Osteoarchaeology* Proceedings of the third meeting of the Osteoarchaeological Research Group held in Leicester on 18th November 1995, pp. 3-17. (Oxford: Oxbow)

Bayley, J. and Butcher, S. A, 2004 *Roman brooches in Britain: a technological and typological study based on the Richborough collection* (London)

Brailsford, J. W., 1962 *Hod Hill 1: Antiquities in the Durden Collection* (London)

Bulleid, A. and Gray, H. St. G., 1917 *The Glastonbury lake village 2* (Glastonbury)

Brickley, M 2004 *Guidlines to the Standards for Recording Human Remains* IFA paper No. 7 British Association for Biological Anothropology and Osteoarchaeology and the Institute of Field Archaeologists

British Geological Survey (BGS) 1980 1:50000 Series Solid and Drift Sheet 173 Ely

British Geological Survey (BGS) 1988 Geology of the country around Ely, Memoir for the 1:50000 geological sheet 173

Brodie, N., 1997 'New perspectives on the Bell-beaker culture', *Oxford Journal of Archaeology* 16(3), 297-314

Brooks S.T. and Suchey, J.M., 1990 'Skeletal age determination based on the Os Pubis: A Comparison of the Acsadi-Nemerskeri and Suchey-Brooks methods', *Human Evolution* 5, 227-238

Buikstra J.E. and Ubelaker D.H., 1994 *Standards for Data Collection from Human Skeletal Remains.* Arkansas Archaeological Survey Research Series No. 44

Bush, L., 2008 Evaluation at Highfield School, Ely, Cambridgeshire Oxford Archaeology East Report 1047 (Unpublished)

Chapman, A., Carlyle, S., and Leigh, D., 2005 'Neolithic and Beaker pits, and a Bronze Age landscape at Fenstanton', *Proc. Cambridge Antiq. Soc.* 94, 5-20

Charters, S., Evershed, R.P., Goad, L.J., Leyden, A., Blinkhorn, P. W., and Denham V., 1993 Quantification and distribution of lipid in archaeological ceramics: implications for sampling potsherds for organic residue analysis and the classification of vessel use, *Archaeometry* 35: 211-223

Charters, S., Evershed, R.P., Blinkhorn, P.W. and Denham, V., 1995 Evidence for the mixing of fats and waxes in archaeological ceramics, *Archaeometry* 37: 113- 127

Charters, S., Evershed, R. P., Quye, A., Blinkhorn, P. W. and Reeves, V. 1997 Simulation experiments for determining the use of ancient pottery vessels: The behaviour of epicuticular leaf wax during boiling of a leafy vegetable, *Journal of Archaeological Science* 24: 1-7

Clark, J. G. D., 1933 'Report on an Early Bronze Age Site in the South-Eastern Fens', *Antiq. J.* XIII, 266-296

Clarke, D.L., 1970 *Beaker Pottery of Great Britain and Ireland,* (Cambridge University Press:Cambridge)

Clarke, G., 1979 *Winchester studies 3. Pre-Roman Winchester Part II-the Roman cemetery at Lankhills* (Oxford University Press:Oxford)

Clifford, E. M., 1930 'A prehistoric and Roman site at Barnwood, near Gloucester' *TBGAS* 52, 201-254

Coles, J. M., 1987 *Meare Village East. The excavations of A. Bulleid and H. St. George Gray 1932-1956* (Exeter)

Connor, A., 2009 'A fen island burial: excavation of an Early Bronze Age round barrow at North Fen, Sutton', *Proc. Cambridge Antiq. Soc.* 98, 37-46

Copley, M. S., Berstan, R., Dudd, S. N., Docherty, G., Mukherjee, A. J., Straker, V., Payne, S. and Evershed, R. P. 2003 Direct chemical evidence for widespread dairying in prehistoric Britain, *Proceedings of the National Academy of Sciences* 100: 1524-1529

Copley, M.S., Bland, H.A., Rose, P., Horton, M. and Evershed, R.P. 2005a Gas chromatographic, mass spectrometric and stable carbon isotopic investigations of organic residues of plant oils and animal fats employed as illuminants in archaeological lamps from Egypt, *Analyst* (2005) 130: 860-871

Copley, M.S., Berstan, R., Dudd, S.N., Aillaud, S., Mukherjee, A.J., Straker, V., Payne, S. and Evershed, R.P. 2005b Processing of milk products in pottery vessels through British prehistory, *Antiquity* 79: 895-908

Crank, N.A., 2000 Plot C Lancaster Way Business Park, Ely. An archaeological evaluation Hertfordshire Archaeological Trust Report 0748 (unpublished)

Crummy, N., 1983 *The Roman small finds from excavations in Colchester 1971-9*, Colchester Archaeological Report 2 (Colchester)

Crummy, N., 1992 'The Roman small finds from the Culver Street site' in P. Crummy, *Excavations at Culver Street, the Gilberd School, and other sites in Colchester 1971-85*, Colchester Archaeological Report 6 (Colchester), 140-205

Crummy, N., 2003 'The metalwork' in M. Hinman, *A Late Iron Age farmstead and Romano-British site at Haddon, Peterborough*, Cambs CC Archaeol Field Unit Monograph 2/BAR Brit Ser 358 (Oxford), 108-14

Crummy, N., 2006 'Small finds and bulk metalwork', pp 71-4 in K. Nicholson, 'A late Roman cemetery at Watersmeet, Mill Common, Huntingdon', *Proc Cambridge Antiq Soc* 95, 57-90

Crummy, N., Crummy, P. and Crossan, C., 1993 *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971-88*, Colchester Archaeol Rep 9 (Colchester)

Crummy, P., Benfield, S., Crummy, N., Rigby, V. and Shimmin, D., 2007 *Stanway: an élite burial site at Camulodunum*, Britannia Monograph 24 (London)

Cunliffe, B. and Poole, C., 1991 *Danebury: an Iron Age hillfort in Hampshire, 5. The excavations 1979-88: the finds*, CBA Res Rep 73 (London)

Cunnington, M. E., 1923 *All Cannings Cross* (Devizes)

Darling, M. J., 2004 'Guidelines for the archiving of Roman Pottery', *Journal of Roman Pottery Studies* Vol 11

Davies, J. A., 1996 'The Iron Age and Roman periods', in Margeson,S., Ayers, B., and Heywood, S. (eds.), *A festival of Norfolk Archaeology* (Norwich)

Davis, S. J. M., 2003 'Animal Bone', in Evans, C., *Power and Island communities: excavation of the Wardy Hill ringwork, Coveney, Ely.* EAA 103. Cambridge.

Davis, S. J. M., 1992 *A rapid method for recording information about mammal bones from archaeological sites,* AML rep. 81/91 (London)

Deighton, K. 2003 'Animal Bone', in Atkins, R., and Mudd, A., 2003 'An Iron Age and Romano-British settlement at Prickwillow Road, Ely, Cambridgeshire: Excavations 1999-2000', *Proc. Cambridge Antiq. Soc.* 92, 5-55

Dobney, K., Reilly, K.,1988 'A method for recording archaeological animal bones: the use of diagnostic zones', *Circaea* 5(2), 79-96

Dodwell, N., 2005 'Human bone', in Mortimer, R., Regan, R., and Lucy, S., 2005 *The Saxon and medieval settlement at West Fen Road, Ely: The Ashwell Site, Cambridge* E. Anglian Archaeol. 110, 89

Dodwell, N., 2007 'Human bones', in Evans, C., Knight, M. and Webley, L., 2007 'Iron Age settlement and Romanisation on the Isle of Ely: the Hurst Lane Reservoir site', *Proc. Cambridge Antiq. Soc.* 96, 66

Driesch, A von den., 1976. *A guide to the measurement of animal bones from archaeological sites*, Harvard: Peabody Museum of Archaeology and Ethnology Bulletin 1.

Drummond-Murray, J., 2008 Specification for Archaeological Excavation East Cambs Recycling Centre Oxford Archaeology East report (unpublished)

Dudd, S. N. and Evershed, R. P. 1998 Direct demonstration of milk as an element of archaeological economies, *Science* 282: 1478-1481

Dudd, S.N., Gibson, A.M. and Evershed, R.P., 1999 Evidence for varying patterns of exploitation of animal products in different prehistoric pottery traditions based on lipids preserved in surface and absorbed residues, *Journal of Archaeological Science* 26: 1473-1482

Evans, C., 2003 *Power and island communities: excavations at Wardy Hill ringwork, Coveney, Ely*, E. Anglian Archaeol. 103

Evans, C., and Hodder, I., 2006 *Marshland Communities and Cultural Landscape: The Haddenham Project Vol. 2,* (Cambridge: McDonald Institute Research Series)

Evans, C., Knight, M., and Webley, L., 2007 'Iron Age settlement and Romanisation on the Isle of Ely: the Hurst Lane Reservoir site', *Proc. Cambridge Antiq. Soc. 96*, 41-78

Evans, J., 2003 'The Pottery', in Hinman, M., *A Late Iron Age Farmstead and Romano-British Site at Haddon, Peterborough* British Archaeological Report 358, 105-107

Evershed, R. P.,1993 Biomolecular archaeology and lipids, *World Archaeology* 25: 74-93

Evershed, R.P., 2008 Experimental approaches to the interpretation of absorbed organic residues in archaeological ceramics, *World Archaeology* 40: 26-47

Evershed, R. P., Heron, C. and Goad, L. J., 1990 Analysis of organic residues of archaeological origin by high-temperature gas-chromatography and gas-chromatography mass- spectrometry, *Analyst* 115: 1339-1342

Evershed, R. P., Heron, C. and Goad, L. J., 1991 Epicuticular wax components preserved in potsherds as chemical indicators of leafy vegetables in ancient diets, *Antiquity* 65: 540-544.

Evershed, R. P., Heron, C., Charters, S. and Goad, L. J., 1992 In Pollard, A. M.(ed.) *New Developments in Archaeological Science,* Oxford, Oxford University Press, 187-208

Evershed, R. P., Arnot, K. I., Collister, J., Eglinton, G. and Charters, S., 1994 Application of isotope ratio monitoring gas-chromatography mass-spectrometry to the analysis of organic residues of archaeological origin, *Analyst* 119: 909-914

Evershed, R. P., Vaughan, S. J., Dudd, S. N. and Soles, J. S., 1997 Fuel for thought? Beeswax in lamps and conical cups from the late Minoan Crete, *Antiquity* 71: 979-985

Evershed, R. P., Dudd, S. N., Charters, S., Mottram, H., Stott, A. W., Raven, A., van Bergen, P. F. and Bland, H. A., 1999 Lipids as carriers of anthropogenic signals from prehistory, *Philosophical Transactions of the Royal Society of London Series B-Biological Sciences* 354: 19-31

Evershed, R. P., Dudd, S. N., Anderson- Stojanovic, V. R. and Gebhard, E. R., 2003 New Chemical Evidence for the Use of Combed Ware Pottery Vessels as Beehives in Ancient Greece, *Journal of Archaeological Science* 30: 1-12

Evershed, R.P. *et al.*, 2002 Chemistry of archaeological animal fats, *Accounts of chemical research* 35: 660-668

Fosberry, R., 2009 Environmental samples in Atkins, R., Late Iron Age and Roman Settlement on Land off Stirling Way, Nr. Witchford, Ely Oxford Archaeology East Evaluation Report 1061 (unpublished)

Fowler, G., 1948 'Cratendune: A problem of the Dark Ages', *Proc. Cambridge Antiq. Soc.* 41, 70-3

Frere, S. S., 1994 *Britannia. A history of Roman Britain* (London)

Gardiner, F., Pullinger, J. and Henig, M., 2000 'The small finds' in Alexander, J., and Pullinger, J., 'Roman Cambridge: excavations on Castle Hill 1956-1988', *Proc. Cambridge Antiq. Soc.* 88, 85-105

Gdaniec, K., 2008 Brief for Archaeological Excavation Witchford RC Cambridgeshire Archaeology Planning and Countryside Advice (unpublished)

