Bronze Age – Roman remains at Cambridge Biomedical Campus: The Circus and Piazza & Papworth Trust Sites

Post-Excavation Assessment and Updated Project Design

oxfordarchaeology east

April 2015

Client: Cambridge Medipark Ltd & Papworth NHS Trust

OA East Report No: 1726

OASIS No: oxfordar3-205406

NGR: TL 46130 54914

COUNTRYSIDE Places People Love

LIBERTY PROPERTY TRUST

Papworth Hospital NHS Foundation Trust

Post-Excavation Assessment

Bronze Age – Roman remains at Cambridge Biomedical Campus: The Circus and Piazza & Papworth Trust Sites

Post-excavation Assessment and Updated Project Design

By Tom Phillips BA ACIfA

With contributions by Chris Faine MA MSc, Carole Fletcher BA MCIfA, Rachel Fosberry HNC (Cert Ed), Christine Howard-Davis BA MCIfA Alice Lyons BA MCIfA, Sarah Percival MA MCIfA, Cynthia Poole, Ruth Shaffrey PhD MCIfA, Zoë Uí Choileáin MA and Stephen Wadeson

Editor: Richard Mortimer MCIfA

Illustrator: Charlotte Davies MPhil

Report Date: April 2015

Report Number:	1726
Site Name:	Cambridge Biomedical Campus – The Circus and Piazza & Papworth Trust Sites
HER Event No:	ECB 4376
Date of Works:	April – August 2014
Client Name:	Cambridge Medipark Ltd & Papworth NHS Trust
Client Ref:	n/a
Planning Ref:	n/a
Grid Ref:	TL 46130 54914
Site Code:	CAMCBC 13
Finance Code:	CAMCBC 13
Receiving Body:	CCC Stores, Deepstore
Accession No:	
Prepared by:	Tom Phillips
Position:	Project Officer
Date:	March 2015
Checked by:	Richard Mortimer
Position:	Project Manager
Date:	March 2015
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 therefrom. 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

Table of Contents

List of Figures

List of Plates

Summary

Oxford Archaeology East (OA East) conducted an open area excavation on 3.6 hectares of land to the west of Addenbrooke's Hospital in Cambridge. The work was commissioned by Aecom on behalf of Cambridge Medipark Ltd & Papworth NHS Trust, as part of the Cambridge Biomedical Campus development. The excavation area accounted for two separate sites within the Biomedical Campus; the Circus and Piazza area in the north, which covered 0.7 ha, and an area to be developed by Papworth NHS Trust, which covered 2.8 ha in the south. The remaining 0.1 ha comprised a haul road and compound area to the south. The excavation area was also divided physically by a cycle way/footpath and open drain, both of which extended east to west through the Circus and Piazza area.

*The excavation revealed evidence of Middle Bronze Age land use in the form of a large ditch (**334**), which extended across the whole of the main area. The ditch curved gradually as it crossed the site, closely following the contour which divided the higher ground to the south-west from the lower ground to the north and east. Other Bronze Age features included several shallower boundary ditches, which radiated away from ditch **334**, and four large waterholes. Two of the waterholes returned radiocarbon dates of 1500 – 1319 cal. BC and 1374 – 1121 cal. BC.*

*A surprising discovery was an area of metalled surface in the south of the site. The metalled surface was very fragmentary, surviving as discrete patches over a wide area. The largest individual area measured 40m x 25m and survived because it sat in a slight natural hollow. In the same area the metalled surface could clearly be seen extending over the top of the large Bronze Age ditch (**334**), when it had mostly silted up. It was equally as clear that the surface was truncated by an Early Roman ditch, providing a possible Iron Age date for the metalling. When viewed overall the surface extends east-south-east to west-north-west and must represent an attempt to aid access across the lower, wetter ground. There were no further Iron Age features or deposits on the site*

*The Early Roman activity formed the majority of the archaeology on site. It comprised an area of intensive rectilinear field system, formed by mainly small ditched plots. In the west of the site, a large area of cultivation beds had also been constructed. There was no evidence for domestic areas, probably because this parcel of land was too wet, maybe for several months of the year. Significantly, for approximately 80m the principal Early Roman boundary (**194**) followed the same course as the large Bronze Age ditch (**334**). A curious set of features were five sub-square or sub-rectangular features on the higher ground to the south-west. They were interpreted as structures, possibly a form of temporary agricultural building for processing crops. Craft activity was represented by a small sub-rectangular enclosure in the east of the site, which appeared to be associated with metalworking. Approximately 2.5kg of slag was recovered from the shallow enclosing ditch.*

*The post-medieval evidence comprised a series of drainage/boundary ditches, re-cut repeatedly in the lowest part of the site. Significantly, they were again closely related to Bronze Age ditch **334** and Early Roman ditch **194**. There were also furrows on the site, which appeared to truncate some of the post-medieval ditches. These furrows were also post-medieval and were situated away from the lowest parts of site.*

1 INTRODUCTION

1.1 Project Background

1.1.1 OA East conducted an open area excavation on 3.6 hectares of land to the west of Addenbrooke's Hospital in Cambridge (Fig. 1; TL 46130 54914). The work was commissioned by Aecom on behalf of Cambridge Medipark Ltd & Papworth Hospital Trust, as part of the Cambridge Biomedical Campus (hereafter CBC) development. The excavation area accounted for two separate sites within the Biomedical Campus; the Circus and Piazza area in the north, which covered 0.7 ha, and an area to be developed by Papworth NHS Trust, which covered 2.8 ha in the south. The remaining 0.1 ha comprised a haul road and compound area to the south. The excavation followed a desk-top study (Evans 2002) and evaluation of the area (Evans and Mackay 2005), which also incorporated fieldwalking. The site is located to the south of Cambridge, with the village of Trumpington c. 2km to the west. It is bordered to the east by Addenbrooke's hospital and to the west by Francis Crick Avenue. A further two sites within the CBC, AstraZeneca north and south (hereafter AZ north and south), lie to the north and west of the subject site.

1.1.2 This assessment has been conducted in accordance with the principles identified in English Heritage's guidance documents *Management of Research Projects in the Historic Environment,* specifically *The MoRPHE Project Manager's Guide* (2006) and *PPN3 Archaeological Excavation* (2008).

1.2 Geology and Topography

1.2.1 According to the British Geological Society the bedrock on the site is West Melbury Marly Chalk Formation with no superficial deposits capping it. However, excavations revealed that the chalk was capped with an orangey or yellowish brown sandy silt across the site, which in places was also quite clayey. The water table varied dramatically. After prolonged periods of rain the water table would rise rapidly and the silty geology became saturated, making excavation very difficult. After several days of dry weather it would drop again.

1.2.2 The topography of the site varied subtly but significantly (Fig. 5). The central portion of the site was lowest at *c*. 13.4 – 13.6m OD. This central portion was orientated roughly north-west to south-east with much of the archaeology corresponding to this. In the south-west corner the height increased to *c*. 14.6m OD. There was also a hint that the land was rising in the north-east corner, to *c*. 14.1m OD.

1.3 Archaeological and Historical Background

1.3.1 Two desk-based assessments relating to the site and its wider environment have been written previously (Evans 2002; Webley 2004). An in-depth study of relevant archaeological sites, both local and regional, will be carried out during the analysis stage, as will a documentary and cartographic search. At this stage, a brief chronological overview has been included, which includes record numbers from the Cambridgeshire Historic Environment Record (hereafter CHER). Those sites mentioned are shown in Fig. 2.

1.3.2 The landscape of the Clay Farm / Hobson's Brook / Addenbrooke's area has been intensively investigated over the past decade as both Cambridge and Addenbrooke's Hospital expand (Fig. 3). The largest interventions thus far have been those on the Clay Farm development (CHER ECB 3686; Phillips and Mortimer 2012), 800m to the west of the CBC where *c*. 17 hectares of principally Bronze Age to Romano-British archaeology

have been excavated, and the 3ha Addenbrooke's Hutchison site, directly to the north (CHER CB15770; Evans *et al*. 2008). OA East have conducted excavations along the Addenbrooke's Perimeter Rd (CHER ECB3959; Phillips 2013) and the Rising Main Sewer (CHER ECB 3899; Newman & Phillips 2012), both to the south of the site. The Bell Language School land, immediately to the east of the CBC development, was excavated by OA East at the same time as the subject site (CHER ECB3736; Bush 2015). The CBC area has been subjected to a trench evaluation (Evans and Mackay 2005).

Earlier prehistory – Mesolithic and Neolithic

1.3.3 The combined results of the excavations and evaluations in the area have so far shown that while land use was extensive through the Mesolithic and Neolithic periods, and in parts relatively intensive, most of the evidence consists of background scatters of struck flints found within topsoil and the fills of later features. Feature-related archaeology is rare with approximately ten pits and tree throws excavated along the Addenbrooke's Access Road Site 3 (CHER MCB17815; Timberlake 2007), just two Early Neolithic pits recorded at Clay Farm and a further two small pits at the Hutchison site. Within the proposed excavation areas the evaluation produced a small assemblage of struck flint, dating from the Mesolithic and Neolithic periods. No definite Neolithic features were identified. However, underlying both principal Middle Bronze Age (MBA) settlement areas at Clay Farm are scatters of earlier features, flintwork and pottery – in the north dating as far back as the Later Mesolithic (*c*. 6000 BC) - and there are indications here, as elsewhere, that sites chosen for permanent occupation in the MBA were in use throughout the preceding millennia.

1.3.4 The most tangible evidence of monument building along the Cam Valley is at Trumpington Meadows, 2.1km to the west-south-west, where the remains of two rare Neolithic circular funerary monuments were discovered (CHER MCB17986; Patten 2012). The larger of the two began with a curvilinear ditch, probably dug as a quarry for a small mound. Close by was a grave containing the remains of four individuals. This group of features had been enclosed by a substantial circular ditch, in which were found sherds of Mildenhall and Peterborough ware pottery. There is also a causewayed enclosure 3km to the south-east at Little Trees Hill, close to Wandlebury Iron Age hillfort (CHER 05115).

Bronze Age

1.3.5 At present the Early Bronze Age occupation pattern of the area is seen as a continuation of that seen in the Neolithic rather than specifically as a direct precursor to that which follows. At Clay Farm three Beaker pits and one Collared Urn pit were recorded; none were found within the evaluation phase at the CBC.

1.3.6 The first major, visible change to the landscape came in the Middle Bronze Age with extensive ditched and banked field and enclosure systems constructed across much of the area. The pattern of strip field and enclosure construction is seen very clearly on the Clay Farm excavations, and an extensive radiocarbon dating programme puts the inception of the system at c.1550-1500 BC. Associated with the Clay Farm enclosures were two discrete areas of Middle Bronze Age settlement, comprising chiefly post-built structures and assemblages of dumped settlement-related waste or middening (ceramics, animal bone, struck and worked flint, worked bone tools, metalwork, querns, loom weights, agricultural waste etc.). There is now a well established chronology for the field systems, enclosures and settlement at Clay Farm, based partly on finds

evidence but mainly on radiocarbon determinations – 30 MBA dates have been obtained.

1.3.7 The principal MBA feature(s) near by is an enclosure system that lies directly to the west of the current site, on the western side of Francis Crick Avenue. The multi-ditched enclosure or series of enclosures also continues to the west of the railway line. The enclosure was thought to be Iron Age following the evaluation stage (CHER MCB17915), but subsequent radiocarbon dating showed it to be Middle Bronze Age in date. The eastern half of the enclosure system has recently been excavated, within the AZ south area (E. Beadsmoore, pers. comm.). The size, layout and orientation is very similar to the two main areas of contemporary enclosure at Clay Farm, which were located in the north and south of the site. The enclosures at Clay Farm sit on the western edge of the shallow Hobson's Brook valley, at around 15 – 13m OD. The CBC enclosure sits on the eastern edge of the valley on a slight peninsula at approximately the same level. The three enclosures are all *c*. 900m apart

1.3.8 At the Bell Language School, 0.5km to the east, a series of early boundaries may be part of the wider system of Middle Bronze Age land division (CHER ECB3736; Bush 2015). Directly to the north-west of the current site a Middle Bronze Age enclosure was excavated at the Laboratory for Molecular Biology (CHER MCB19863; Collins 2009). The enclosure was attributed a Roman date but given its similarity in shape, size and fill sequence to those uncovered at Clay Farm, combined with the finds evidence (predominantly Middle Bronze Age Deverel-Rimbury pottery with a few earlier sherds, large quantities of animal bone, burnt flint, burnt stones and a fragment of a Middle Bronze Age palstave axe) a Middle Bronze Age date is more likely. At Babraham Road Park and Ride, two aligned Middle Bronze Age ditches, interrupted by a 5m entrance, were identified. The ditches yielded a radiocarbon date of 1755 – 1415 cal. BC (CHER MCB15253; Hinman 1999).