Gibson, A M., 2000 *The Walton Basin Project: Excavation and Survey in a Prehistoric Landscape 1993-7* CBA Research Rep. 118

Gibson, D. and Lucas, G., 2002 'Pre-Flavian kilns at Greenhouse Farm and the Social context of early Roman pottery production in Cambridgeshire', *Britannia* XXXIII, 95-127

Goodburn, R., 1974 'The objects', pp 42-88 in Frere, S.S., and St. Joseph, J.K., 'The Roman fortress at Longthorpe', *Britannia* 5, 1-129

Grant, A., 1982 'The use of tooth wear as a guide to the age of domestic ungulates', in B. Wilson, B.,Grigson C., and Payne, S. (eds.), *Ageing and sexing animal bones from archaeological sites,* BAR British Series 199 (Oxford)

Green, H. S., 1974 'Early Bronze Age burial, territory and population in Milton Keynes, Buckinghamshire and the Great Ouse Valley', *Archaeological Journal* 131, 75-139

Guest, P., 2003 'The coins', in Hinman, M., *A Late Iron Age farmstead and Romano-British site at Haddon, Peterborough*, Cambs CC Archaeol Field Unit Monograph 2/BAR Brit Ser 358 (Oxford), 114

Guido, M., 1978 *The glass beads of the Prehistoric and Roman periods in Britain and Ireland* Society of Antiquaries of London

Hall, D., 1996 *The Fenland Project, Number 10: Cambridgeshire Survey, The Isle of Ely and Wisbech*, E. Anglian Archaeol. 79

Hancock, A., 2003 'Little Paxton Pottery', in Gibson, A. (ed.), *Prehistoric Pottery, People, Pattern and Purpose*. Prehistoric Ceramic Research Group Occasional Publication 4, BAR International Series 1156, 71–110

Hancock, A., 2006 Archaeological evaluation: Ely WT to Haddenham WT, Cambridgeshire Archaeological Services and Consultancy Report 737/EHP/3 (unpublished)

Haverfield, F., 1900 'Romano-British Hampshire' in *Victoria History of Hampshire and the Isle of Wight 1* (London), 265-372

Hawkes, C. F. C. and Hull, M. R., 1947 *Camulodunum*, Soc. Antiq. London Res. Rep. 14 (London)

Higbee. L., 2007 'Animal Bone', in Evans, C., Knight, M., and Webley, L., 2007 'Iron Age settlement and Romanisation on the Isle of Ely: the Hurst Lane Reservoir site', *Proc. Cambridge Antiq. Soc. 96*, 41-78

Higbee. L., 2005 'Animal Bone' in Mortimer, R., Regan, R., and Lucy, S., 2005 *The Saxon and medieval settlement at West Fen Road, Ely: The Ashwell Site, Cambridge* E. Anglian Archaeol. 110

Hill, J.D., with Horne, I., 2003 'Iron Age and Early Roman pottery' in Evans, C., *Power and Island communities: excavations at the Wardy Hill ringwork, Coveney, Ely*, E. Anglian Archaeol. 103, 145-184

HK P. V. Hill and J. P. C. Kent, 'Part 1: the bronze coinage of the House of Constantine AD 324-346' in R. A. G. Carson, P. V. Hill, and J. P. C. Kent, *Late Roman bronze coinage* (London; 1972)

Holmes, M., 2008 Archaeological trial excavation of land south-east of Lancaster Way Business Park, Ely, Cambridgeshire Northamptonshire Archaeology Report 08/121 (unpublished)

Holmes, M., and Simmonds, C., 2009 Archaeological Recording Action on land south-east of Lancaster Business Park (Unit D) Ely, Cambridgeshire November 2008 Northamptonshire Archaeology Report 09/45 (unpublished)

Howe, M.D., Perrin, J.R. and Mackreth, D.F., 1980 *Roman Pottery from the Nene Valley: A Guide,* Peterborough City Museum Occ. Pap. 2

Hunter, J. , 1992 Archaeological Investigations at Bray's Lane, Ely CAU Report 8 (unpublished)

Isings, C., 1957 *Roman glass from dated finds, Groningen* Djakarta

Leith, S.,1995 Lancaster Way Business Park, Ely: an archaeological desk-top study Cambridgeshire County Council Rep. No. 117 (unpublished)

Leith, S., 1996 An archaeological evaluation at Lancaster Way Business Park, Ely TL 512 783 Cambridgeshire County Council Archaeological Field Unit Report (unpublished)

Lovejoy, C., Meindl, R.S., Pryzbeck,T.R., and Mensforth, R.P., 1985 'Chronological metamorphosis of the Auricular Surface of the Ilium: A New Method for the Determination of Age at Death', *American Journal of Physical Anthropology* 68,15-28

Lucas, G., and Hinman, M., 1996 Archaeological Excavations of an Iron Age Settlement and Romano-British Enclosures at Watson's Lane, Little Thetford, Ely, Cambridgeshire, Post-Excavation Assessment Report, Cambridge:CAU Report 194 (unpublished)

Lucas, G., Monteil, G. and Anderson, K., 2007 'The Roman Pottery' in Evans, C, Knight, M, Webley, L., 'Iron Age settlement and Romanisation on the Isle of Ely: the Hurst Lane Reservoir', *Proc. Cambridge Antiq. Soc.* 96, 41-78

Lyons, A.L., 2008 'Roman Pottery', in Abrams, J., and Ingham, D., *Farming on the Edge: Archaeological Evidence from the Clay Uplands to West of Cambridge*, E. Anglian Archaeol. 123

Lyons, A.L., 2009 'A ceramic suspended cauldron found at Scole Romano-Celtic temple, Norfolk', *Journal of Roman Pottery Studies* 14, 91-4

Lyons, A.L., and Percival, S., 2004 An archaeological Analysis of the Iron Age and Roman pottery from Wimblington Road, March, Cambridgeshire, Norfolk Archaeological Unit Specialist Report No. 8 (unpublished)

Lyons, A., and Roberts, J., Forthcoming *Prehistoric, Roman and Anglo-Saxon Remains at Land off Hinxton Road, Duxford, Cambridgeshire,* E. Anglian Archaeol. Rep.

MacGregor, A., 1985 *Bone, antler, ivory and horn. The technology of skeletal materials since the Roman period* (Beckenham)

Major, H., 1999 'Iron objects' in Turner, R., *Excavations of an Iron Age settlement and Roman religious complex at Ivy Chimneys, Witham, Essex 1978-83* (Chelmsford), 99-106

Mann, J. E., 1982 *Early medieval finds from Flaxengate*, The Archaeology of Lincoln 14-1 (London)

Manning, W. H., 1966 'Caistor-by-Norwich and *Notitia Dignitatum*', *Antiquity* 40, 60-2

Manning, W. H., 1985 *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum* (London)

Margary, I.D., 1973 *Roman Roads in Britain* (Trowbridge)

Masser, P. 2001 Archaeological Excavations at West Fen and St John's Roads, Ely, Cambridgeshire: The Trinity and Runciman Lands. Cambridge: CAU Report 432 (unpublished)

Masters, P., 2008 Geophysical survey of land at Witchford, Ely, Cambridgeshire Cranfield Forensic Institute Report No. 023 (unpublished)

McKinley, J.I., 2002 'The Analysis of Cremated Bone' in Cox, M, (eds.), and Mays, S., *Human Osteology in Archaeology and Forensic Science* 403-21, GMM London

McKinley J.I., 2004 'Compiling a skeletal inventory: cremated human bone' in (eds.) M Brickley and J.I. McKinley *Guidelines to the standards for Recording Human Remains* 9-13 IFA Paper No. 7

Mortimer, R., Regan, R., and Lucy, S., 2005 *The Saxon and medieval settlement at West Fen Road, Ely: The Ashwell Site, Cambridge,* E. Anglian Archaeol. 110

Mottram, H.R., Dudd, S.N., Lawrence, G.J., Stott, A.W. and Evershed, R.P., 1999 New chromatographic, mass spectrometric and stable isotope approaches to the classification of degraded animal fats preserved in archaeological pottery, *Journal of Chromatography A* 833: 209-221

Mudd, A., and Webster, M., forthcoming *Iron Age and Middle Saxon settlement at West Fen Road, Ely, Cambridgeshire: Excavations 1999-2000* BAR Mono.

Needham, S. P., 1986 'Late Bronze Age artefacts' in I. M. Stead and V. Rigby, *Baldock, the excavation of a Roman and pre-Roman settlement*, *1968-72*, Britannia Monograph 7 (London), 141-3

Niblett, R., 1985 *Sheepen: an early Roman industrial site at Camulodunum*, CBA Res Rep 57 (London)

Niblett, R., 2006 'From *Verlamion* to Verulamium' in P. Ottaway (ed.), *A victory celebration: papers on the archaeology of Colchester and Late Iron Age-Roman Britain presented to Philip Crummy* (Colchester), 19-26

Palmer, R., 1995 Lancaster Way Business Park, Ely, Cambridgeshire: Aerial Photographic Assessment in Leith, S. 1995 (unpublished)

Payne, S., 1973 'Kill off patterns in sheep and goats: the mandibles from Asvan Kale', *Anatolian Studies* 23, 281-303

Perrin, J.R., 1996 'The Roman Pottery', in Mackreth, D., *Orton Hall Farm: A Roman and Early Saxon Farmstead*, E. Anglian Archaeol. 76, 114–204

Perrin, J.R., 1999 'Roman pottery from excavations at and near to the Roman small town of Durobrivae, Water Newton, Cambridgeshire, 1956-58' *Journal of Roman pottery studies* Vol 8

Phillips, C.W. (ed.) 1970 *The Fenland in Roman times; studies of a major area of peasant colonization with a gazetteer covering all known sites and finds,* Royal Geographic Society Research Series Number Number 5, 227

Philpott, R., 1991 *Burial practices in Roman Britain A survey of grave treatment and furnishing AD 43-410* BAR British Series 219 (Oxford)

Pliny (Gaius Plinius Secundus) *Historia Naturalis* IX, Loeb Classical Library, translation by H. Rackham (London/Cambridge, Mass.; 1952)

Plouviez, J., 2004 'Discussion', in Blagg, T., Plouviez, J., and Tester, A., *Excavations at a large Romano-British settlement at Hacheston, Suffolk in 1973-4* (Ipswich), 83-5

Potter, T. W., 1981 'The Roman occupation of the central Fenland', *Britannia* 12, 79-133

Price, J., and Cottam, S., 1998 *Romano-British Glass Vessels: A Handbook* Practical handbook in archaeology 14

Pugh, R.B. (ed.) 1953 *A History of Cambridgeshire and the isle of Ely, IV, The Victoria History of the Counties of England*, The University of London Institute of Historic Research, London

Ralph, S., 2003 Plot C, Lancaster Way Business Park, Ely: an archaeological excavation report Hertfordshire Archaeological Trust Report 1273 (unpublished)

Raven, A. M., P. F. van Bergen, A. W. Stott, S. N. Dudd and Evershed, R.P.,1997 Formation of long-chain ketones in archaeological pottery vessels by pyrolysis of acyl lipids. *Journal of Analytical and Applied Pyrolysis,* 40-41, 267-85

RCHM(E)., 1969 Peterborough New Town. A survey of the antiquities in the areas of development (HMSO:London)

Rees, G., 2009 Prehistoric Fen Edge Activity at the Sutton Gault Irrigation Reservoir Extension Oxford Archaeology East report 1130 (unpublished)

Rees, H., Crummy, N., Ottaway, P. and Dunn, G., 2008 *Artefacts and society in Roman and medieval Winchester; small finds from the suburbs and defences, 1971-1986* (Winchester)

RIB The Roman Inscriptions of Britain. 1: Inscriptions on stone by R. G. Collingwood and R. P. Wright, ed. R. S. O. Tomlin (Stroud; 1995)

Ritterling, E., 1913 *Das frührömische Lager bei Hofheim in Taunus* (Wiesbaden)