1.3.9 Given the extent of the MBA field systems, enclosures and settlement at Clay Farm, there was surprisingly sparse evidence of Late Bronze Age activity. This contrasts with the Hutchison site, where there was more tangible evidence for Late Bronze Age activity, including a large ceramic assemblage, and at the Bell Language School, where excavations uncovered three impressive sets of post alignments, covering at least 120m and broadly aligned north-north-east to south-south-west (CHER ECB3736; Bush 2015). The post alignments comprised up to three rows, with an overall total of *c*. 400 postholes.

Iron Age

1.3.10 There is extensive evidence of Iron Age settlement and land use in the locality. Two of the most significant monuments in the immediate area are the Early Iron Age ringworks of Wandlebury (CHER 04636; 3.5km to the south-east) and War Ditches (3km to the east-north-east; Pickstone and Mortimer 2012); the larger contour fort at Borough Hill, Sawston lies 5km due south. At Clay Farm, the relative lack of Late Bronze Age activity is followed in the Early Iron Age by 'unenclosed' settlement south of Long Road (though to an extent utilising the earlier MBA enclosures). In the Middle Iron Age the main foci of activity were the large ditched enclosures on the higher ground in the centre of the site. Inside the enclosures were roundhouse structures and areas of pitting. This part of the site, along with areas to the north and south, also contained Late Iron Age field systems and settlement. At Glebe Farm, directly to the south-west of Clay Farm (CHER MCB16972; Evans *et al*. 2006), a minor Early Iron Age settlement focused around a waterhole was discovered.

1.3.11 At the Hutchison Site Iron Age activity was restricted to the Late Iron Age and Conquest periods, when a rectilinear field system and settlement was constructed. A significant Early-Middle Iron Age site has been excavated, in two parts, at Trumpington Meadows (CHER MCB17986; Patten 2012) and Trumpington Park and Ride (CHER CB15749; Hinman 2004), on the higher ground (>15m OD) to the west of Clay Farm, closer to the current course of the Cam. The two areas held very dense concentrations of Early-Middle Iron Age storage pits containing vast assemblages of domestic waste.

1.3.12 Evaluation of the proposed CBC excavation areas contained no clear Early or Middle Iron Age land-use evidence, although within the Boulevard road corridor (now Francis Crick Avenue) there was a single, potential Middle–Late Iron Age ditch and a Late Iron Age enclosure (CHER ECB03039; Newman *et al*. 2010). At the Bell Language School, an extensive area of metalled surface, forming a wide trackway, has been tenatively dated to the Early Iron Age (CHER ECB3736; Bush 2015).

Roman

1.3.13 Locally, sites of a Roman date are widespread compared with those of other periods. It is now well documented that the gravel terraces of the Cam Valley were heavily exploited by Romano-British communities. Early Roman farmsteads or field systems covered around half of the Clay Farm excavation area, while at the Hutchison Site a rectilinear field system was excavated within which were a series of pottery kilns. A similar kiln was found at Clay Farm. An Early Roman cemetery was also discovered at the Hutchison site and was found to contain sixteen inhumation and three cremation burials. Two high status cremation burials dating to the Conquest period were discovered at Clay Farm, both of which contained imported fineware ceramics, including complete samian, terra nigra and terra rubra vessels, along with associated grave goods. Further fieldsystems were found at the Energy centre, directly to the south of the current site (M. Collins, pers. comm.), and at the Bell language School to the east (CHER ECB3736; Bush 2015). Approximately 1km to the south of the development area a dense concentration of cropmarks can be seen on land to the east of Shelford Road (CHER 04461; Scheduled Monument – SM 4461); these have been interpreted as Roman (possibly a villa) on the basis of the cropmarks and pottery found during fieldwalking. A Late Roman circular 'monument' was discovered at the southern extreme of Clay Farm, also to the east of Shelford Road.

1.3.14 Evaluation of the CBC area uncovered rectilinear field systems, predominantly Early Roman in date, spread across the current site.

Anglo-Saxon

1.3.15 The local landscape has only limited evidence for earlier Anglo-Saxon settlement. On the western side of the valley the closest Anglo-Saxon recorded remains are at Trumpington Meadows, close to the historic core of Trumpington village; the Clay Farm excavations were devoid of features or finds of this period. There has been a greater occurrence, or recovery, of Anglo-Saxon archaeology on the eastern side of the valley. At the Hutchison site two rectangular posthole buildings, a series of large wells and a curvilinear ditch dated to the Middle Saxon period; it is also possible here that many of the features dated as 'Late Roman' are also of later, Saxon origin. Excavation at the Laboratory for Molecular Biology, to the north-west, revealed a series of Early to Middle Anglo Saxon features including a sunken-featured building and two more wells.

1.3.16 No Anglo-Saxon features or finds were found during the evaluation phase at CBC, and it is likely that much of the development area is too low-lying (<15m AOD) for any Saxon evidence to be found.

1.4 Acknowledgements

1.4.1 The authors would like to thank Cambridge Medipark Ltd & Papworth NHS Trust who commissioned and funded the archaeological work, and Annie Calder of Aecom, who acted as the consultant for the site. Andy Thomas of Cambridgeshire County Council monitored the excavation. Site machinery was supplied by Anthill Plant Hire. Nick Richardson of Anthill Plant Hire also carried out metal detecting.

1.4.2 A total of 18 members of staff worked on the excavation, including the author. The Project was managed by Richard Mortimer. Pat Moan was the site supervisor and was also responsible for the GPS survey. The remainder of the field team consisted of Peter Boardman, David Browne, Nicholas Cox, Hannah Cutler, Steve Graham, Andy Greef, Mike Green, Kat Hamilton, Paddy Lambert, William Lusmore, Rebecca Pridmore, Bronagh Quinn, Helen Stocks, Julie Walker, Kimberley Watt and Robin Webb.

2 Project Scope

2.1.1 This assessment deals solely with the excavation of the two areas termed the Circus and Piazza, and the Papworth Trust hospital, as well as the accompanying haul road and compound area. The evaluation of the area will not be included as part of the analysis.

3 Interfaces, Communications and Project Review

3.1.1 Evaluation of the site, which formed part of the 2020 Lands evaluation, was carried out by Cambridge Archaeological Unit (CAU) (Evans and Mackay 2005). Two further areas of the CBC development, to the west and north, have also been excavated by CAU. The intention is for all of the CBC sites to be published together. Communication with CAU is therefore essential.

3.1.2 The Post-Excavation Assessment has been undertaken principally by Tom Phillips (TP) and edited and Quality Assured in-house by Senior Project Manager Richard Mortimer (RM). It will be distributed to the client (Medipark Ltd & Papworth NHS Trust) and their archaeological consultant, Annie Calder (AC; Aecom) for comment and approval. The document will then be distributed to Cambridgeshire Historic Environment Team (Andy Thomas, AT) for approval.

3.1.3 Following approval of the Post-Excavation Assessment, specialist meetings will be arranged to discuss and timetable the analysis stage of the work. Following these meetings a post-excavation analysis and publication timetable will be produced.

3.1.4 Meetings will be arranged at relevant points during the post-excavation analysis with AT and AC.

4 Summary of Results

4.1 Introduction

4.1.1 In terms of the development areas the site was divided into two main areas; the Circus and Piazza in the north (0.7ha) and the Papworth Trust area in the south (2.8ha). Physically, the site was divided by an open drain and a cycleway/ footpath, both of which extended roughly east to west through the Circus and Piazza area (Fig. 1 and 4). Neither of these ways of dividing the site is helpful for discussing the archaeology, therefore the entire site will be discussed as one area.

4.2 Period 1: Neolithic (c. 4000 – 2500 BC)

4.2.1 A small number of struck flints (fewer than 10 pieces), particularly blades and blade-like flakes, of later Mesolithic and early Neolithic date were recovered as residual finds in later features (appendix A.5). The early Neolithic is indicated by the presence of a finely made but slightly asymmetrical leaf-shaped arrowhead, found in Early Roman structure **434**. Probably of similar date to this is a finely made denticulated oval flake that was found in the same structure. No features were dated as Neolithic.

4.3 Period 2: Early Bronze Age (c. 2500 – 1500 BC)

4.3.1 As with the preceding period there were no features of Early Bronze Age date, rather a small number of struck flints were recovered as residual finds in later features (appendix A.5). However, these were all flakes, which could only be broadly dated as Mesolithic – Early Bronze Age (12 pieces). It is worth noting that seven of these flakes came from Early Roman structure **434**.

4.4 Period 3: Middle Bronze Age (c. 1500 – c. 1100 BC)

Summary

4.4.1 The first features on the site date to the Middle Bronze Age (Fig. 6 and Table 1). Principally, a large curvilinear ditch (**334**) extended across the western part of the site. Several narrower boundaries were constructed perpendicular to ditch **334**, both on its north and south side. There were also four large waterholes, three in the north of the site and one in the south. The remaining Middle Bronze Age features comprised a small number of isolated pits, all within the area enclosed by ditch **334**.

Ditches

4.4.2 Ditch **334** entered the site in the north on the south side of the cycleway. It was orientated north-west to south-east in the north and gradually turned to run north to south. Towards the south of the area it turned sharply to run north-north-east to south-south-west. There was a definite correlation between the course of the ditch and the topography, with the ditch appearing to mirror the rise in contour to the west. The ditch also mirrors the shape of the Middle Bronze Age triple-ditched enclosure in the AZ south area, which lies to the west of Francis Crick Avenue. In addition, as the ditch got closer to the slightly higher land in the south of the site, the depth of the feature decreased gradually, until it became almost non-existent at the southern baulk. Between the northern baulk and the metalled surface, ditch **334** measured between 1.8

and 3.3m wide and between 0.8 and 1.2m deep (Fig. 11, section 72 and Plate 1). Between the metalled surface and the southern baulk however, ditch **334** remained large on the surface, measuring between 1.75 and 3m wide, but was much shallower, measuring between 0.15 and 0.61m deep; the shallowest slot being next to the southern baulk. In its deeper sections the ditch had steep sides and a flat or concave base. Where it was shallower, the sides remained steep but the base was consistently flat. Ditch **334** contained up to nine fills although four or five was more typical. The fills were very sterile and mostly comprised redeposited material, which had accumulated gradually. Finds were very rare; in total five small sherds of Late Bronze Age pottery (6g), 438g of animal bone (cattle or large mammal where identifiable) and ten struck flints of later prehistoric date (286g) were recovered from the ditch, mostly from the secondary and tertiary fills. Bulk soil samples collected from ditch **334** were devoid of any environmental remains. A fragment of animal bone from the primary fill was submitted for radiocarbon dating but unfortunately it contained insufficient carbon to produce a date (SUERC laboratory code GU36748).

4.4.3 A series of ditches radiated away from ditch **334** in the north-west of the site, all orientated north-north-east to south-south-west. There were six ditches in total, comprising **196**, **289**, **295**, **429**, **590** and **1019**. The majority were narrow and shallow, measuring between 0.5 and 0.82m wide and between 0.15 and 0.42m deep. The exceptions were ditches **295** and **429**, which were larger, measuring between 0.65 and 1.32m wide and between 0.42 and 0.68m deep, with steep-sided V-shaped profiles. They were also the only two of the smaller ditches to contain finds; ditch **295** contained two pieces of struck flint (125g), dated as later prehistoric, and a moderate assemblage of burnt sandstones in the upper fill of cut **325**. Ditch **429** contained a single sherd of Late Bronze Age pottery (7g) and rare animal bone (17g), all within secondary fills.

Waterholes

4.4.4 There were three waterholes located in the north of the site and one in the south. The three in the north (**180**, **621** and **1033**) appeared to be in a line, aligned west-north-west to east-south-east. Waterhole **180**, located in the north-west corner of the excavation area, was the largest. It was sub-circular in plan, measuring 4.7m wide and 1.92m deep with steep sides and a concave base (Fig. 11, section 32). It contained up to eleven fills, the primary of which were waterlogged. Recovery of pollen from fills 223 and 224 is quite sparse (see appendix B.4). Tree pollen includes single occurrences of hazel-type, alder, lime (*Tilia*) and pine (*Pinus*). Grass pollen is present in both sub-samples but other herbs associated with grassy, open or waste areas are recorded only in context 223. Bulk soil samples from the primary fills contained seeds of wetland plants such as sedges and gypsywort along with low instances of plants which may have been growing nearby such as thistles, buttercup and dock (see B.2.8, appendix B.2). Finds from the waterhole included a moderate assemblage of animal bone (1850g) from the primary and secondary fills (mainly cattle, followed by horse and sheep/goat, as well as unspecified large mammal bones) and 1 sherd of Late Bronze Age pottery (7g) from the tertiary fills. A fragment of waterlogged wood from primary fill (181) was radiocarbon dated to 1500 – 1319 cal. BC (95% confidence; 3152 ± 29; SUERC-58618).

4.4.5 Waterholes **621** and **1033** were smaller features, both of which contained finds. Waterhole **621** contained 20 sherds of Late Bronze Age pottery (66g), a small assemblage of animal bone (228g; single cattle and horse bones) and several later prehistoric struck flints (54g), all from the secondary and tertiary fills. Waterhole **1033** contained animal bone in its secondary fill (554g; cattle or large mammal), while Late Bronze Age pottery (11 sherds, 28g), further animal bone (829g; mainly large mammal

with some identified as cattle and horse) and fourteen struck flints (275g) came from the tertiary fill. The flints were a mixture of flakes and cores of later prehistoric date.

4.4.6 In the south of the site was waterhole **1552**, which was sub-circular in plan, measuring 3.36m wide and 1.82m deep with steep – vertical sides and a concave base (Plate 2). It contained 7 fills, including waterlogged primary fills. Primary fill (1557) contained poorly preserved weed seeds and waterlogged wood (see B.2.8, appendix B.2). A waterlogged seed from this fill was radiocarbon dated to 1374 – 1121 cal. BC (95% confidence; 2992 ± 29; SUERC-58619). Large mammal bones (including two identified as cattle) were recovered from throughout the fills and totalled 673g. Two sherds of Late Bronze Age pottery (7g) were recovered from secondary fill (1555), while a small assemblage of Early Roman pottery (15 sherds, 58g) was recovered from the two uppermost fills.

Pits/ tree throws

4.4.7 A total of six smaller pits and tree throws were dated as Middle Bronze Age. Some included quantities of burnt sandstones, such as pits **362** and **580**, both in the north-west of the site. Pit **362** in particular was packed full of burnt sandstone pebbles and cobbles (over 100) and was close to the section of ditch **295** which contained burnt sandstones. All these features were within the area enclosed by ditch **334**.

4.4.8 In the south of the site was a cluster of three pits and a tree throw (**1428**, **1466**, **1527** and **1487**). Pit **1428** measured 0.97m wide and 0.2m deep. Its single fill contained a large assemblage of burnt flint (3789g), heat affected stones (398g) including one heat cracked quartzite cobble which may have been used as a rubber (see appendix A.5) and a fragment of fired clay (9g). The quantity of burnt flint in pit **1428** and the uniformity and intensity of burning of the stone is more suggestive of purposeful or systematic production, along with its deliberate disposal within the feature (appendix A.5). An adjacent tree throw (**1487**) contained many small sherds of Late Bronze Age pottery (61 sherds, 109g). Pit **1527**, 10m to the south-east, was oval in plan measuring 1.8m long, 1.3m wide and 0.8m deep with steep – vertical sides and a concave base. Its location on the higher contour suggests it could have been a storage pit.

Feature No.	Feature type	Width (m)	Depth (m)	Pottery, sherds / g	Worked flint, No. pieces / g	Burnt flint (g)	Animal bone (g)	Enviro
180	Waterhole	4.7	1.92	1/7			1850	Sparse tree and grass pollen.
196	Ditch	0.7-0.8	0.3-0.42					
289	Ditch	0.5-0.82	0.16-0.18					
295	Ditch	1.05-1.25	0.52-0.68		2 / 125			Single charred chaff frag and rare charcoal
334	Ditch	1.75-3.3	0.15-1.2	5/6	10 / 286		438	
362	Pit	1.65	0.21					Sparse charcoal
429	Ditch	0.65-1.32	0.42-0.65	1/7			17	Single spelt grain, frag. of legume, rare charcoal
580	Pit	1.1	0.15					

Feature No.	Feature type	Width (m)	Depth (m)	Pottery, sherds / g	Worked flint, No. pieces / g	Burnt flint (g)	Animal bone (g)	Enviro
590	Ditch	0.54-0.68	0.15-0.24					
621	Waterhole	2.8	1.2	20/66	5 / 54		228	Sparse charcoal
1019	Ditch	0.7-0.8	0.25-0.36					
1033	Waterhole	3.9	1	11/28	14 / 275		1383	
1428	Pit	0.97	0.2			3789		Sparse charcoal
1466	Pit	1.14	0.15			127		
1487	Tree throw	2.9	0.4	61/109				Single grain
1527	Pit	1.3	0.8					
1552	Waterhole	3.36	1.82	17/65			673	Single charred wheat, occ. weed seeds

Table 1: Middle Bronze Age feature summary

4.5 Iron Age (c. 800 BC – AD 43)

4.5.1 A small concentration of features in the compound and haul road area contained noteworthy quantities of later Iron Age pottery alongside Early Roman wares (Fig. 7); the features themselves have been dated as Early Roman. These included ditches **6** and **15** in the compound, which were curvilinear in plan. Ditch **6** measured between 1.6 and 2.5m wide and between 0.55 and 0.65m deep with steep sides and a concave base. Its single fill contained a small assemblage of later Iron Age pottery (44 sherds, 146g) and animal bone (214g), found in three excavation slots. Amongst its large assemblage of Early Roman wares, ditch **9** (see 4.6.5 below) contained a small number of Late Iron Age slow wheel turned sherds (16 sherds, 137g). Ditches **29** and **40**, located in the south of the haul road, also contained a mixture of later Iron Age and Early Roman pottery.

4.5.2 Residual sherds of later Iron Age pottery were recovered from a small number of Early Roman features in the main excavation area, including structure **535** (2 sherds, 30g), pit **619** (1 sherd, 8g), ditch **869** (15 sherds, 78g) and cultivation beds **172** (2 sherds, 10g), **358** (1 sherd, 4g), **449** (1 sherd, 12g) and **1154** (1 sherd, 3g). This sparse spread covers the entire site area, with no foci or concentrations.

4.5.3 Across the southern half of the site were the remnants of a metalled surface, which survived as discrete patches over a considerably wide area (grouped together as 1063, 1369 and 1450; Fig. 6), and dates, broadly speaking, to the Iron Age. When viewed overall the surface extended east-south-east to west-north-west, measuring up to 40m wide. The largest individual area (comprising 1369 and 1450) measured approximately 40m x 25m overall and survived because it sat in a slight natural hollow, filled by a relict subsoil (1449 and 1352). In this area the surface was intact and extensive, formed of tightly packed pebbles. In the same area the metalled surface could clearly be seen extending over the top of the large Middle Bronze Age ditch (**334**), at a time when the Bronze Age ditch had mostly silted up (Fig. 11, section 347; Plates 3 and 4). Crucially, it was equally as clear that the surface was truncated by an Early Roman ditch (**194**), meaning the surface was constructed when the Middle Bronze Age ditch had already been open long enough for it to naturally infill but clearly before the Early Roman

period. The intervening period is still a considerable length of time. However, the metalled surface probably represents multiple episodes of surfacing over a prolonged period, possibly a trackway or even a series of trackways extending across the lower, wetter areas. If this is the case then its drawn out construction and use must have taken place during the Iron Age.

4.5.4 There were rare finds of pottery and animal bone found impressed on top of the metalled surface and within the relict subsoil. Lying on top of metalled surface (1369) was a single sherd of Early Roman pottery (31g) and animal bone (63g). Within subsoil (1449) was a single sherd of earlier Iron Age pottery (8g), while subsoil (1352) yielded a small assemblage of Early Roman pottery (12 sherds, 26g), animal bone (285g) and a fragment of oyster shell (11g).

4.6 Early Roman (AD 43 – 200)

Summary

4.6.1 The bulk of the archaeology dated to the Early Roman period. A rectilinear field system was constructed in the eastern half of the site, bounded to the west by ditch **194**. The field system comprised many small plots bounded by relatively shallow ditches, which presumably functioned both as plot divisions and as drainage features. There was also a large area of cultivation beds in the west of the site. There was no evidence for domestic areas, probably because the land would have been too wet, at least for several months of the year, although this also must have made it perfect for certain types of cultivation. Evidence for craft activity came in the form of a small enclosure that may have been associated with metalworking. A set of five sub-square or sub-rectangular features on the higher ground in the south-west were interpreted as structures, possibly a form of temporary agricultural building for processing crops.

Ditches

4.6.2 Generally speaking the Early Roman ditches were shallow, despite being relatively wide on the surface (Table 2). However, a few of the main boundaries were larger. Ditch **194** was the main or principal boundary. It extended across the whole site. and was quite sinuous, changing orientation several times. Significantly, for *c*. 80m it cut into, and followed the same course as, Middle Bronze Age ditch **334**. Ditch **194** measured between 0.9 and 3.5m wide and between 0.5 and 0.82m deep with steep sides and a concave base (Fig. 11, section 80). It contained up to six fills with finds coming from all levels. Pottery was relatively rare; only 26 sherds (278g) of predominantly early – mid 2nd century AD pottery were recovered, including four sherds of samian ware. Animal bone totalled 1332g, all the identifiable fragments were cattle. There was also a small amount of CBM (247g) and slag (28g). The basal fills of cut **424** were assessed for pollen but the results were poor (see appendix B.4) with a single grain of grass pollen and a single *sphagnum* moss spore present. Pollen assessment was carried out in this location in an attempt to identify spores which may have been directly associated with the adjacent cultivation beds.

4.6.3 Ditch **785** and its re-cut **780** was another of the larger boundaries. It extended north-north-east to south-south-west in the south-east corner of the site. The original version (**785**) only survived for *c*. 15m at the north end and was truncated to varying degrees. Amongst its fills was a moderate sized assemblage of early – mid 2nd century AD pottery (111 sherds, 1157g), including part of a stamped samian cup with a previously unrecorded Die (see appendix A.3).

4.6.4 Ditch **780** measured between 1.8 and 3.2m wide and between 0.52 and 0.72m deep with moderately steep sides and a concave base. It contained up to four fills and finds were relatively rare; pottery dating no later than the mid 2nd century AD (29 sherds, 139g), animal bone (239g), CBM (141g) and slag (13g) were recovered.

4.6.5 In the haul road strip ditch **9** was substantial and was also notable for its finds assemblage. It was orientated west-north-west to east-south-east, measuring 2.4m wide and 1.1m deep with steep sides and a concave base. The ditch contained four fills which between them yielded the largest assemblage of pottery from any Early Roman ditch on the site (538 sherds, 3526g). Most of the pottery dated to the 1st century AD and included a small number of Late Iron Age slow wheel turned sherds (16 sherds, 137g). The fills also contained animal bone (1410g) and fired clay (71g).

4.6.6 The remaining larger ditches included **137**, **139** and **592**. Other long running linear boundaries which were shallower included **649**, **788**, and **1050**. Within this network of long running linear boundaries were smaller plots or enclosures, such as those formed by ditches **640** and **653** in the north-east corner, both of which contained larger assemblages of pottery than most of the larger ditches. Two bulk soil samples collected from ditch **640** contained large assemblages of spelt wheat chaff, similar to those in nearby pit **619** (see 4.6.11 below and appendix B.2). Ditch **653** also contained three fragments of quern stone including two pieces of rotary quern (SF 62 and 114) and a fragment of millstone (SF 63). The excavation slot next to the eastern baulk (cut **763**) yielded 30 hobnails.