Robinson, B., 1995 A Recording Brief at Lancaster Way, Witchfield Airfield, Ely Cambridgeshire County Council Archaeological Field Unit Report (unpublished)

Robinson, B., and Bray, S., Bronze Age Activity at Ely: An Archaeological Evaluation of Land off the A10 Ely Bypass Cambridgeshire County Council Report A128 (unpublished)

Rogerson, A., 1977 *Excavations at Scole 1973*, E. Anglian Archaeol. 5

Rogerson, A. and Dallas, C., 1984 *Excavations in Thetford 1948-59 and 1973-80*, E. Anglian Archaeol. 22 (Gressenhall)

Salway, P., 1981 *Roman Britain* (Oxford)

Sealey, P. R. 1995 'New light on the salt industry and Red Hills of prehistoric and Roman Essex', *Essex Archaeol Hist* 26, 65-81

Seeley, F., 2004 'Chapter 4. The small finds' in Blagg, T., Plouviez, J., and Tester, A., *Excavations at a large Romano-British settlement at Hacheston, Suffolk in 1973-4* (Ipswich), 86-149

Sellwood, L., 1984a 'Objects of bone and antler' in Cunliffe, B.,*Danebury: an Iron Age hillfort in Hampshire*, CBA Res Rep 52 (London), 371-95

Sellwood, L., 1984b 'Objects of iron' in Cunliffe,B., *Danebury: an Iron Age hillfort in Hampshire*, CBA Res Rep 52 (London), 346-71

Sievers, S., 2001 'Catalogue des armes' and 'Les armes d'Alésia', in Reddé, M., and von Schnurbein, S., (eds.), *Alésia, fouilles et recherches franco-allemandes sur les travaux militaires romains autour du Mont-Auxois (1991-1997), 2: le matériel*, Memoires de l'Academie des Inscriptions et Belles-Lettres (Paris), 121-292

Simmonds, C., and Mason, P., 2008 Archaeological Evaluation of land south-east of Lancaster Way Business Park (Unit D), Ely, Cambridgeshire, ECB 3017, Northamptonshire Archaeology Report 08/151 (unpublished)

Stace, C., 1997 *New Flora of the British Isles* Second edition (Cambridge University Press: Cambridge)

Stead, I. M. and Rigby, V., 1986 *Baldock, the excavation of a Roman and pre-Roman settlement*, *1968-72*, Britannia Monograph 7 (London)

Stead, I. M. and Rigby, V., 1989 *Verulamium: the King Harry Lane site*, HBMCE Archaeol. Rep. 12 (London)

Swan, V. G., 1984 *The pottery kilns of Roman Britain*, Royal Commission on Historical Monuments: Supplementary Series, 5, HMSO, London

Taylor, A., 1993 'A Roman lead coffin with pipeclay figurines from Arrington, Cambridgeshire, Appendix II, Burials in Cambridgeshire', *Britannia* 24, 212-225

Taylor, C.C., 1975 *The Cambridgeshire Landscape* (Cambridge)

Thompson, A., Forthcoming Archaeological excavation: Ely WT to Haddenham WT, Cambridgeshire Archaeological Services and Consultancy Report (unpublished)

Thompson, I., 1982 *Grog-tempered 'Belgic' Pottery of South-eastern England,* BAR British Series 108

Tomber, R and Dore, J., 1998 The National Roman Fabric reference collection, A Handbook. MoLAS Monograph 2

Trotter, M., 1970, 'Estimation of stature from intact long limb bones', in (ed) Stewart, T.D. Personal Identification in Mass Disasters. Washington, Smithsonian Institute

Tyers, P., 1999 *Roman Pottery in Britain* (Routledge)

Walker, F.G., 1910 'Roman Roads into Cambridge', *Proc Cambridge Antiq Soc.* 14, 141-76

Walton Rogers, P., 1997 *Textile production at 16-22 Coppergate*, The Archaeology of York 17/11 (York)

Walton Rogers, P., 2001 'The appearance of an old Roman loom in medieval England' in Walton Rogers, P., Bender Jørgensen, L., and Rast-Eicher, A. (eds.), *The Roman textile industry and its influence* (Oxford), 158-71

Webley, L., and Hillier, J., 2009 'A Fen island in the Neolithic and Bronze Age: Excavations at North Fen, Sutton, Cambridgeshire', *Proc. Cambridge Antiq. Soc.* 98, 36

Webster, G.(ed.), 1976 Romano-British coarse pottery: a student's guide. CBA Research Report No. 6

West, K.,1980 Witchford's Private War, unpublished, Cambridgeshire Collection C.45.7

West, S., 1985 *West Stow, the Anglo-Saxon village*, East Anglian Archaeol. 24 (Ipswich)

West, S., 1990 *West Stow, The Prehistoric and Romano-British Occupations, E. Anglian Archaeol.48*

West, S.E. and Plouviez, J., 1976 The Romano-British site at Icklingham. E. Anglian Archaeol. 3

Whiting, W., 1926 'The Roman cemeteries at *Ospringe*', *Archaeol Cantiana* 38, 123-52

Wild, J. P., 1967 'The *gynaeceum* at Venta and its context', *Latomus* 26, 648-76

Wild, J. P., 1970 *Textile manufacture in the northern Roman provinces* (Cambridge)

Willis, S., 2004 'The Study Group For Roman Pottery Research Framework Document for the Study of Roman Pottery in Britain, 2003' *Journal of Roman Pottery Studies* Vol 11

Woodland, M., 1990 'spindle-whorls' in Biddle, M., *Object and economy in medieval Winchester*, Winchester Studies 7.ii (Oxford), 216-25

Wilson, B., 1996 *Spatial Patterning Amongst Animal Bones in Settlement Archaeology: An English Regional Exploration*. BAR British Series 251 (Oxford)

Zeepvat, R. J., 1987 'Worked bone' in Mynard, D.C. (ed.), *Roman Milton Keynes: excavations and fieldwork 1971*-82, Bucks Archaeol Soc Mono 1 (Aylesbury), 141-5

Appendix F. OASIS Report Form

All fields are required unless they are not applicable.

Project Details

OASIS Number	Oxfordar3-66344		
Project Name	Bronze Age Beaker pits and a Late Iron Age and Roman Settlement on land off Stirling Way Nr. Witchford, Ely		
Project Dates (fieldwork) Start	30-09-2009	Finish	13-01-2011
Previous Work (by OA East)	Yes	Future Work	Yes

Project Reference Codes

Site Code	ELYREC09	Planning App. No.	E/03009/08/CC
HER No.	ECB3287	Related HER/OASIS No.	ECB 3008; Oxfordar3-49605

Type of Project/Techniques Used

Prompt: Environmental Assessment regulations Schedule 1 projects (Obligatory)

Please select all techniques used:

☐ Field Observation (periodic visits)	☐ Part Excavation	☐ Salvage Record
☐ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☐ Recorded Observation	☐ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☒ Open-Area Excavation	☐ Salvage Excavation	☒ Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
pits	Bronze Age -2.5k to -700	Pottery and flint	Bronze Age -2.5k to -700
settlement	Iron Age -800 to 43	Pottery	Iron Age -800 to 43
settlement + burials	Roman 43 to 410	artefacts	Roman 43 to 410

Project Location

County	Cambridgeshire	Site Address (including postcode if possible)	Farm land to the east of the County Depot, Off Stirling Way, Nr Witchford, Ely
District	East Cambridgeshire		
Parish	Ely		
HER	Cambridgeshire		
Study Area	c.1.4ha	National Grid Reference	TL 515 789

Project Originators

Organisation	OA EAST
Project Brief Originator	Kasia Gdaniec, Cambridgeshire County Council
Project Design Originator	James Drummond-Murray, OA East
Project Manager	James Drummond-Murray
Supervisor	Rob Atkins

Project Archives

Physical Archive	Digital Archive	Paper Archive
County Stores, Landbeach	OA East	County Stores, Landbeach
ELYREC09	ELYREC 09	ELYREC09

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☒	☒
Ceramics	☒	☒	☒
Environmental	☒	☒	☒
Glass	☒	☒	☒
Human Bones	☒	☒	☒
Industrial	☒	☒	☒
Leather	☐	☐	☐
Metal	☒	☒	☒
Stratigraphic		☐	☒
Survey		☒	☒
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☒	☒	☒
Worked Stone/Lithic	☒	☒	☒
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☐ GIS	☒ Context Sheet
☐ Geophysics	☒ Correspondence
☒ Images	☒ Diary
☒ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☐ Spreadsheets	☐ Map
☒ Survey	☒ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☒ Photos
	☒ Plans
	☒ Report
	☒ Sections
	☐ Survey

Notes:

Drawing Conventions

Plans

Limit of Excavation			
Deposit - Conjectured			
Natural Features			
Sondages/Machine Strip			
Intrusion/Truncation			
Illustrated Section	S.14		
Archaeological Feature		Grave	
Archaeological Deposit		Cremation	
Excavated Slot		Field Drain	
Post-Medieval Feature		Pottery	
Modern Feature		Cut Number	**118**
Small Find	32	Sample Number	21

Sections

Limit of Excavation	
Cut	
Cut-Conjectured	
Deposit Horizon	
Deposit Horizon - Conjectured	
Intrusion/Truncation	
Top Surface/Top of Natural	
Break in Section/ Limit of Section Drawing	
Cut Number	**118**
Deposit Number	117
Ordnance Datum	18.45m OD
Stone	
Flint	
Black Organic Material	

Convention Key

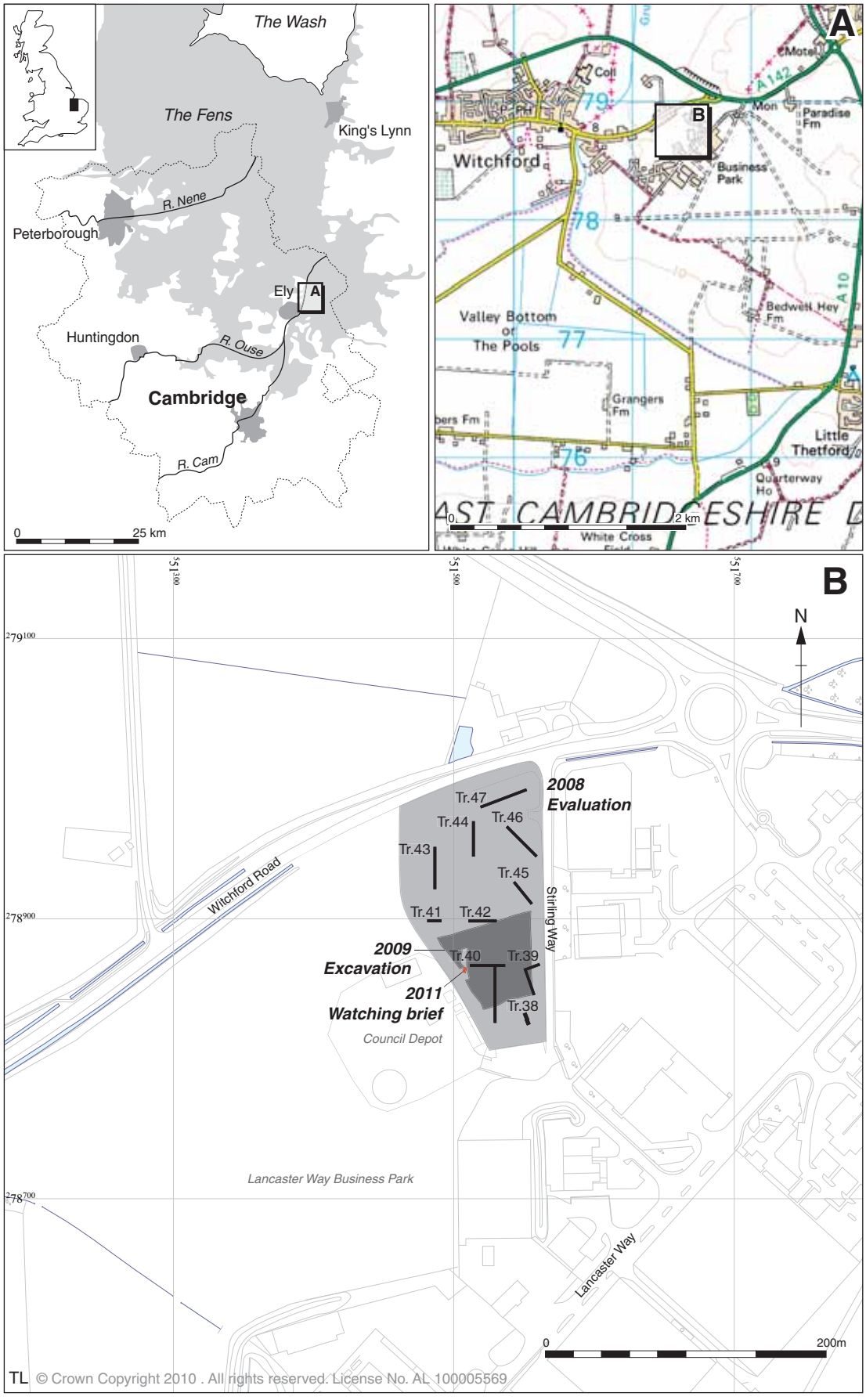


Figure 1: Location of 2008 trenches, 2009 excavation and watching brief areas

Figure 2: Excavation (green) and watching brief (red) areas in relation to proposed development in Phases 1 with contours marked (proposed Phase 2 to the south not included)