4.6.7 Enclosure **1077** in the east of the site was thought to be associated with metalworking. The enclosure was oval in shape, measuring 18.3m long and 9.7m wide (Plate 5). The enclosing ditch measured between 0.55 and 1.05m wide and between 0.05 and 0.25m deep. Its single fill contained a large assemblage of finds including pottery, dating mostly to the first half of the 2nd century AD (224 sherds, 1525g), animal bone (309g) and most notably, slag (3016g). The slag was found in several parts of the enclosure ditch with a concentration on the northern side. Bulk soil samples taken from ditch **1077** did contain hammerscale but only in very sparse quantities; no charcoal was present.

Ditch No.	Width (m)	Depth (m)	Pottery: No. sherds / g	Animal bone (g)	Other finds	Enviro.
9	2.4	1.1	526/3432	1410	Fired clay (71g)	
137	0.62-2.3	0.4-0.85	8/92	572		
139	1-1.72	0.59-0.74	1/16	148		
194	0.9-3.5	0.5-0.82	26/278	1332	CBM (247g), slag (28g)	
592	0.8-2.6	0.45-0.6	26/217	13		
640	0.65-1.86	0.1-0.48	88/631	435	Tile (18g), shell (16g)	Frequent spelt grain and chaff, charcoal
649	0.56-2.65	0.16-0.58	47/364	1627	Oyster shell (86g)	
653	0.9-2.38	0.2-0.72	192/1277	2551	CBM (258g), quern stone (5.5kg), slag (15g), hobnails	Sparse charcoal
780	1.8-3.2	0.52-0.72	29/139	239	CBM (142g), slag (13g)	Single grain
785	0.4-1.92	0.2-0.58	111/1157	34	CBM (139g)	
788	1.3-1.9	0.24-0.36	41/399	342	Slag (193g)	

Ditch No.	Width (m)	Depth (m)	Pottery: No. sherds / g	Animal bone (g)	Other finds	Enviro.
1050	1.47-1.6	0.5-0.54	1/4	269		
1077	0.55-1.05	0.05-0.25	224/1525	309	Slag (3016g)	Occ. spelt and charred grains

Table 2: Summary of selected Early Roman ditches

4.6.8 A large portion of the western half of the site (an area measuring *c*. 115m x *c*. 85m) was occupied by a group of parallel ditches or cultivation beds. There were 31 cultivation beds in total, all orientated north-north-east to south-south-west. Each bed was separated by approximately 3m from the next and they measured between 0.43 and 1.1m wide and between 0.03 and 0.4m deep (although most were approximately 0.2m deep) with steep sides and a flat base. Five of the cultivation beds, spread across the group as a whole, are summarised in Table 3. Finds were rare, pottery from the entire group totalled 38 sherds (149g) and the only other find was a fragment of ceramic building material in **1271**. There was also no environmental evidence to suggest what the cultivation beds were being used for. A pollen sample was taken from the basal fills of ditch **194** to the north (see 4.6.2 above) in the belief that a large, open, contemporary ditch would be the best candidate for finding pollen associated with crops growing in the cultivation beds. Unfortunately the results were poor with only a single grain of grass pollen and a single *sphagnum* moss spore present (see appendix B.4).

Cultivation bed	Width (m)	Depth (m)	Pottery: No. sherds / g
191	0.7-0.75	0.18-0.2	4/18
379	0.68-0.8	0.12-0.35	
383	0.6-0.9	0.05-0.3	1/3
471	0.42-0.6	0.2-0.22	
1154	0.71-0.75	0.25-0.4	1/3

Table 3: Summary of selected Early Roman cultivation beds

4.6.9 In addition to the main set of cultivation beds there were two further groups of fragmented ditches to the east of ditch **194**, which looked like smaller versions of the cultivation beds. The first group was made up of thirteen short ditches measuring *c*. 10m in length, extending between ditches **649** and **689**. The second group was formed by at least twelve slightly longer ditches, measuring *c*. 25m in length, extending between ditches **689** and **788**. In both cases the ditches were orientated north-west to south-east, were approximately 4m apart and were narrow and shallow, typically measuring 0.5m wide and 0.15m deep.

Pits

4.6.10 There were approximately 30 discrete Early Roman pits on the site, which varied in size and function (selected pits are summarised in Table 4). Pit **160** in the far north of the site was a well. It was sub-circular in shape, measuring 2.8m long, 2.6m wide and 1.46m deep with steep – vertical sides and a flat base (Fig. 11, section 30). Pollen assessment of the lower waterlogged fills (see appendix B.4) revealed an assemblage dominated by herbs, particularly grass (*Poaceae*), along with some tree pollen, most commonly hazel-type (*Corylus avellana*-type) and also alder (*Alnus*) and oak

(*Quercus*). The lowest fill also contained cereal-type pollen, although these could represent cultivated or wild varieties. Bulk soil samples from the primary fills contained seeds from plants likely to be growing close to the feature such as dead nettle, buttercup, brambles and thistles, as well as seeds from plants that prefer damp habitats such as hemlock and sedges (see B.2.18 in appendix B.2). All finds from the well were recovered from the primary fill and comprised pottery dating to the 2nd – 3rd century AD (15 sherds, 138g) and animal bone (1126g). This was the only well-like feature on the site although pit **1426**, which truncated ditch **780** in the south of the site, may have been a waterhole. It was sub-circular in plan, measuring 4.1m wide and 1m deep. The basal fill was silt-rich but not waterlogged; an environmental sample produced a single charred spelt grain.

4.6.11 The majority of pits were smaller and were clustered in the north-east corner of the site. For example, there was a concentration of pits to the west of ditch **640**, including **619**, **680**, **904**, **931**, **946** and **962**. Pits **619** and **680** were particularly noteworthy. Neither were very deep; pit **619** measured 2.05m long, 1.1m wide and 0.39m deep, while pit **680** measured 3m long, 2.04m wide and 0.34m deep. Both pits contained stake holes in their base; only 5/6 in **680** but pit **619** contained approximately 50 stake holes, which formed a sub-rectangular shape (Fig. 8). The fill of both pits comprised a very dark brown silty loam, from which abundant spelt wheat processing waste and chaff (glume bases, spikelet forks and rachis fragments predominate) was recovered from environmental samples (see appendix B.2). The abundance of charred chaff recovered is likely to be evidence of the crop processing waste being used as fuel for some unidentified industrial process, which may or may not be linked to the pits themselves. The stake holes may be a clue as to the function of the pit but a lack of *in situ* burning indicates the pits were backfilled with the waste later on, rather than burning taking place within them. Both pits also contained finds although **619** produced far more; 2nd century pottery (75 sherds, 980g), animal bone (129g), slag (72g), 3 fragments of fired clay (18g), a fragment of burnt mudstone (15g) and oyster shell (39g). Pits **904**, **931** and **946** also contained dark fills with significant quantities of spelt chaff and grain.

4.6.12 Other notable pits included **790** and **793** in the east of the site and **153** in the far north-east, all of which contained large finds assemblages. Both **790** and **793** were large on the surface but relatively shallow, **790** was the deepest at 0.41m. Pit **790** contained early – mid 2nd century AD pottery (222 sherds, 2622g) including five sherds of samian (see appendix A.3), animal bone (3991g, predominantly horse and cattle), a small enamelled brooch, most likely dating to the 2nd century (SF 38), slag (31g), glass (90g) and two worked bone pins (SF 39 and 40; only one of the pieces can be dated, being a common Late Roman type, see appendix A.9). Pit **793** contained 5 sherds of 2nd century pottery (28g) and a very large assemblage of animal bone (11139g) including at least 30 fragments of horse and a similar number of cattle. Pit **153** was much smaller but contained a large assemblage of pottery (225 sherds, 4120g) including over 3kg of Horningsea storage jar fragments.

Pit No.	Length (m)	Width (m)	Depth (m)	Pottery: No. sherds / g	Animal bone (g)	Other finds	Enviro.
153	2.5	2.1	0.4	225/4120	2		
160	2.8	2.6	1.46	15/138	1126		Pollen: herbs, espec. Grass, and some tree
619	2.05	1.1	0.39	75/980	129	Slag (72g), fired clay (18g), oyster shell (39g)	Abundant CPW: cereals, chaff, charcoal
680	3	2.04	0.34	9/68	30	Fired clay (11g)	Abundant CPW: cereals, chaff, charcoal
790	4	2.52	0.41	222/2622	3991	SF 38: Cu alloy brooch, slag (31g), glass (90g), SF39 & 40: bone pins	Occasional spelt
793	2.2	1.94	0.38	5/28	11139		Sparse charcoal
904	3.54	1.55	0.21	14/144	8	Shell (42g)	Spelt grain and chaff, charcoal
931	3.8	2.8	0.52	18/336	257	SF49: millstone fragment (4518g), slag (9g)	Spelt grain and chaff, charcoal
946	0.8	0.6	0.15	5/36	1		Spelt grain and chaff, charcoal
962	2.38	1.15	0.24	5/51			
1426	4.5	4.1	1	2/12			Single spelt grain

Table 4: Summary of selected Early Roman pits

Structures

4.6.13 A group of five pit-like features (**434**, **476**, **519**, **535** and **541**), interpreted as structures, were located on the higher ground in the south-west of the site (Table 5). In plan structure **434** looked like a large sub-rectangular pit, measuring 10.1m long, 5.8m wide and 0.4m deep with shallow, steep sides and a flat base (Fig. 9). Close to the centre of the feature was a beam slot (**436**), measuring 2.9m long, 0.4m wide and 0.62m deep, which was parallel with the long sides of the structure. It contained two fills, although the basal fill was almost non-existent; both fills comprised a sterile clayey silt. A surprisingly large finds assemblage was recovered from the upper fill. Pottery dating between the late 1st – mid 2nd century AD totalled 81 sherds (599g) and included five sherds of samian. A residual assemblage of struck flint was recovered (22 pieces, 182g), which included an early Neolithic leaf-shaped arrowhead (SF 12), a finely made denticulated oval flake, which may also be of early Neolithic date, and eighteen flakes, broadly dated as Mesolithic – Early Bronze Age. The lithic assemblage is surprisingly large, representing more than a quarter of the entire struck flint assemblage from the site. The fill also contained fragments of lava stone (SF15; 453g), slag (25g), CBM (55g), Roman glass (SF 13) and animal bone (7g). The only environmental remains were single charred grains from two bulk soil samples.

4.6.14 The remaining four structures had the appearance of short lengths of ditch, measuring between 8 – 13m long. Structures **535** and **541** measured between 0.4m and 0.47m deep, whereas **476** and **519** were shallower, measuring between 0.12 and 0.22m deep. All apart from **476** contained pottery, with the most coming from structure **535** (9 sherds, 154g).

4.6.15 The features were thought to represent the remains of partially sunken buildings, similar in form to Anglo-Saxon sunken featured buildings with a wooden floor suspended over a pit, although the CBC examples were clearly Early Roman in date. They perhaps formed small temporary barns or agricultural buildings where crops were processed or stored, possibly crops from the adjacent cultivation beds. The sunken area would have helped keep the floor dry and aerated. This may seem a bold interpretation based on the evidence but if the structures were fairly ephemeral it may be that features such as postholes were not substantial and have left no trace. The interpretation is supported by the location, on the drier contours, the most suitable part of the site for structures.

Structure No.	Length (m)	Width (m)	Depth (m)	Pottery: No. sherds / g	Animal bone (g)	Other finds	Enviro.
434	10.1	5.8	0.4	81/599	7	Flint (182g), SF 12: arrowhead, SF 15: lava stone, slag (25g)	2 x single wheat grain, rare charcoal
476	10.2	1.9	0.13				
519	11	2.7-2.8	0.12-0.22	2/12			
535	13.5	1.8-2.25	0.36-0.47	9/154		Burnt flint (14g)	Rare chaff and charcoal
541	8	2	0.4	7/68	20		

Table 5: Summary of Early Roman structures

Human Skeletal Remains

4.6.16 Four cremation burials were found within the excavation area (see appendix B.1). The burials comprised small, shallow pits, the fill of which contained fragments of human bone. However, all had very low bone weights and may have been token burials or heavily truncated. Pit **309** was located in the west of the site, pit **432** was located 50m to the east wedged between the cultivation beds and ditch **194**, and pits **809** and **819** were together in the east of the site. The largest of the four pits was **432** measuring 0.35m in diameter and 0.2m deep; it contained 20g of cremated bone. Pit **809** contained the most cremated bone (48g). The cremations were un-urned and no associated dating evidence was recovered. The cremations have provisionally been dated as Early Roman because of the predominance of contemporary features.

4.7 Post-medieval (c. AD 1500 – 1900)

4.7.1 Following the Early Roman period there was no evidence of land-use on the site until the post-medieval period, when a series of boundary or drainage ditches were constructed (Fig. 10 and Table 6). Evidence of ridge and furrow also dated to the post-

medieval period. Finds in this period were rare although they were great enough in number to conclusively date the features. In addition, the fills of the post-medieval features were completely different from those of the earlier periods, being uniformly a mid greyish brown sandy silt.

4.7.2 A series of four ditches (**200**, **204**, **336** and **1103**), orientated broadly north-west to south-east, were constructed across the central part of the site. Given the location of the ditches in the wettest part of the site, the ditches probably represent repeated attempts to control drainage, as much as they are boundaries. Significantly, there was a certain degree of correlation with the principal boundaries of both the Bronze Age (**334**) and Early Roman (**194**) periods. Ditch **1103** in particular followed the same course as the two earlier ditches for approximately 60m. This suggests that at least one of the earlier ditches was still visible as an earthwork in the early post-medieval period. Perhaps the very presence of large infilled ditches was creating an area of particularly wet ground and this new phase of ditch construction was a means of creating more effective drainage features.

4.7.3 The northern-most ditch (**204**) extended for at least 200m across the entire site, curving slightly along its course. It measured between 0.36 and 1.5m wide and between 0.19 and 0.5m deep with steep sides and a concave base. It contained up to three fills from which a small finds assemblage was recovered. The finds comprised a single sherd of Staffordshire-type slipware dating to mid 18th-19th century (28g), two fragments of clay tobacco pipe (6g), CBM (281g) including three fragments of early post-medieval roof tile, and animal bone (76g).

4.7.4 Ditches **200** and **1103** were not as straight as ditch **204**. Ditch **200** measured between 0.55 and 1.85m wide and between 0.12 and 0.4m deep with gently sloping sides and a concave base. Its single fill contained two residual sherds of Early Roman pottery (11g) and animal bone (139g). To the south of where it followed the course of the earlier boundaries, ditch **1103** changed orientation twice, eventually running north to south at the southern baulk. Ditch **1103** measured between 0.6 and 1.8m wide and between 0.1 and 0.43m deep with gently sloping sides and a concave base. Its single fill contained the largest assemblage of finds from any of the post-medieval ditches, including four sherds of pottery (64g), dating predominantly to the late 18th-early 19th century, four fragments of clay tobacco pipe (8g), slag (17g), CBM (1316g; roof tile and brick, mainly dating to the early post-medieval period – the 18th century), a fragment of post-medieval glass (4g) and animal bone (397g).

4.7.5 There were several shorter ditches extending between and running perpendicular to the main ditches, such as **165**, **391**, **550** and **1042**. Ditch **550** was typical, measuring between 1.2 and 1.8m wide and between 0.25 and 0.35m deep with gently sloping sides and a concave base. Its single fill contained single fragments of post-medieval brick (57g) and tile (2g). In the south-east of the site was what appeared to be the corner of a field, formed by ditch **881** and its re-cut (**776**). Ditch **776** was the more complete of the two, forming both arms of the enclosure. It measured between 1.46 and 2.74m wide and between 0.24 and 0.48m deep with gently sloping sides and a concave base. It contained up to two fills, which yielded a single sherd of post-medieval Redware pottery (74g), a tiny fragment of clay tobacco pipe (1g), a residual fragment of Roman roof tile (73g; imbrex), a fragment of post-medieval brick (184g), a fragment of quern stone (45g) and animal bone (261g).

Ditch No.	Width (m)	Depth (m)	Pottery: No. sherds / g	Animal bone (g)	Other finds
165	0.8-1.1	0.22-0.3			
200	0.55-1.85	0.12-0.4	2/11	139	
204	0.36-1.5	0.19-0.5	1/28	76	Clay pipe (6g), CBM (281g)
336	1.25-2.2	0.16-0.64	2/5	124	Roman and post-med CBM (185g), oyster shell (12g)
391	0.83	0.28			
474	0.55-1.39	0.04-0.24	1/12	280	Clay pipe (3g)
543	0.5-1.02	0.06-0.4			
550	1.2-1.8	0.25-0.35			Post-med brick (57g), tile (2g)
776	1.46-2.74	0.24-0.48	1/74	261	Clay pipe (1g), Post-med brick (184g), Roman tile (73g), stone (45g)
881	0.6-1.3	0.16-0.28			
1042	0.86	0.26	1/1		
1103	0.6-1.8	0.1-0.43	4/64	397	Clay pipe (8g), slag (17g), Post-med brick (1316g), glass (4g)

Table 6: Summary of selected post-medieval ditches

4.7.6 All the furrows were orientated north-north-east to south-south-west. There were two sets; the first was located in the west of the site and comprised at least 13 furrows. Although fragmentary it was clear that the furrows extended beyond the edge of excavation to the south, whereas in the north the furrows all ended around the 13.7m contour. Crucially, the furrows truncated some of the post-medieval ditches, including **200** and **336**, providing an approximate date for the ridge and furrow. The second set were located in the south-east of the site and consisted of four furrows, all within the field formed by ditches **881** and **776**.

4.7.7 Across the site the furrows varied in size depending on the level of truncation, but typically measured between 2 and 3m wide and between 0.1 and 0.2m deep. A number of finds were recovered including pottery (13 sherds, 96g), clay tobacco pipe including a decorated stem of mid-18th century date (24g), CBM (868g; predominantly roof tile of late medieval or early post-medieval date), animal bone (50g) and oyster shell (33g). Some of the pottery was post-medieval, dating predominantly from the mid 16th to the end of the 18th century (8 sherds, 82g), with the remainder being residual Early Roman (5 sherds, 14g).

5 Factual Data and Assessment of Archaeological Potential

5.1 Stratigraphic and Structural Data

The Excavation Record

5.1.1 All hand written records have been collated and checked for internal consistency, and the site records have been transcribed onto an MS Access Database. Quantities of records are laid out in Table 7.

Type	*Quantity*
Context registers	41
Context numbers	1557
Section registers	9
Sample registers	17
Plan sheets	116
Sections	389
Digital photographs	1704
Black and White Prints	36

Table 7: Quantification of excavation records

Finds and Environmental Quantification

5.1.2 All finds have been washed, quantified, and bagged or boxed. Total quantities of the main finds categories per period are listed in Table 8. The totals refer to the quantity of a given material in all features assigned to a specific period, including residual and intrusive material.

Period	Pottery (g)	Animal bone		Fired Clay/ CBM (g)	Worked Flint (g)
		NISP	Weight (kg)		
Middle – Late Bronze Age	287	26	4278	9	803
Romano-British	35420	223	37932	3565	283
Post-medieval	486	14	2989	3110	8
Unphased		13	1461		23
Total	**36193**	**276**	**46660**	**6684**	**1117**

Table 8: Quantification of finds by period

5.1.3 Environmental bulk samples were collected from a representative cross section of feature types and locations. Bulk samples were taken to analyse the preservation of micro- and macro-botanical remains. Pollen samples were also collected. They are summarised by feature type in Table 9 and by period in Table 10.

Sample type	Ditches	Pits	Waterholes/ wells	Cultivation beds	Burials	Other	*Total*
Flotation	41	18	11	7	4	5	*86*
Pollen/ micro-morphology	1		2				*3*

Table 9: Quantification of samples by feature type

Sample type	Middle Bronze Age	Early Roman	Post-med	Natural	*Total*
Flotation	19	64 (check **68** & **70** unphased)	2	1	
Pollen/ micro-morphology	1	2			

Table 10: Quantification of samples by period

Range and Variety

5.1.4 A range of features were excavated on the site, principally ditches, but also pits, waterholes, postholes, stake holes, structures, areas of metalled surface, natural hollows and tree throws. The ditches were mainly boundary ditches although the larger ones must also have operated as drainage features. There were several large pits which have been described as waterholes.

Condition

5.1.5 Preservation of features was good across the excavation area. It was difficult to determine the level to which features had been truncated although it is thought that there had been only limited plough-truncation over much of the area.

5.2 Artefact Summaries

Prehistoric Pottery

Summary

5.2.1 A total of 225 sherds weighing 1212g were collected from 35 excavated contexts. A small quantity of Early Iron Age pottery dating to c. 800-350 BC was recovered (98 sherds, 235g), characterised by the extensive use of flint-tempered fabrics, either within a sandy clay matrix or in combination with fossil shell. No decorated or otherwise diagnostic sherds were present. It is possible that the flint-tempered pottery may be Later Bronze Age, contemporary with the large assemblage of that period found at the nearby Addenbrooke's Hutchison Site (Evans *et al*. 2008). The majority of the assemblage is Late Iron Age, *c*. 100 BC – AD 43 (125 sherds, 974g). All of the Late Iron Age sherds are handmade or slow wheel turned and include some forms, especially the large storage jars, which almost certainly continued in use alongside Roman wheel-made pottery. Two sherds, 3g, are probably prehistoric but are otherwise not closely datable.

Statement of Potential

5.2.2 The small assemblage forms an interesting addition to the numerous pottery finds from around south Cambridge. The group should be considered alongside the Roman assemblage and is comparable with contemporary late 1st century BC to early 1st century AD pottery from Addenbrooke's (*ibid*) and Clay Farm (Brudenell pers comm.) which span the period of change from the mostly sandy, plain, slack-shouldered jar forms of the mid Iron Age to the adoption of a limited number of hand made 'Romanizing' cordoned bowl and jar forms along with scored and combed storage jars in sandy and grog-tempered fabrics in the latest Iron Age.

Romano-British Pottery

Summary

5.2.3 A total of 3747 sherds, weighing 35420g, of early-to-mid Roman pottery was recovered. The pottery mostly comprised locally produced utilitarian coarse ware jar/bowl forms, but imported Gaulish fine tablewares and Spanish olive oil amphora were also found.

5.2.4 Samian totalled 116 sherds, weighing 0.984kg. Dating from the 1st century AD, the majority of the assemblage (*c.* 94% by weight) is from Central Gaul with smaller quantities recovered from both South Gaulish and East Gaulish production centres. One of three stamped vessel sherds is significant and can be associated with the potter *Regalis* i, who was producing vessels at Lezoux between AD 155-185, (mid to late Antonine). Located on the basal interior of a Drag. 33 cup the stamp reads REG[ALIS] (Stamp 3). This stamp is of particular interest as the die used to produce this specific stamp is unknown and has not been identified or recorded previously.

5.2.5 This material is typical of successful rural settlement within this time frame and area. It adds, therefore, to a growing corpus of pottery available to study. The pottery was recovered from 256 deposits, the majority within ditches (61% by weight) and pits (26%), although small amounts were recovered from other features. The pottery is generally in poor condition with an average size of only *c*. 9g, few original surfaces or use residues have survived.

Statement of Potential

5.2.6 This is a relatively large and well-recorded group of early to mid Roman pottery, recovered from an area of rich archaeological remains that have been intensively excavated and analysed (Evans *et al* 2008; Phillips and Mortimer 2012). It can be confidently stated therefore, that this ceramic material is typical of the area and chronological period (Lyons 2012). Although the potential of this assemblage is limited by its poor condition further detailed analysis of the fabrics and forms, and placing them firmly within the context of their archaeological data, will maximise the possible extraction of useful data. A limited amount of additional work will enable this ceramic assemblage to contribute to the interpretation of the site within its local and regional context.

Post-Roman Pottery

Summary

5.2.7 Archaeological works produced a pottery assemblage of 32 sherds, weighing 0.689 kg. The assemblage spans the mid 13th to the 19th century. The condition of the overall assemblage is moderately abraded and the mean sherd weight is moderate at approximately 22g. The pottery was recovered mainly from furrows and ditches.