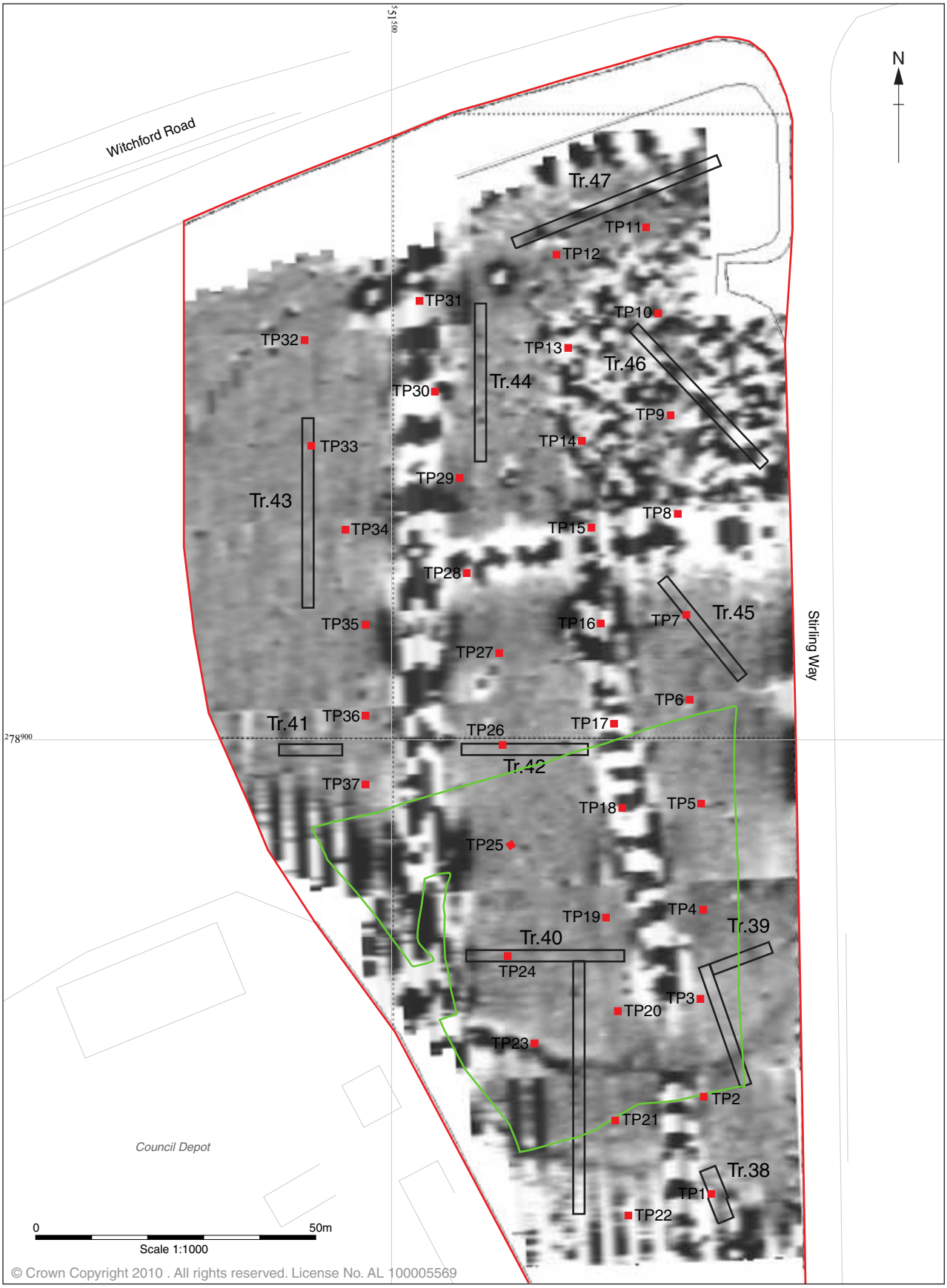
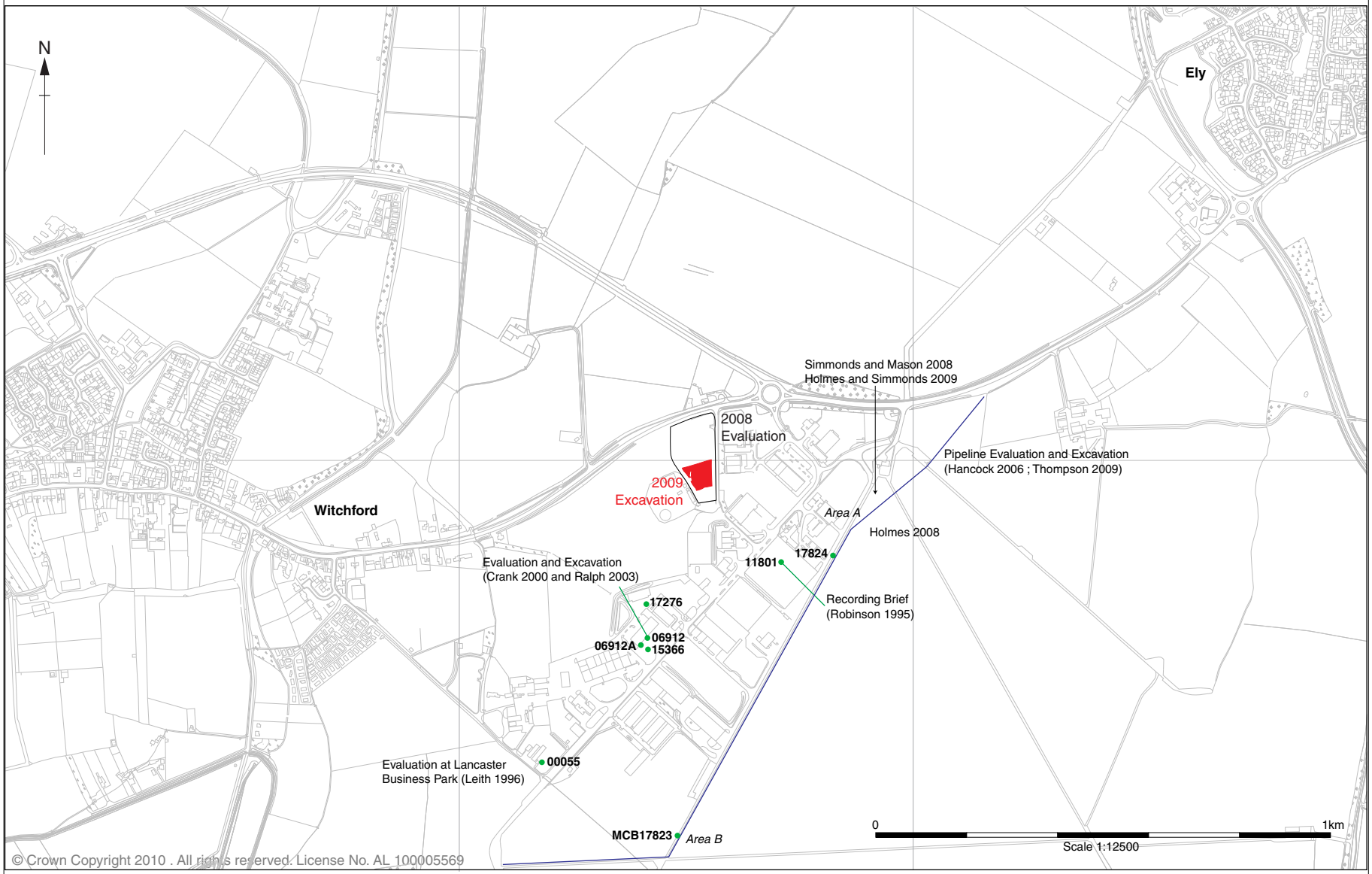


Figure 3: Location of 2008 evaluation with test pits (red), trenches (outlined black) and 2009 excavation (outlined green) overlaying geophysical results within the development area



© Crown Copyright 2010 . All rights reserved. License No. AL 100005569

Figure 4: Site location in relation other archaeological work

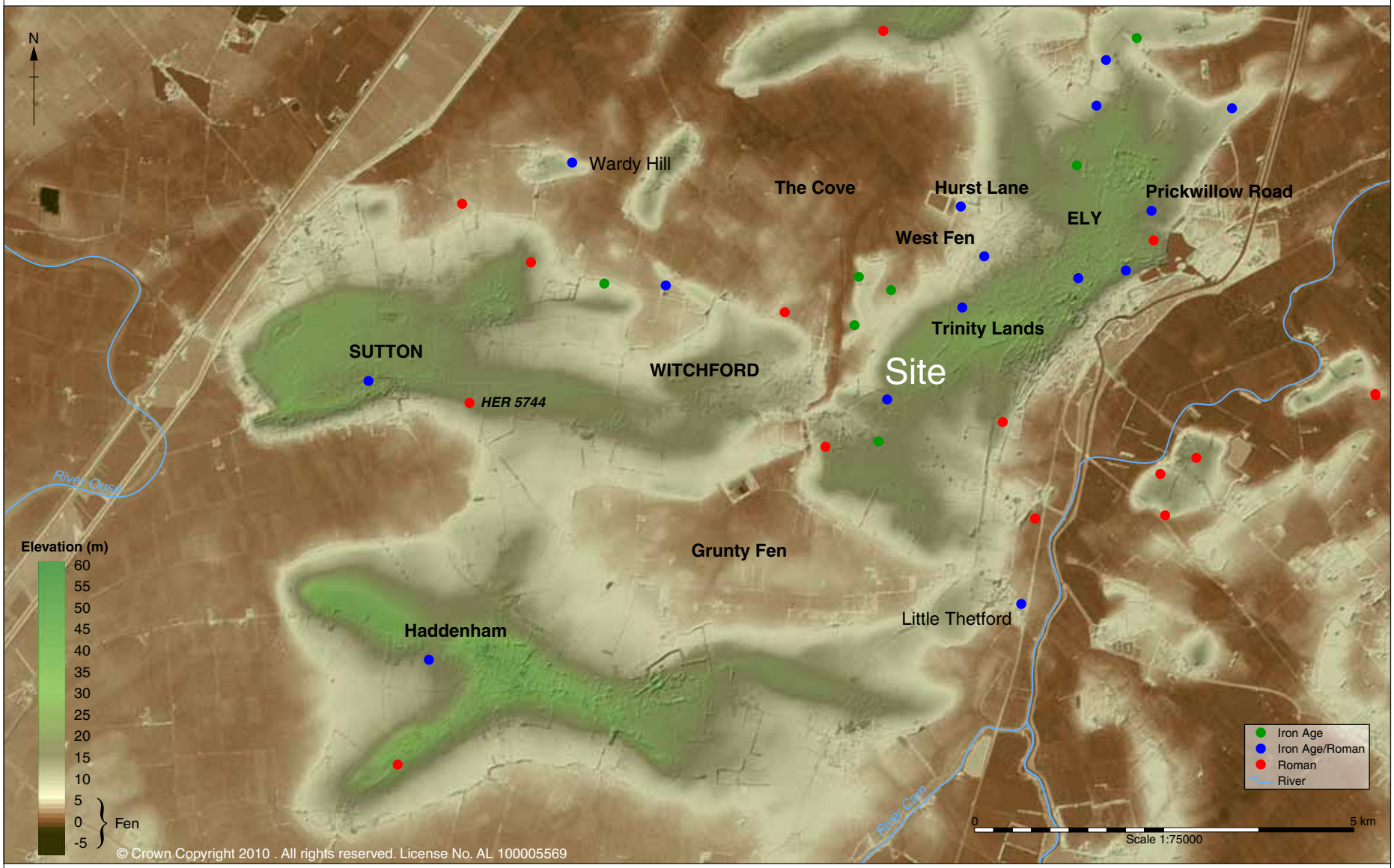


Figure 5: Surface model. The site with fens and surrounding archaeology, after Hall 1996 fig.18 Evans 2003 fig.142, Atkins and Mudd 2003 fig.28, Evans et al 2007 fig.1 and further additions