Statement of Potential

5.2.8 The assemblage is domestic in nature, representing table and food preparation vessels. The few medieval sherds present suggest the area of excavation is some distance from the medieval settlement where the pottery originated. The post-medieval sherds and early modern material may indicate later manuring but the low levels of deposition suggest the domestic occupation from where they were derived is some distance from the area of excavation. While the assemblage is useful for providing an approximate date for the post-medieval features on site there is no potential beyond this.

Lithics

Summary

5.2.9 The excavations resulted in the recovery of 74 struck flints and a substantial quantity of unworked burnt flint. Just under 4kg of burnt stone was recovered. Nearly all the burnt stone came from a single feature, Bronze Age pit **1428**, with much smaller quantities coming from six other features The struck flint was made from good knapping-quality flint but the heavily recorticated state of most of the assemblage precludes identification of the colour of most pieces.

5.2.10 The majority of the assemblage was recovered from features dated to the Roman period, notably structure **434** which contained 22 pieces. These pieces are of mixed date and variable condition, as would be expected from a residually deposited assemblage. Bronze Age features produced a quarter of the assemblage and whilst this includes some clearly earlier pieces, the majority are in good or only slightly chipped condition and are likely to be at least broadly contemporary. A long period of flint use at the site is also indicated by the assemblage's typological make-up and technological attributes. Most of the blades and blade-like flakes found at the site are small and more characteristic of later Mesolithic or Early Neolithic industries, and these are also less heavily recorticated. The later period is certainly indicated by the presence of a finely made but slightly asymmetrical leaf-shaped arrowhead, found in Roman structure **434**. Probably of similar date to this is a finely made denticulated oval flake that was also found in the same structure. Amongst the remainder of the assemblage are a number of flakes that whilst not evidently produced through systematic reduction are thin and have been competently produced from well-maintained cores. Whilst not easy to place, at least the majority of these are unlikely to have been made after the Early Bronze Age. The majority of flakes as well as most, if not all, of the cores have been produced by a simple and unstructured core-and-flake technology, typical of later prehistoric industries, particularly those of the later second and first millennia BC.

5.2.11 The struck flint assemblage has clearly been made over a long period of time. The earliest piece comes from a tradition of producing exceptionally large blades that is most closely matched by late Glacial / early Post-glacial 'long blade' industries. Probably the bulk of the struck flint assemblage can be dated to the later second or first millennia BC and much of this is probably associated with the Middle Bronze Age features recorded at the site. Many of these features produced small collections of contemporary flintwork in good condition and suggestive of opportunistic and short-lived knapping episodes occurring in the vicinity.

Statement of Potential

5.2.12 The assemblage complements and enhances the findings from the many other excavations conducted in the Addenbrooke's environs, such as Clay Farm and the Hutchison Site.

Worked Stone

Summary

5.2.13 A small but significant assemblage of worked stone was recovered from the investigations. Two pieces of clunch appear to have been used structurally although neither retains any tool marks. A single heat cracked quartzite cobble, recovered from the fill of a shallow Bronze Age pit shows some evidence that it has been used as a rubber. The remainder of the assemblage comprises quern and millstone fragments

from nine contexts. Small undiagnostic fragments of lava were recovered from three features. The remaining six fragments comprise two definite rotary quern fragments, two definite millstone fragments, one possible millstone fragment, and one fragment that could be from either. All are from Early Roman features in the north-east of the site.

Statement of Potential

5.2.14 The assemblage of worked stone has the potential to add to our understanding of activity at the CBC. The existence of a number of rotary querns and millstones indicates their likely use on site, despite the reuse of several of them for sharpening tools. Whilst the querns typically demonstrate domestic use, the millstones are indicative of a greater scale of grinding. The millstones found here can be added to a number from the locale, with five possible examples and two definite ones from Clay Farm (Shaffrey in prep) as well as an example from north-west Cambridge (Evans and Newman 2010). What is intriguing, is how we interpret the presence of querns and millstones here. Their most likely function is the grinding of grain for flour. It should be noted, however, that both querns and millstones were used for the processing of other things. There is a small possibility that the stones were not used for grinding here and were imported for secondary use. Several, but not all, the fragments were reused for sharpening.

Metalwork

Summary

5.2.1 In total 112 items of metalwork were recovered from the excavations, which can be separated into copper alloy (13 items), iron (93 items), silver (2 items) and lead (4 items). The 13 copper alloy objects included six coins. All are in fair to good condition; four of the coins recovered (SFs 5, 6, 11, 65) are probably of Roman date, but they will require cleaning and conservation to confirm this. Two of the coins can be dated to the reign of George III (reigned AD 1760 – 1801). Finds of Roman date are confined to a small enamelled brooch of headstud type (SF 38), and a poorly-preserved ligula (SF 1). None of the other copper alloy finds are chronologically or functionally diagnostic. The majority of the ironwork items are nails and hobnails, including a group of 30 hobnails from Early Roman ditch **653**. Overall the ironwork was in poor to fair condition, with appreciable corrosion products on all objects, but, in most cases, the objects could be identified with moderate confidence. Apart from the group of hobnails very few of the other items of ironwork were chronologically sensitive, but a large triangular knife blade (SF 67) found unstratified is probably also of Roman date. Only two fragments of silver were recovered, a faceted finger ring (SF 21) and a coin (SF 70), both of which were unstratified. The ring is in good condition, the coin fair. There were only four items of lead, all of them found unstratified. Two weights are of interest, biconical weight SF 25 could well be of Roman date, although it is a long-lived type, persisting to the present day. A second weight (SF 20) is more ornate, and seems likely to be medieval in origin.

Statement of Potential

5.2.2 The metalwork has only very limited potential to further inform the dating and interpretation of this site.

Industrial Residues

Summary

5.2.3 A total of 154 pieces of metal working debris weighing 3942g were collected from 35 excavated contexts, with the majority coming from an Early Roman sub-rectangular enclosure (**1077**; 103 pieces, 3078g). The assemblage comprises secondary metal working debris, probably from iron smithing and includes several pieces of vitrified hearth lining. Dating from pottery associated with the assemblage suggests that it was deposited in the 1st to 2nd centuries AD.

5.2.4 The assemblage is formed of rust-coloured, often formless lumps which exhibit poor susceptibility when tested with a magnet. The pieces have a lumpy, vesicular texture typical of smithing slag, which is formed of corroded hammerscale and other hearth debris. Several pieces contain flint, chalk or quartz pebbles and two have impressions from organic material, perhaps fuel. One piece, from fill (1306), part of enclosure **1077**, contains dark blue specks which appear to be material incorporated from the hearth base. A possible plano-convex hearth base was found in fill (1109), also part of enclosure **1077**.

Statement of Potential

5.2.5 The small assemblage is of little research potential, although it may be worth seeking the advice of a specialist with access to a micro probe who might be able to identify the blue inclusions in the debris from fill (1306) in enclosure **1077**.

Fired Clay and Ceramic Building Material

Summary

5.2.6 A small assemblage of fired clay amounting to 24 fragments (433g) was recovered from eleven contexts comprising fills of ditches, a gully, a channel and pits, all of Early Roman date except for a single Bronze Age pit. The mean fragment weight of 18g indicates average preservation for fired clay and abrasion was all in the moderate to high categories. Fired clay is not closely datable and relies on other dated artefacts for phasing, though a limited number of diagnostic forms can be assigned to broad periods.

5.2.7 A small assemblage of ceramic building material (CBM) amounting to 112 fragments (6447g) was recovered from 45 contexts; predominantly boundary and drainage ditches and furrows from cultivation, with a small quantity from other miscellaneous features. It divides into roughly equal proportions of Roman and post-Roman tile. The mean fragment weight of 57g is low for CBM, but reflects the number of peg tile fragments that tend to fragment into smaller pieces than other forms. The Roman assemblage amounts to only 19 pieces (3141g) with a MFW of 165g, which falls in the low average for Roman tile. The dominant form is brick with the nine examples accounting for 75% by weight of the Roman tile. Six fragments of indeterminate flat tile measuring from 15 to 24 mm thick are all most likely to derive from *tegula* or *imbrex*, rather than brick. The post-Roman assemblage comprised 81 pieces (3110g) with a low MFW of 38g reflecting the dominance and fragmentary character of the roof tile in this period. The roof tile is all rectangular flat tile, of which a number of pieces retained peg holes. The majority of the tile is made in Gault clay fabrics, which was used for tile production from the 15th century. A 15th-17th century date is assigned to most of the roof tile, though some examples were assigned a slightly later date in the post-medieval period.

Statement of Potential

5.2.8 The fired clay and ceramic building material has only very limited potential to further inform the dating and interpretation of this site.

Clay Tobacco Pipe

Summary

5.2.9 Archaeological works produced a small assemblage of clay tobacco pipe stems including a decorated stem produced by pipe manufacturer S. Wilkinson in Cambridge in the mid 18th century, and a near-complete pipe bowl that can be dated to the mid-late 18th century. While the majority of the clay pipe stems can not be closely dated, some stems were recovered alongside post-medieval pottery.

Statement of Potential

5.2.10 The clay tobacco pipe has only very limited potential to further inform the dating and interpretation of this site.

Worked Bone

Summary

5.2.11 Only two fragments of worked bone were recovered, both of them pin fragments (SF 39 and 40) from Early Roman pit **790** (fills 791 and 792 respectively). Both were in fair condition.

Statement of Potential

5.2.12 The worked bone has only very limited potential to further inform the dating and interpretation of this site.

Glass

Summary

5.2.1 Eleven items of glass were recovered. All were small, but all were in good condition. Five of the glass fragments came from Early Roman features and four of these are likely to be Roman in date (SF 4, 13, 42 and no SF). Although all are very small, little more than chips, three can be identified as probably from mould-blown storage bottles, a common form, and likely to be of first to early third-century date. The remainder of the fragments are in the dark green metal typical of wine/beer bottles from the later seventeenth to the nineteenth century, and although fragments are small, the cylindrical body implied by some of the fragments suggests late eighteenth or nineteenth-century forms.

Statement of Potential

5.2.2 The glass has, effectively, no potential to contribute to the dating or interpretation of the site.

5.3 Environmental Summaries

Human Skeletal Remains

Summary

5.3.1 A small collection of human skeletal remains (HSR) in the form of cremated bone was retrieved during excavation. In total four deposits were recovered from four small, shallow pits, dated provisionally as Early Roman. All had very low bone weights (the largest weighed 48g) and may have been token burials or heavily truncated.

Statement of Potential

5.3.2 The small size of all four cremation deposits means that there is very little potential for further analysis. In general the degree of fragmentation will not allow for any pathology to be observed or for any estimation of sex. There are no identifiable fragments suitable to narrow the age estimation.

Environmental Remains

Summary

5.3.3 Eighty-one bulk samples were taken during the excavations. Most of the deposits sampled date from either the Bronze Age or the Early Roman period and include ditches, waterholes, pits and features relating to possible structures. Environmental evidence from the Bronze Age samples is poor with only a few samples containing charred plant remains. The highest potential comes from waterhole **1552** although survival of plant material is not particularly good and is mainly restricted to the more durable seeds. The lower deposits from waterhole **180** have been assessed for pollen survival, which is also poor. It is possible that these deposits have dried out at some point.

5.3.4 There is far greater evidence of activity in the Early Roman period. The two waterlogged samples from Roman well **160** both contain moderate assemblages of both seeds and pollen. Initial assessment has revealed a mixed-herb assemblage of plants that commonly grow on disturbed soils and wastelands. Evidence of cereal production is extensive and confined to two areas in the north-east of the site. Spelt wheat is most prevalent and has been identified by the substantial quantities of charred chaff that have been included in the backfill of several pits and ditches. The purpose of the chaff recovered from this site is not yet clear. Pits **619** and **680** both contained stake holes which probably relate to their original function and may provide some clues. It is possible that some of the stages of crop-processing took place here but there is no direct evidence. A possible industrial activity that may have required the use of chaff as fuel is metalworking. Ditch group **1077** consists of a rectangular enclosure from which a significant quantity of slag has been recovered. Flakes and spheroids of hammerscale are present in most of the samples from the enclosure ditch, but the quantities of these magnetic residues are too low to substantiate an interpretation that this is an iron-working area.