© Oxford Archaeology East

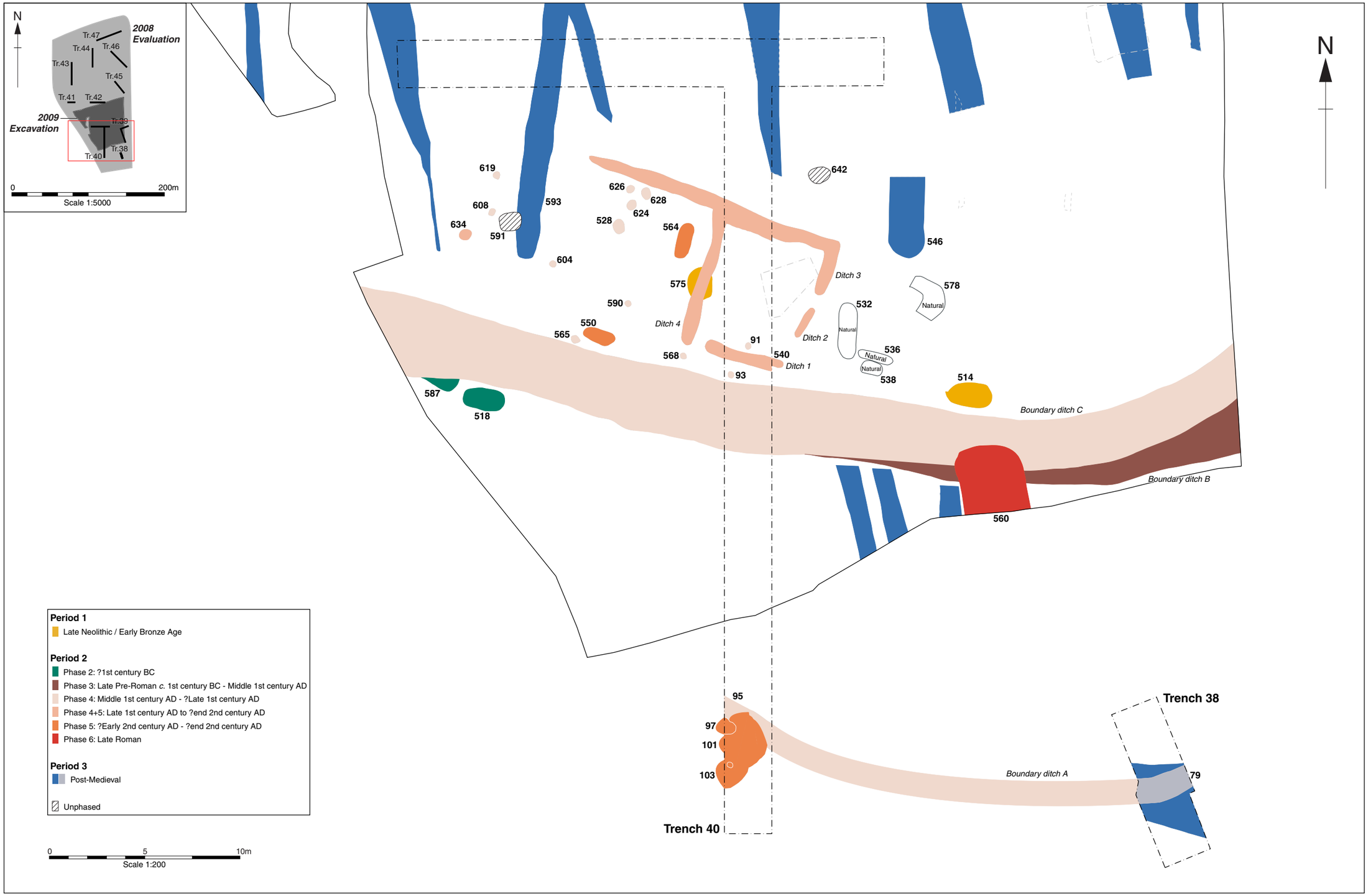


Figure 6: All features phased plan of excavation area and land immediately to the south including evaluation trenches

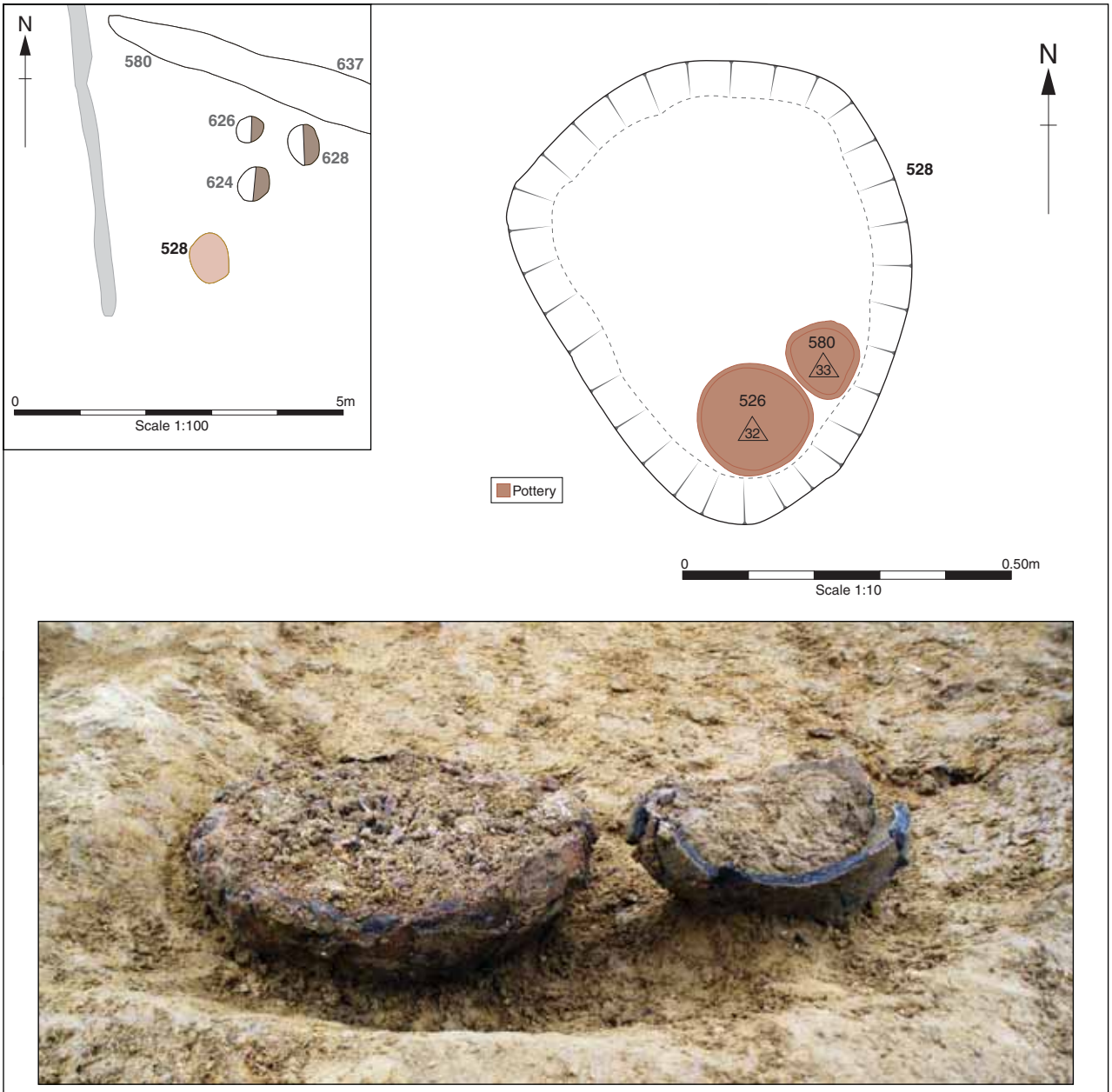


Plate 1

Figure 7: Plan of cremation 528. Plate 1: Cremation 528 looking west

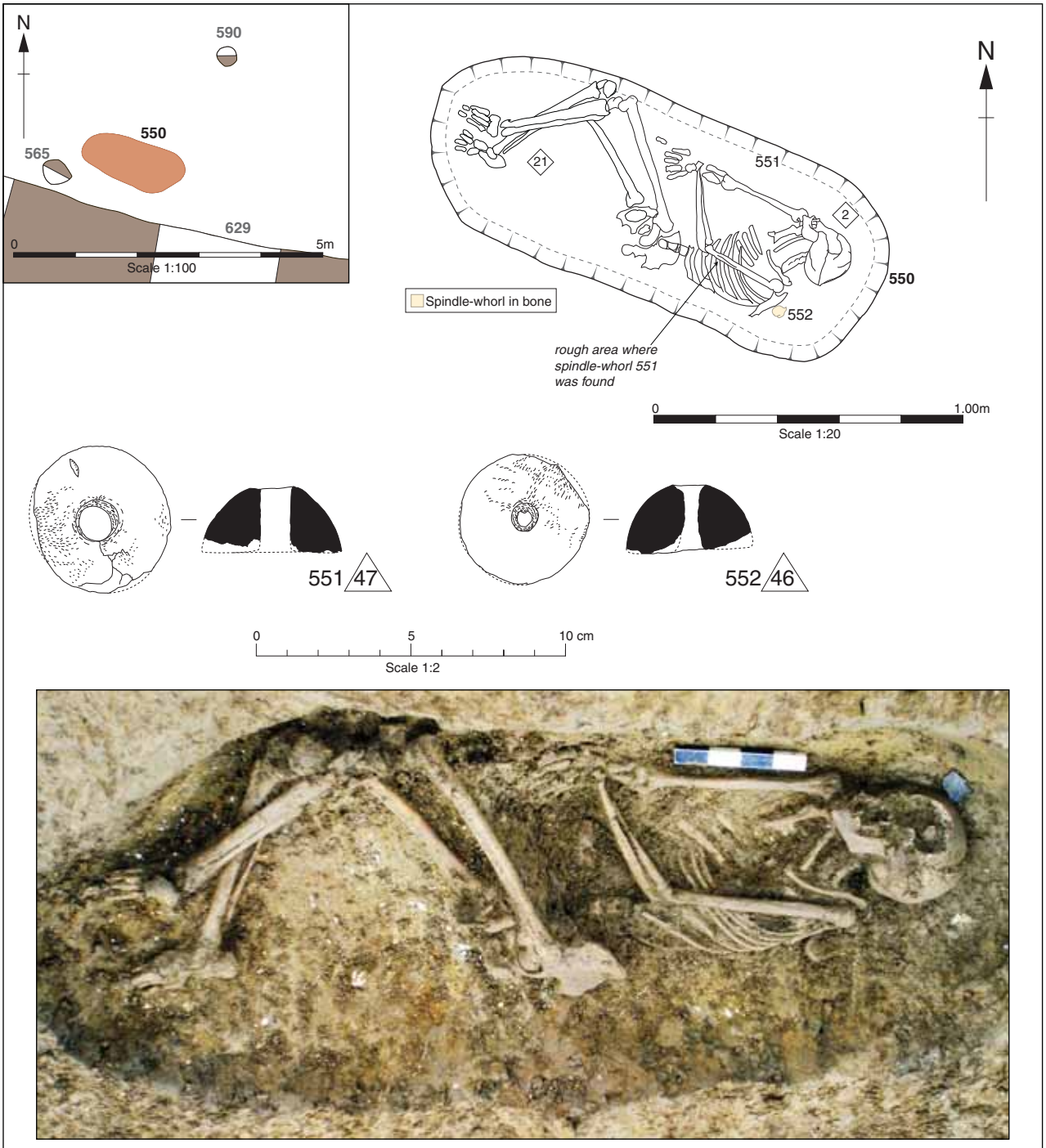


Plate 2

Figure 8: Plan of burial 550. Plate 2: Skeleton 551 from the south. Note Spindle-whorl behind shoulder

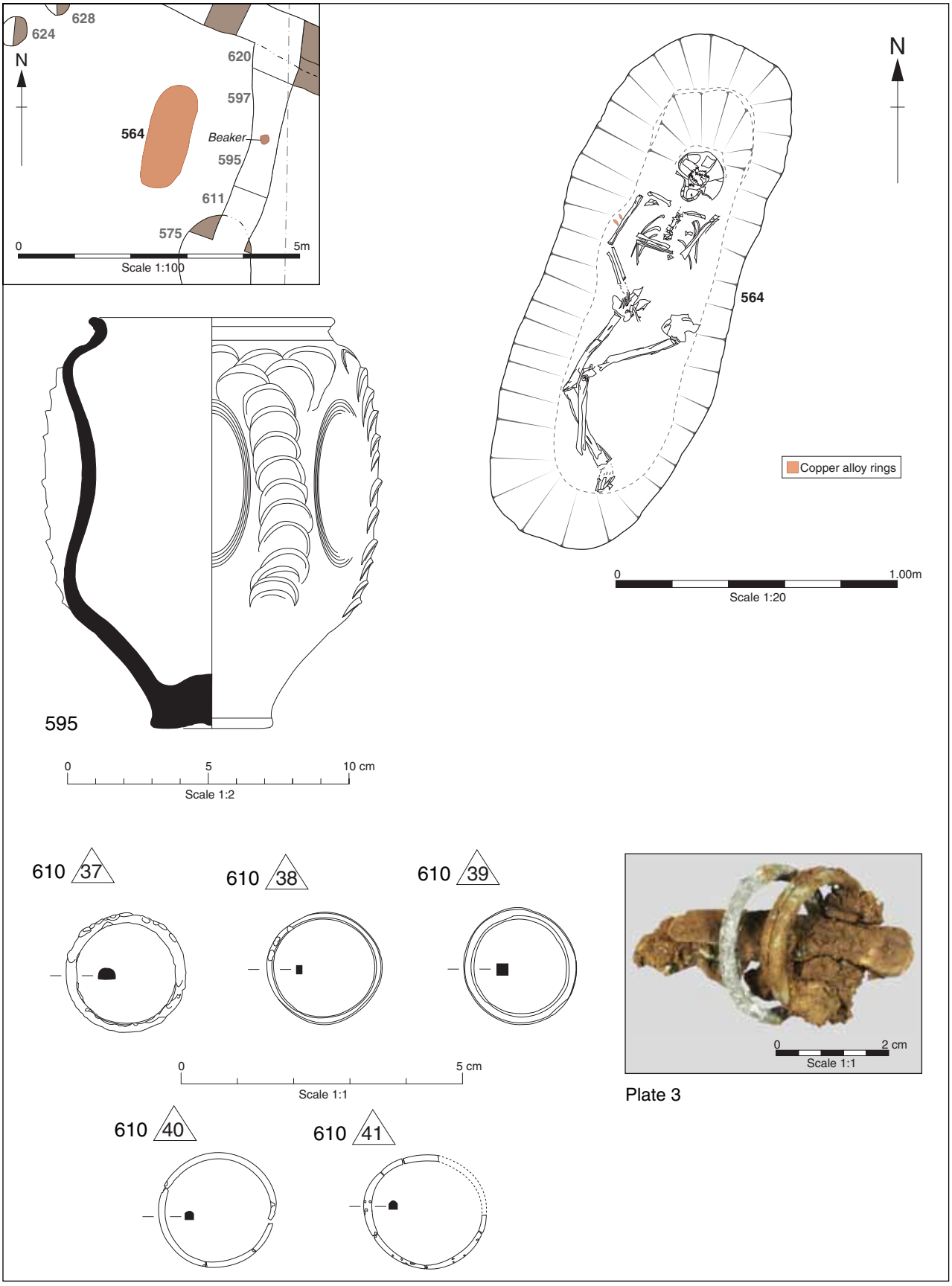


Plate 3

Figure 9: Plan of burial 564. Plate 3: Three rings still attached around finger. 5 copper alloy rings and Nene Valley beaker

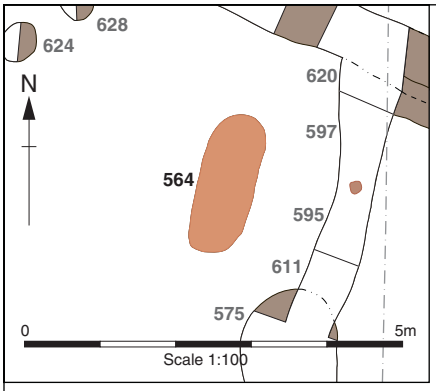


Plate 4

Plate 5

Figure 10: Plate 4: Burial 564 from south. Plate 5: Rings on the fingers of burial 564 looking west

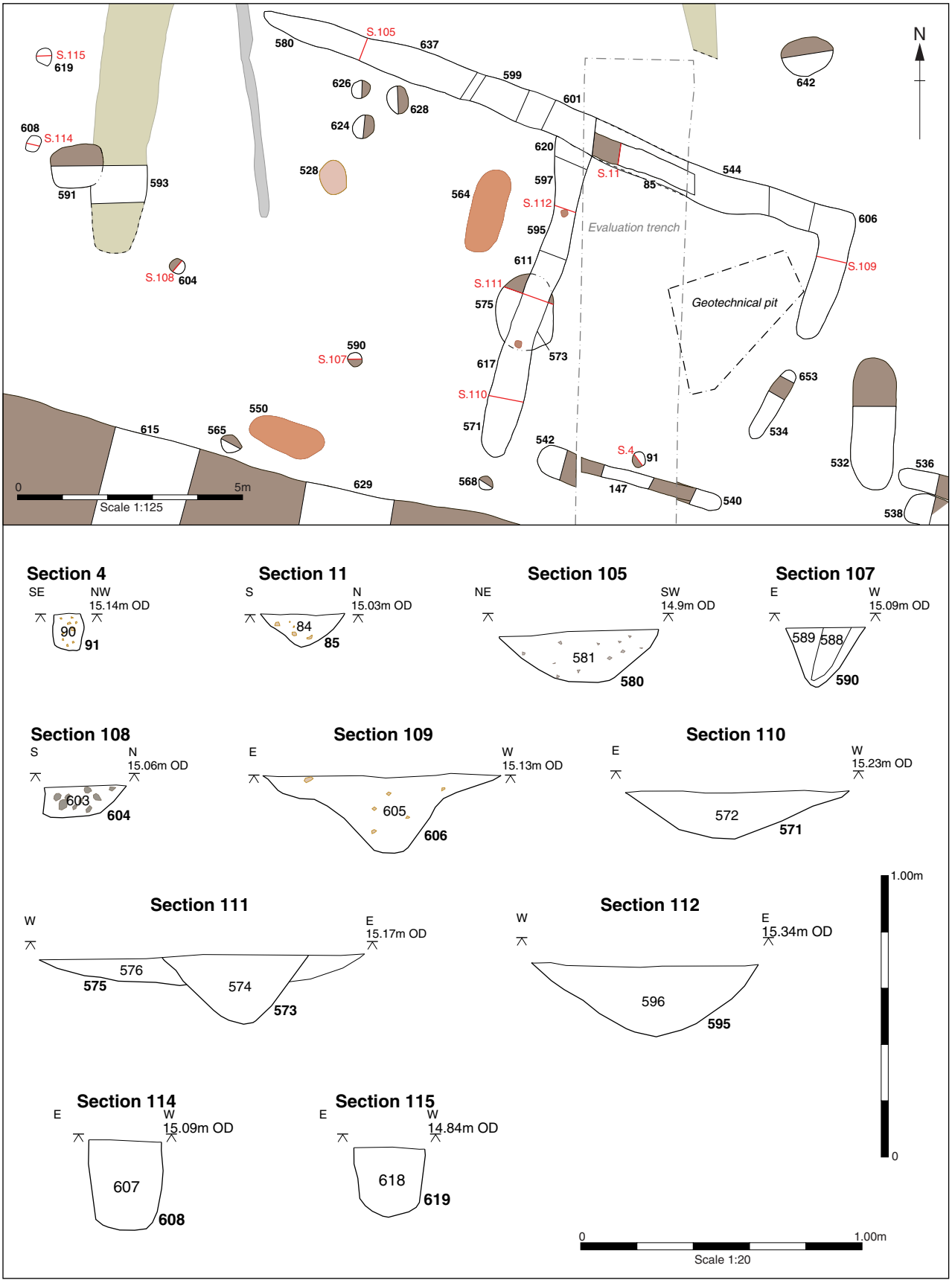


Figure 11: Sections across enclosure ditches surrounding burials in western area possible eastern structure with selected post holes drawn

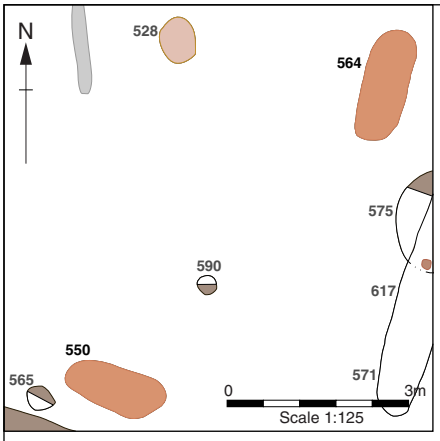


Plate 6

Plate 7

Figure 12: Plate 6: Western half of enclosure looking south. Plate 7: Western half of enclosure looking north