Statement of Potential

5.3.5 The environmental samples from the Bronze Age deposits have no potential for further archaeobotanical analysis. The only samples containing contemporary plant remains are poorly preserved and no further work is recommended.

5.3.6 During the Early Roman period, the site was an area of cultivation and industrial activities, which involved the burning of substantial amounts of spelt processing waste. Further study of these samples is considered essential for understanding the nature of these assemblages in accordance with the current published edition of the Research Agenda of the East of England (Medlycott 2012), which includes production and processing of cereals and craft industries.

Faunal Remains

Summary

5.3.7 An assemblage of animal bone weighing a total of 46.9kg was recovered during the excavation. The material was recovered from a variety of features including pits and ditches dating principally to the Bronze Age and Early Roman periods, with some material recovered from post-medieval contexts. The preservation of the assemblage is generally good, although fragmented due to butchery. By far the largest number of identifiable fragments by phase (NISP; 223 fragments) was recovered from Early Roman contexts with smaller numbers from Bronze Age and post-medieval deposits. Cattle is the dominant taxon in all phases with smaller numbers of sheep and horse remains. Horse is the second most prevalent species in the Early Roman sample. Other species are rare, consisting of a portion of red deer in a Bronze Age waterhole and dog remains in three contexts (one Bronze Age and two Early Roman). As one would expect the largest number of ageable epiphyses was recovered from Roman contexts, with smaller numbers of available Bronze Age and post-medieval elements. Ageable mandibles were only recovered from Roman contexts

Statement of Potential

5.3.8 This is a small to medium sized assemblage with some potential for further work, particularly in comparing the Early Roman material with other nearby sites, including the Bell Language School (Bush, forthcoming) Clay Farm (Phillips and Mortimer 2012) and the Fawcett School (Phillips, forthcoming).

Pollen

Summary

5.3.1 Six sub-samples were submitted for pollen assessment. The sub-samples comprise two from a Bronze Age waterhole, two from a Roman well and two from a Roman ditch. Two of the assessed sub-samples, from Roman well **160**, contained good to moderate pollen assemblages, and some pollen was recorded from sub-samples taken from Bronze Age watering hole **180** but the sub-samples from Roman ditch **424** did not yield any pollen.

Statement of Potential

5.3.2 Full analysis of sample 7 from Roman well **160** will help to provide a detailed palaeoenvironmental reconstruction. There is a tentative suggestion from the assessment that the area around the well may show a change in usage from possible arable cultivation within the lower part of the sample, to one of pastoral agriculture within the upper context.

6 Updated Research Aims and Objectives

6.1 Introduction

6.1.1 The research aims and objectives for the project are partly based on those in '*Research and Archaeology Revisited: a revised framework for the East of England*' (Medlycott 2011). Where this is the case, the relevant sections are noted in italics below, and are followed by a brief discussion as to how the results of the current excavations can add to the debate on the specific research themes and objectives.

6.2 Bronze Age

6.2.1 A better understanding of why second millennium cal. BC field systems may have developed in some parts of the region, but not others, is needed. The regionalisation of settlement patterns needs further study.'

6.2.2 Investigate how the Bronze Age features fit into the wider landscape, particularly with reference to the triple-ditched sub-square enclosures at AstraZeneca south, to the west, and the contemporary remains from the Bell Language School, to the east.

6.2.3 On a wider scale, the site sits within a Bronze Age landscape of national importance. How does the evidence on the east side of the Hobson's Brook valley compare/contrast with the large areas of Middle Bronze Age field system, enclosures and associated settlement at Clay Farm on the western side of the valley?

6.3 Iron Age

6.3.1 What does the area(s) of metalled surface represent? Combined with the very similar expanse of metalled surface at the Bell Language School, dated to the earliest part of the Iron Age, this appears to be a rare and significant example of a prehistoric track or series of tracks. At CBC, the metalled surface was located on the lower contours, where the soil was silty and the water table higher, suggesting the reason for its construction could have been to consolidate the ground. However, at the Bell school, the free draining gravels combined with the scale of the metalling suggests it may not be purely functional. A west-north-west to east-south-east orientated 'routeway' has been identified on the western side of the Hobson's Brook valley at Clay Farm and the Fawcett School. The routeway was established in the Middle Bronze Age and was marked by a series of parallel ditches. If the alignment of the routeway is extended eastwards it would run very close to the northern side of the CBC excavations. Is the metalled surface evidence of the routeway during the Iron Age and on the eastern side of the valley?

6.4 Roman

6.4.1 '*What forms do the farms take, and is the planned farmstead widespread across the region? What forms of buildings are present and how far can functions be attributed to them? Are there chronological/ regional/ landscape variations in settlement location, density or type?'*

6.4.2 The Early Roman evidence at CBC comprised a relatively dense area of mostly small fields or plots, bounded on the whole by shallow ditches. There may have been more than one phase of activity but the layout does appear planned to a certain degree. In terms of buildings, the sunken structures in the west of the site are interesting. They have been interpreted as a form of barn, where crops may have been processed or stored on a temporary basis. Parallels should be sought to determine whether there is any additional evidence on other sites.

6.4.3 'How far can the size and shape of fields be related to the agricultural regimes identified?'

6.4.4 As stated above, most of the fields or plots were small. The size of the fields is evidence of the sort of agricultural regime being practised; presumably a variety of crops were being cultivated. The series of cultivation beds, while not unique, are a good example of this phenomenon, especially when viewed alongside those at the Bell Language School and Addenbrooke's Perimeter Road to the east and at Clay Farm to the west. The large-scale nature of the fields suggests they were used for a cash-crop, which was maybe produced for export. Are the cultivation strips always associated with the same crop or is there more than one use for them? On other sites they have been interpreted as vineyards or asparagus trenches. At CBC the cultivation strips were positioned on the lower contours (between *c*. 13.5 – 13.9m OD) where the water table was higher. In fact the strips stopped at the boundary with the higher contours, suggesting a certain level of saturation was necessary, at least for part of the year. However, at the Bell school the cultivation rows were located at c. 15m, which is possible evidence that they were not all used for the same purpose.

6.5 Post-medieval

6.5.1 The post-medieval finds assemblage (pottery, coinage, tobacco pipes, glass) all point to an 18th century date for the system of drainage ditches constructed on the site. Can this be tied in with other local sites such as Clay Farm and the Bell Language School?

6.5.2 There is evidence of continuity in the landscape at CBC, specifically similarities in the orientation and location of boundary ditches. Firstly there was a correlation between particular ditches of the Middle Bronze Age and Early Roman periods but then also between those of the Early Roman and post-medieval periods. Is there any early cartographic evidence for the post-medieval field pattern, which on a wider scale could reveal further evidence for continuity between periods?

6.6 General

6.6.1 To what extent can the CBC excavations be used alongside Clay Farm, the Addenbrooke's Hutchison Site, Bell Language school and other local sites to re-construct the contour-led settlement patterns of the Hobson's Valley?

7 Method Statements for Analysis

7.1 Stratigraphic Analysis

7.1.1 Context, finds and environmental data will be analysed using an MS Access database. The specialist information will be integrated to aid dating and complete more detailed phasing of the site.

7.2 Illustration

7.2.1 All site plans and selected sections will be digitised using AutoCAD or QGIS and report and publication figures will be created in Adobe Illustrator. Finds recommended for illustration will be drawn by hand, or photographed as appropriate.

7.3 Documentary Research

7.3.1 Primary and published sources will be consulted using the Cambridgeshire Historic Environment Record, aerial photographs and comparable sites locally and nationally.

7.4 Artefactual Analysis

Prehistoric pottery

7.4.1 A report is required which fully describes the fabric and forms present. This should include a discussion considering deposition and phasing plus a detailed comparison with contemporary assemblages from south Cambridge. No sherds require illustration.

Romano-British pottery

7.4.2 The assessment catalogue will be reviewed and where material has been identified as important to the interpretation of the site it will be looked at in more detail in accordance with the guidelines laid down by the Study Group for Roman Pottery (Darling 2004; Willis 2004). These sherds will be examined using a hand lens (x20 magnification) and will be divided into fabric groups defined on the basis of inclusion types present. The sherds will be counted and weighed to the nearest whole gram. Evidence for use, decoration and abrasion will also be noted. Whereever possible the local fabrics and forms will be recorded using published regional examples (Webley with Anderson 2008; Lyons 2012), to minimize republication of existing data. For imported fabric types the National fabric series (Tomber and Dore 1996) will be referenced.

7.4.3 Relevant sherds will be selected for illustration; priority will be given to material that has not been published elsewhere. The stamped mortaria will be sent to the relevant specialist (after it has been drawn and photographed).

7.4.4 When all the preliminary analysis of the pottery fabrics and forms have been completed further analysis of the pottery within the context of the site will take place. The pottery will be analysed by phase, by feature group and placed in its local, regional and national setting.

7.4.5 An archive report will be written presenting the results of this work, which will be a useful interpretative tool for the Project Officer and will also be suitable for publication

in an edited format. The publication report will be edited and any queries or changes undertaken by the author. The illustrations will also be checked at this time.

Samian pottery

7.4.6 Complete analysis of the assemblage and complete a full archive report suitable for publication in an edited format.

7.4.7 Identification of all mould decoration on vessels and assign where possible to a specific potters style and integration of the identifications into the report and catalogue

7.4.8 The preparation of a short catalogue of sherds for illustration showing a selection of decorative schemes identified including any sherds of special interest, specifically Die 10a, *Regalis* i, which should be both illustrated and recorded by graphite rubbing for use in the final report.

7.4.9 All mould decorated sherds should be recorded by graphite rubbing and retained as part of the final site archive.

7.4.10 The pottery should be compared more fully to the range of published sites that have been excavated in the area and placed in its regional context.

Post-Roman pottery

7.4.11 The assemblage has been fully recorded. No further work is required.

Lithics

7.4.12 Due to the size of this assemblage no further analytical work is warranted. It is recommended that an account of the lithic assemblages should included in any published accounts of fieldwork.

Worked Stone

7.4.13 The assemblage has been fully recorded. SF 49 is the only item worthy of illustration. An edited report should be prepared for inclusion into any proposed publication.

Metalwork

7.4.14 Archival catalogue entries should be completed for all materials. An illustrated report should be prepared for inclusion into any proposed publication, and some contribution be made to the incorporation of comment on the finds into the main stratigraphic text.

Metal working debris

7.4.15 The assemblage has been fully recorded. No further work is required.

Fired Clay and Ceramic Building Material

7.4.16 The assemblage has been fully recorded. An edited report should be prepared for inclusion into any proposed publication.

Clay Tobacco Pipe

7.4.17 The assemblage has been fully recorded. No further work is required.

Worked Bone

7.4.18 Archival catalogue entries should be updated and a brief comment should be prepared for inclusion into any proposed publication.

Glass

7.4.19 Archival catalogue entries should be completed and a brief comment be prepared for incorporation into the main stratigraphic/publication text

7.5 Ecofactual Analysis

Human Skeletal Remains

7.5.1 It is considered that the potential for these cremation burials to provide further information is so low that no further work is necessary except for radiocarbon dating in order that the deposits can be placed in context. Only cremation burials (431) (cut **432**) and (810) (cut **809**) contain bone fragments suitable for this.

Environmental Samples

7.5.2 Full analysis is hoped to reveal the composition and differences in distribution of the charred cereal processing waste within individual features such as pit **619** and associated features. Analysis of the waterlogged deposits within well **160** will establish a list of plant species growing in the vicinity of the well and may provide clues as to which plants were being cultivated.

Faunal Remains

7.5.3 The assemblage will require full recording and analysis. All bones will be fully recorded using a specially written MS Access database. At least 25% of a given element must be present for it to be counted. Each element will be identified to species where possible using comparative collections and reference manuals. The assemblage will be analysed and a report prepared.

Pollen

7.5.4 Pollen from sample 7 (Roman well **160**) should be analysed to provide a detailed palaeoenvironmental reconstruction. It is suggested that sub-samples are taken at regularly spaced 0.04m intervals (approximately 12 samples) to permit a full analysis.