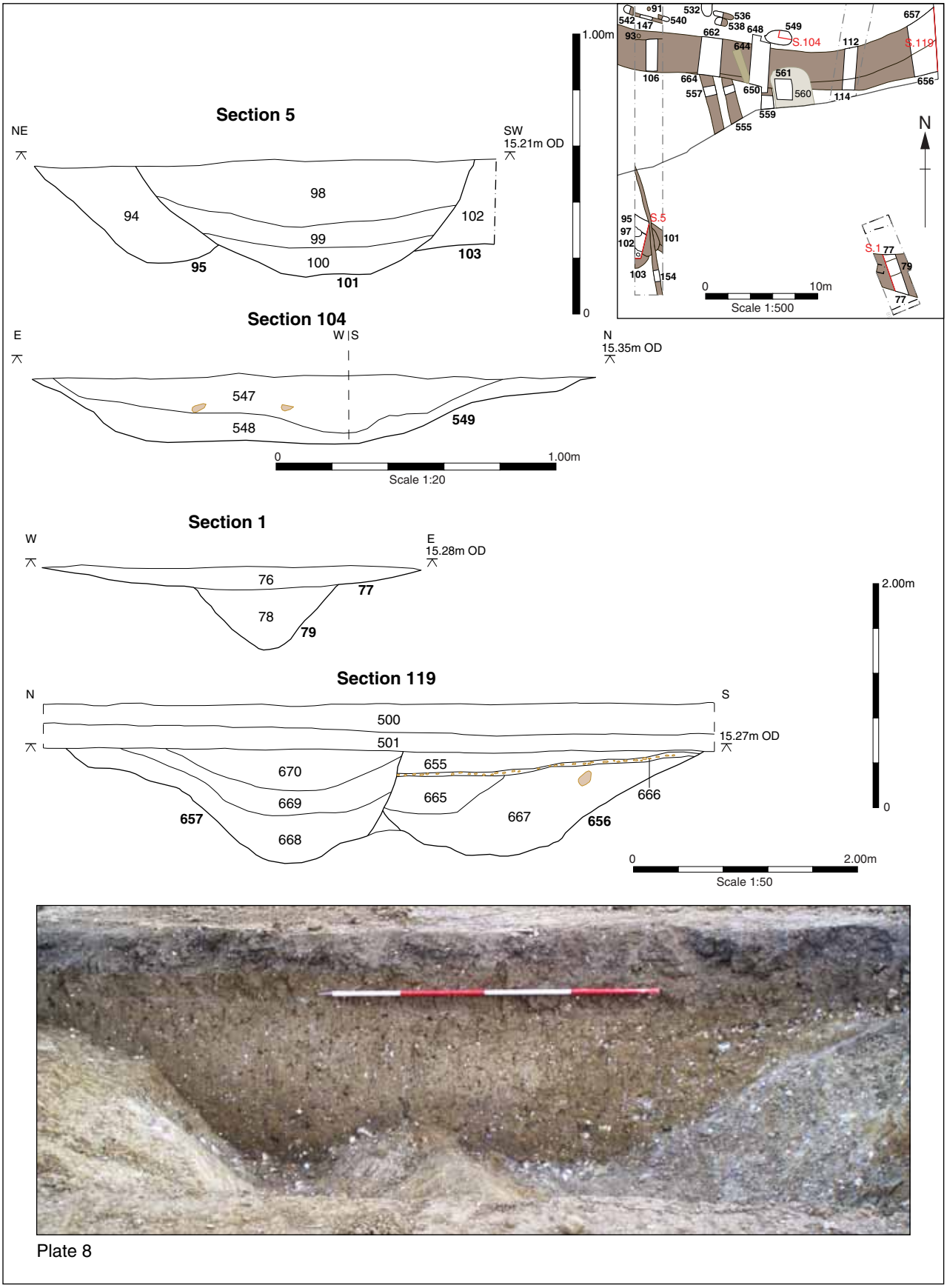


Plate 8

Figure 13: Plate 8: Large Iron Age and Early Roman ditch looking east. Various sections

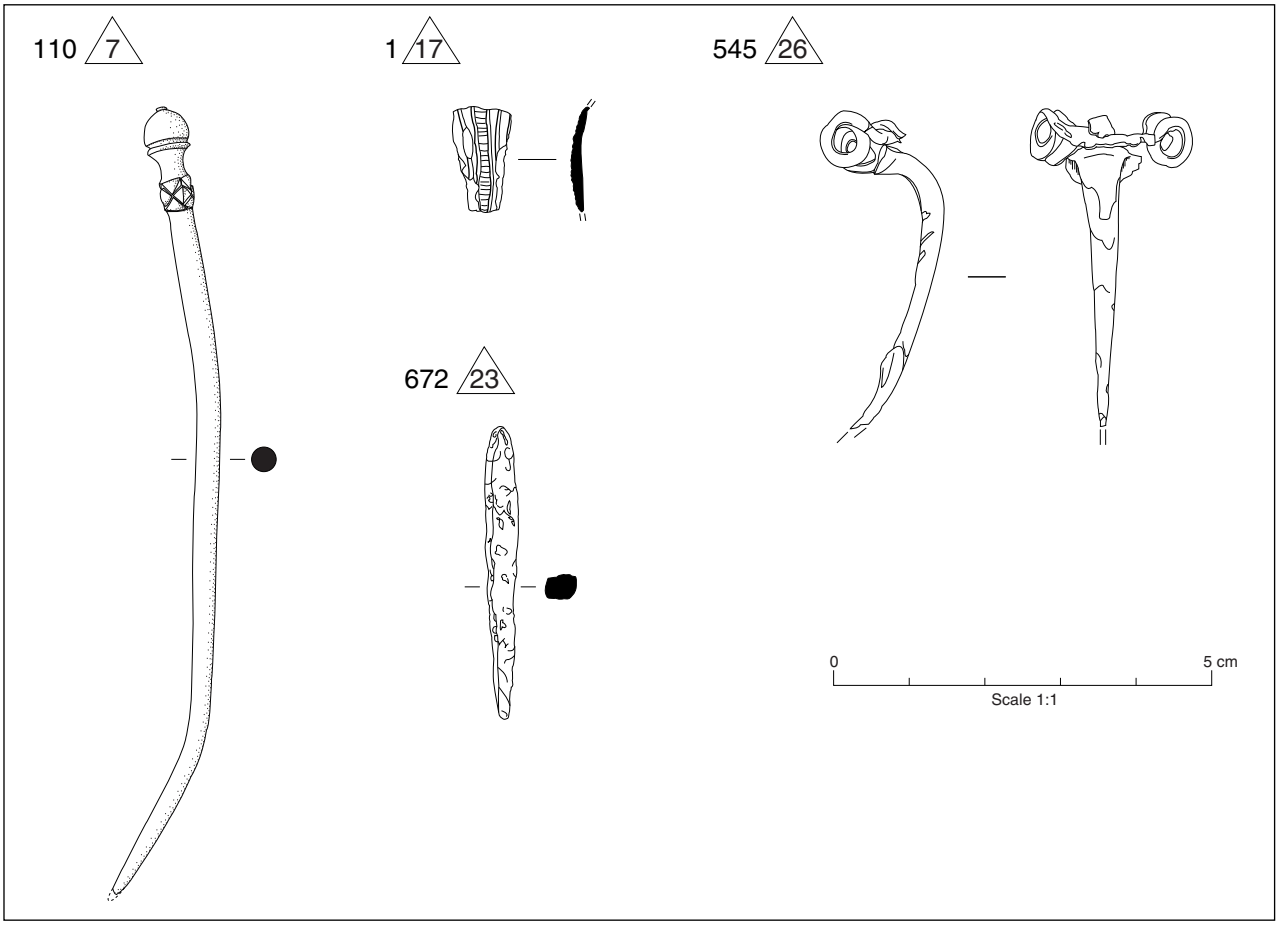


Figure 14: Copper alloy objects

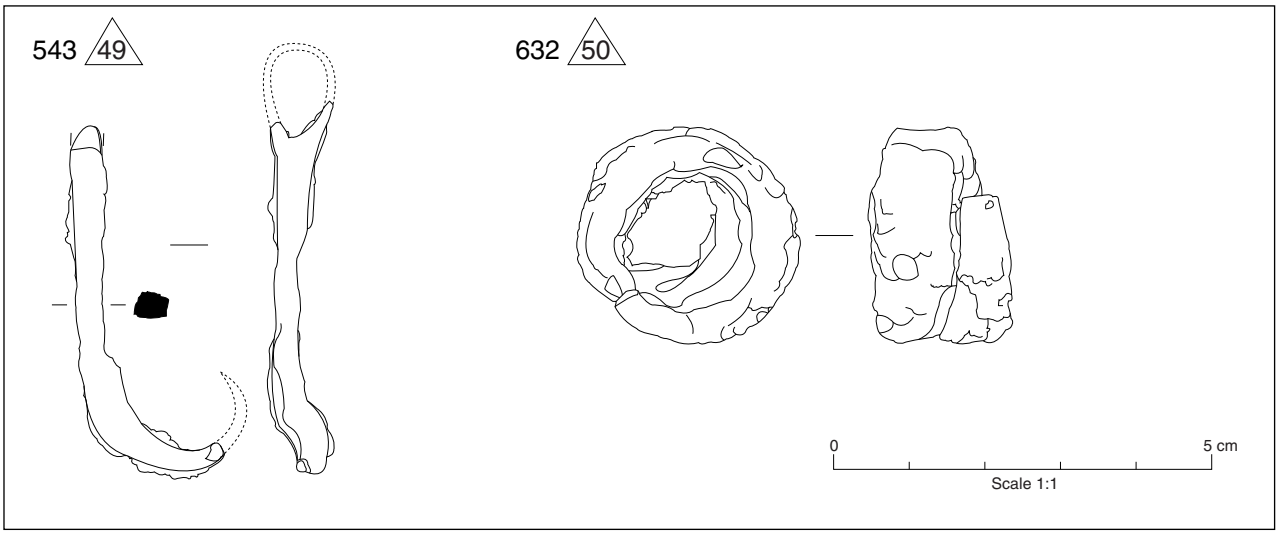


Figure 15: Iron objects

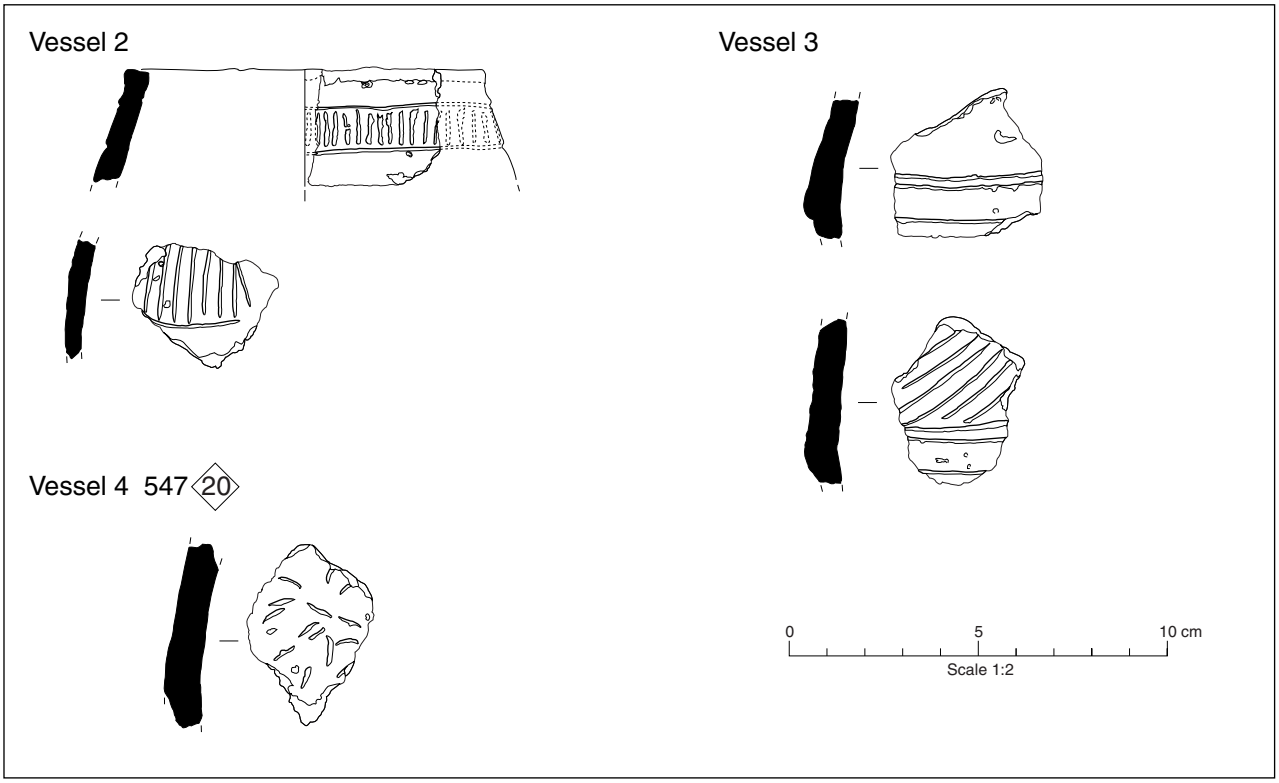


Figure 16: Bronze Age Beaker pottery from pit **549**

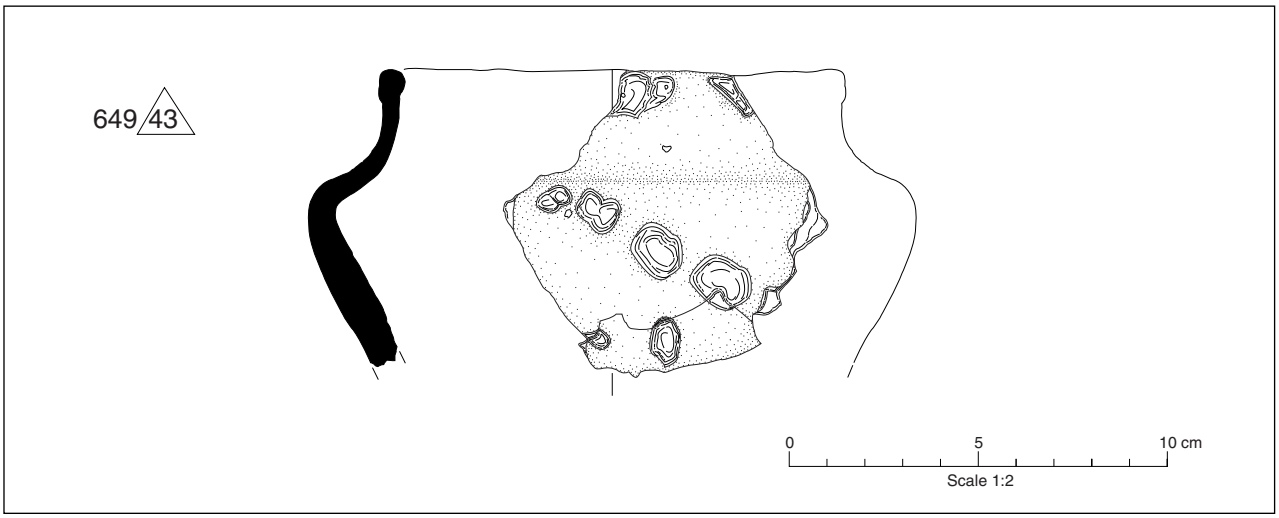


Figure 17: Iron Age pottery from boundary ditch B

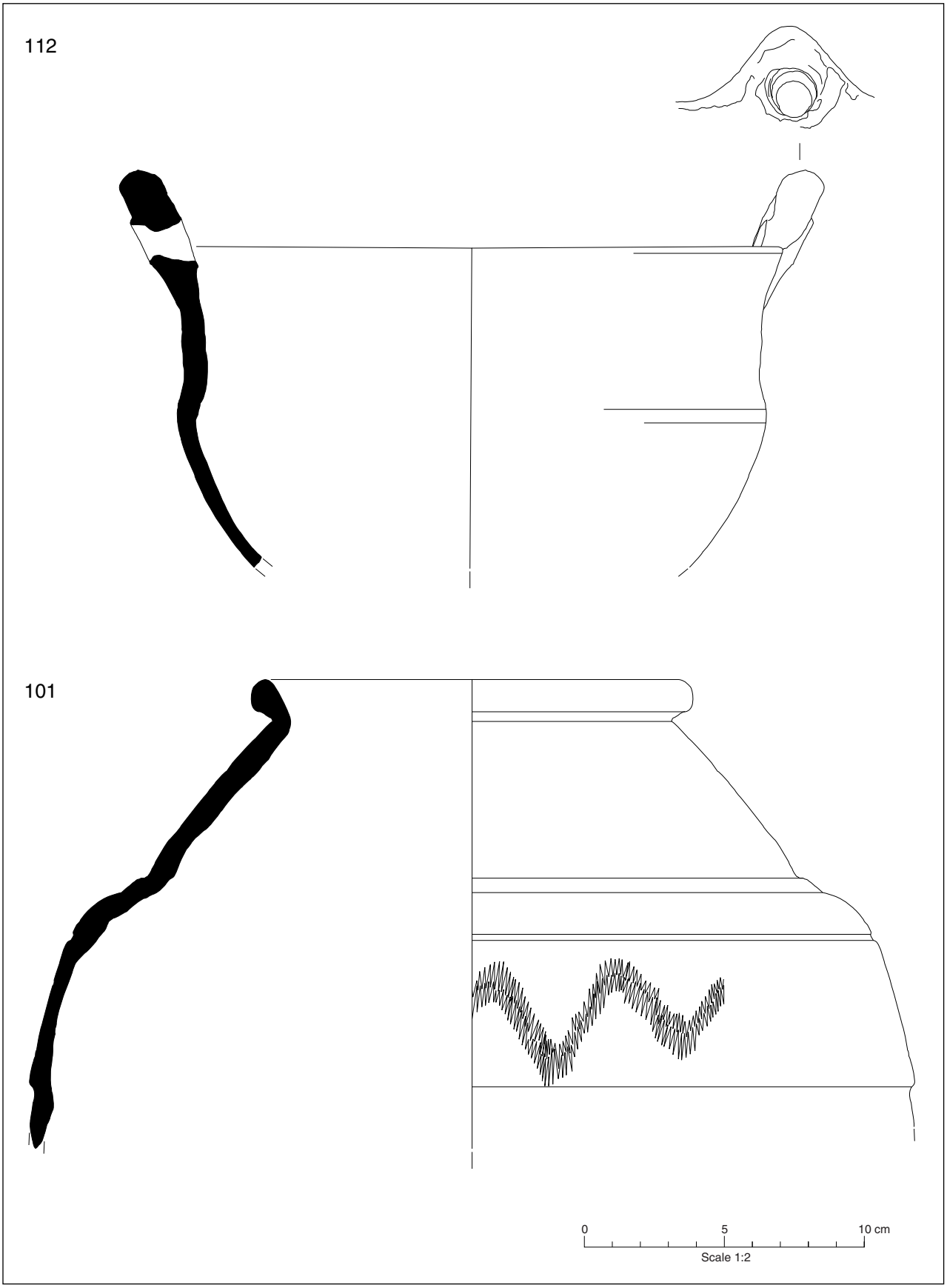


Figure 18: Romano-British pottery from boundary ditch C and pit **101**

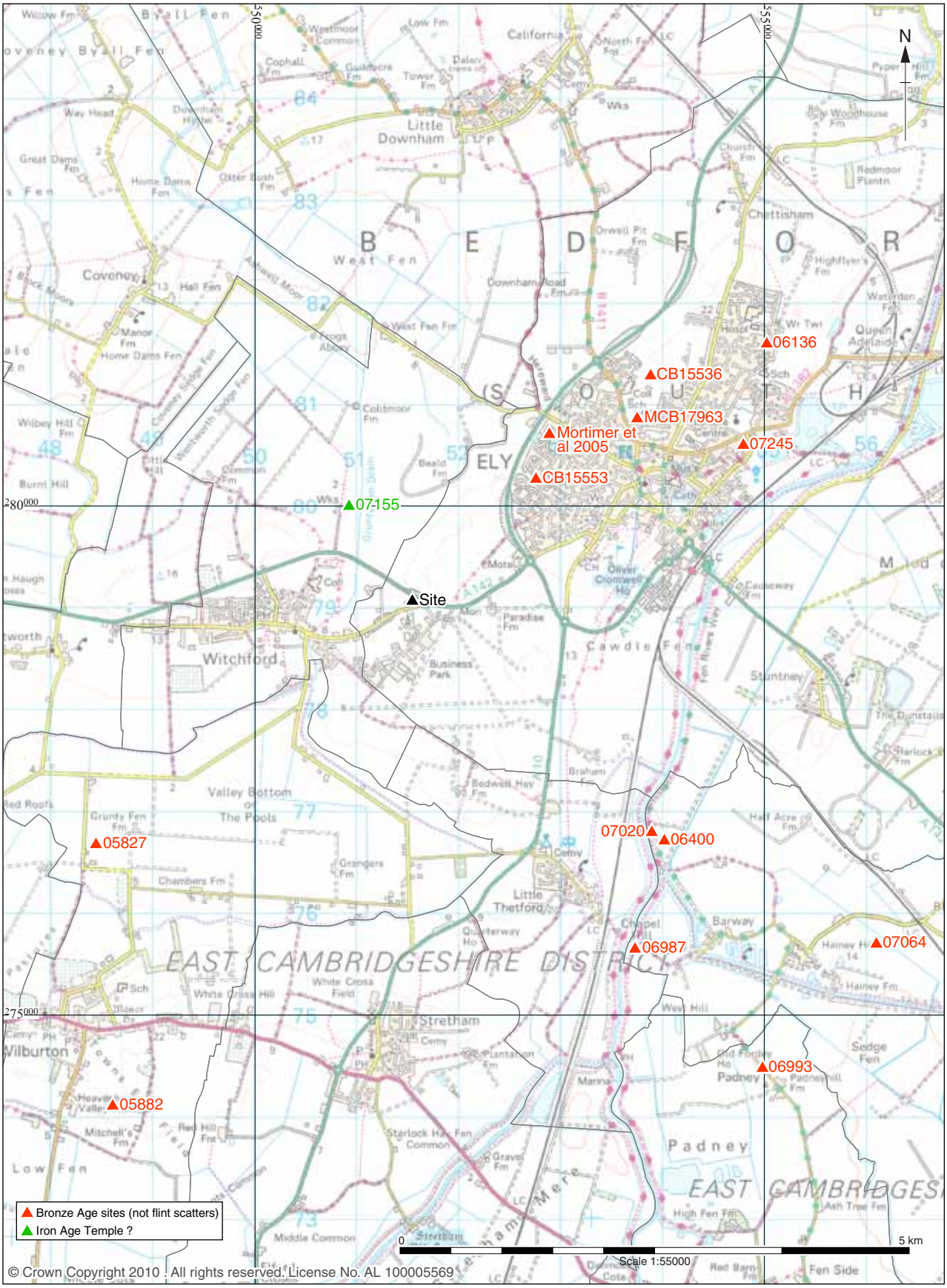


Figure 19: HER data showing Bronze Age sites (not flint scatters) and possible Iron Age temple

Plate 9

Figure 20: Plate 10: Excavation looking north

OA East
15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
f: +44 (0) 1223 850599
e: oaeast@thehumanjourney.net
w: http://thehumanjourney.net

OA North
Mill 3
Moor Lane Mills
Moor Lane
Lancaster LA1 1GF

t: +44 (0) 1524 541000
f: +44 (0) 1524 848606
e: oanorth@thehumanjourney.net
w: http://thehumanjourney.net

OA South
Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263800
f: +44 (0) 1865 793496
e: info@oxfordarch.co.uk
w: http://thehumanjourney.net

OA Grand Ouest
7 Rue des Monderaines
ZI - Ouest
14650 Carpiquet
France

t: +33 (0) 2 49 88 01 01
f: +33 (0) 2 49 88 01 02
e: info@oago.fr
w: http://oago.fr

OA Méditerranée
115 Rue Merlot
ZAC La Louvade
34130 Mauguio
France

t: +33 (0) 4.67.57.86.92
f: +33 (0) 4.67.42.65.93
e: oamed@thehumanjourney.net
w: http://oamed.fr/

Director: David Jennings, BA MIFA FSA

The Oxford Archaeological Unit Ltd is a Private Limited Company, No: 1618597 and a Registered Charity, No: 285627 Head Office: Janus House, Osney Mead, Oxford, OX2 0ES, t: +44 (0) 1865 263 800