8 Report Writing, Archiving and Publication

8.1 Report Writing

Tasks associated with report writing are to be decided following the production of the Post Excavation Assessment.

8.2 Storage and Curation

8.2.1 Excavated material and records will be deposited with, and curated by, Cambridgeshire County Council in appropriate county stores under the Site Code CAM CBC 13 and the county HER code ECB 4376. A digital archive will be deposited with OA Library/ADS. CCC requires transfer of ownership prior to deposition (see Section 10). During analysis and report preparation, OA East will hold all material and reserves the right to send material for specialist analysis.

8.2.2 The archive will be prepared in accordance with current OA East guidelines, which are based on current national guidelines

9 Resources and Programming

9.1 Project Team Structure

Name	Initials	Project Role	Establishment
Richard Mortimer	RM	Project Manager	OA East
Tom Phillips	TP	Project Officer	OA East
Barry Bishop	BB	Lithics	Freelance
Chris Faine	CF	Faunal remains	OA East
Carole Fletcher	CAF	Post-Roman pottery	OA East
Rachel Fosberry	RF	Environmental supervisor	OA East
Gillian Greer	GG	Illustrator	OA East
Chris Howard-Davis	CHD	Metalwork/ worked bone/ glass	OA North
Louise Loe	LL	Human skeletal remains	OA South
Alice Lyons	AL	Roman pottery	OA East
Sarah Percival	SP	Prehistoric pottery/Industrial residues	OA East
Cynthia Poole	CP	Fired clay/CBM	OA South
Elizabeth Popescu	EP	Post excavation manager and editor	OA East
Mairead Rutherford	MR	Pollen	OA North
Ruth Shaffrey	RS	Worked stone	OA South
Stephen Wadeson	SW	Samian pottery	OA East

Table 11: Project Team

9.2 Stages, Products and Tasks

9.2.1 Tasks relating to stratigraphic analysis will be decided following production of the Post Excavation Assessment, and following discussions with CAPCA and Aecom. Tasks relating to specialist analysis are listed below with the approximate number of days required.

Artefact/Ecofact	Initials	Task	No of days
Prehistoric Pottery	SP	• A report is required which fully describes fabric and forms present • Detailed comparison with contemporary assemblages from south Cambridge • No sherds require illustration.	1.5
Roman Pottery	AL	• Review the data and record selected groups in more detail. • Select pottery for illustration. • Pack and send the mortaria stamp to Kay Hartley • Analyse the pottery by fabric and form • Analyse the pottery within the context of the site • Analyse the local, regional and national significance of the assemblage • Write a full archive report that is suitable for publication in an edited form. • Respond to queries, check illustrations and edit text	12
Samian Pottery	SW	• Full analysis of the assemblage and completion of a full archive report • Preparation of a short catalogue of sherds for illustration • Die 10a, Regalis i, should be both illustrated and recorded by graphite rubbing • Identification of all mould decoration on vessels	3
Metalwork	CHD	• Archival catalogue entries should be completed for all materials. • Select items for illustration • Write brief report for publication	3.5
Worked bone	CHD	• archival catalogue entries should be updated • brief comment should be prepared for publication	1
Glass	CHD	• archival catalogue entries should be updated • brief comment should be prepared for publication	0.5
Environmental samples	RF	• Full analysis of waterlogged samples from well **160** • Full analysis of charred plant remains from 13 samples • Tabulation and report	19
Faunal Remains	CF	• Full cataloguing and analysis • Report writing	11
Pollen		• Analysis of sample 7 from well **160**. Sub-samples should be taken at regularly spaced 0.04m intervals (approximately 12 samples) to permit a full analysis	15

Table 12: Specialist analysis Task List

Appendix A. Finds Reports

A.1 Prehistoric Pottery

By Sarah Percival

Introduction and methodology

A.1.1 A total of 229 sherds weighing 1215g were collected from 35 excavated contexts. A small quantity of Late Bronze Age pottery dating to *c*. 1100 – 800 BC was recovered (98 sherds, 235g; Table 13). The majority of the assemblage is Later Iron Age, 350 BC – 1st century BC/AD (125 sherds, 974g). It is likely that at least some of this handmade pottery was in use alongside Early Roman forms described below (A. Lyons appendix A.2). Two sherds, 3g, are probably prehistoric but are otherwise not closely datable.

Spot Date	Context	Cut	Feature No.	Feature type	Feature date	Quantity	Weight (g)
Earlier Iron Age	241	**186**	**180**	Watering hole	Bronze Age	1	7
	430	**429**	**429**	Ditch terminus	Bronze Age	1	7
	627	**621**	**621**	Watering hole	Bronze Age	20	66
	798	**797**	**1033**	Tree throw	Bronze Age	3	12
	1037	**1033**	**1033**	Watering hole	Bronze Age	8	16
	1217	**1221**	**334**	Ditch	Bronze Age	1	3
	1449	**1449**	**1449**	Natural layer		1	8
	1461	**1460**	**334**	Ditch	Bronze Age	4	3
	1488	**1487**	**1487**	Natural	Bronze Age	61	109
	1555	**1552**	**1552**	Watering hole	Bronze Age	2	7
Later Iron Age	2	**1**	**1**	Pit	Early Roman	4	38
	5	**6**	**6**	Ditch	Early Roman	22	87
	41	**9**	**9**	Ditch	Early Roman	16	137
	12	**11**	**7**	Ditch	Early Roman	5	21
	16	**15**	**15**	Ditch	Early Roman	2	18
	20	**18**	**15**	Pit	Early Roman	1	8
	22	**-**	**22**	Layer	Early Roman	2	11
	32	**29**	**29**	Ditch	Early Roman	15	310
	34	**40**	**40**	Ditch	Early Roman	2	53
	62	**-**	**62**	Layer	Early Roman	3	54
	67	**68**	**68**	Ditch	Early Roman	1	13
	79	**80**	**6**	Ditch	Early Roman	22	59
	316	**317**	**172**	Cultivation row	Early Roman	2	10
	357	**358**	**358**	Cultivation row	Early Roman	1	4
	406	**407**	**351**	Ditch	Post-medieval	1	5
	410	**411**	**411**	Tree throw	Early Roman	2	6
	450	**449**	**449**	Cultivation row	Early Roman	1	12
	536	**535**	**535**	Structure	Early Roman	1	4
	538	**537**	**535**	Structure	Early Roman	1	26
	618	**619**	**619**	Pit	Early Roman	1	8
	888	**889**	**869**	Ditch	Early Roman	15	78
	1155	**1154**	**1154**	Cultivation row	Early Roman	1	3
	1175	**1176**	**780**	Ditch	Early Roman	1	6
	1211	**1210**	**192**	Ditch	Post-medieval	3	3
Not Closely Datable	822	**821**	**788**	Ditch	Early Roman	1	1
	960	**962**	**962**	Pit	Early Roman	1	2
Total						**229**	**1215**

Table 13: Quantity and weight of prehistoric pottery by feature

A.1.2 The pottery is fragmentary and no complete vessels were recovered. The sherds are mostly small and poorly preserved and the average sherd weight is 5g.

Methodology

A.1.3 The assemblage was analysed in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. Later Iron Age fabric descriptions follow Hill and Horne (2003). The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted. The pottery and archive are curated by OA East.

Late Bronze Age (c. 1100 – 800 BC)

A.1.4 The Late Bronze Age assemblage is characterised by the extensive use of flint-tempered fabrics, either within a sandy clay matrix or in combination with fossil shell (Table 14). No decorated or otherwise diagnostic sherds were present. It is possible that the flint-tempered Late Bronze Age pottery may be contemporary with the large assemblage of that period found at the nearby Addenbrooke's Hutchison Site (Evans *et al*. 2008).

Fabric	Description	Quantity	Weight (g)
F1	Common angular flint up to 2mm in sandy matrix	82	172
Fsh	Common angular flint up to 2mm; sparse shell and plate-like voids	20	66
Total		**102**	**238**

Table 14: Quantity and weight of flint-tempered pottery by fabric

A.1.5 Distribution of the flint-tempered sherds showed a strong preference for natural features, tree-throws and water holes (Table 13). Tree throws and natural features often contain pottery of Early Neolithic date (Evans *et al*. 1999) and Later Bronze Age pottery was recovered from 'working hollows' at The Hutchison Site, Addenbrooke's (Evans *et al*. 2008, 38). Early Iron Age sherds were also found in tree throws during excavations prior to the construction of Fordham Bypass (R. Mortimer pers. comm.).

Later Iron Age (350 BC to 1st century AD)

A.1.6 A total of 125 sherds weighing 974g are Later Iron Age. All of the sherds are handmade or slow wheel turned and include some forms, especially the large storage jars, which almost certainly continued in use alongside Roman wheel-made pottery.

A.1.7 Sixteen fabrics were identified (Table 15). Over 53% of the assemblage by weight is made of fabrics which contain grog. A further 45% are made of sandy fabrics including greywares and proto greywares (Hill and Horne 2003, 73). The remainder are shell-tempered.

A.1.8 The high proportion of grog-tempered fabrics is consistent with a late Iron Age date for the assemblage and is comparable with the late Iron Age and 'Romanizing' fabrics within the large contemporary assemblage from The Hutchison Site, Addenbrooke's (Evans *et al*. 2008, 64).

Fabric	Description	Quantity	Weight (g)
GW(GROG)	Greyware with grog	40	416
Q1	Iron Age sandy fabric with sparse quartz inclusions	23	158
MPGW	Micaceous proto greyware	12	94
GTW	Grog-tempered ware	20	93
SRW	Sandy reduced ware	1	34
SRW(FLINT)	Sandy reduced ware with flint	6	33
SGW(FLINT)(OX SURFACES)	Sandy reduced ware with flint and oxidised surfaces	1	32
PGW	Proto greyware	4	26
SGW(OX SURFACES)	Sandy greyware with oxidised surfaces	5	19
QG	Iron Age sandy fabric with sparse quartz inclusions	3	17
QS	Iron Age sandy fabric with sparse quartz inclusions	2	17
STW	Shell-tempered ware	4	17
SGW(GROG)	Sandy greyware with grog	1	6
SGW(SANDW)	Sandy greyware sandwich ware	1	5
Q1 OX	Iron Age sandy fabric with sparse quartz inclusions	1	4
SGW(Q)	Sandy greyware with quartz	1	3
Total		**125**	**974**

Table 15: Quantity and weight of Later Iron Age pottery by fabric

A.1.9 Rims are present from eight vessels. These include two cordoned bowls, one with a raised bead on the shoulder in sandy fabric (cf. Evans 2008, fig.2.28, 2); two grog-tempered cordoned jars, a combed globular jar in sandy fabric (Evans 2008, fig.2.29, 2), an undiagnostic bowl and a large storage jar rim plus body sherds from further storage vessels, in sandy fabrics with scored surfaces or grog tempered fabrics with combed surfaces.

A.1.10 In contrast to the flint-tempered sherds the Later Iron Age assemblage was, with the exception of two small sherds from tree-throw **411**, entirely recovered from ditches, agricultural strips and pits associated with land division and occupation (Table 13). The small size and poor condition of the sherds suggests that the assemblage was residual and deposited accidentally. There are no large concentrations of material to suggest deliberate dumping in the ditches or pits.

Discussion

A.1.11 The flint-tempered sherds are probably of post Deverel-Rimbury date, perhaps broadly contemporary with the Later Bronze Age assemblage from the Hutchison Site, Addenbrooke's (Evans *et al*. 2008). All of the Late Bronze Age pottery came from Middle Bronze Age features including two waterholes that have provided radiocarbon dates. The primary fill of waterhole **180** was radiocarbon dated to 1500 – 1319 cal. BC (95% confidence; 3152 ± 29; SUERC-58618), while the primary fill of waterhole **1552** was radiocarbon dated to 1374 – 1121 cal. BC (95% confidence; 2992 ± 29; SUERC-58619).

A.1.12 The Later Iron Age pottery is also contemporary with pottery found at Addenbrooke's, the majority dating to the very end of the 1st century BC and continuing into the 1st

century AD and forming a contiguous assemblage with the fully Romanized pottery also found at the site.

Statement of Research Potential

A.1.13 The small assemblage forms an interesting addition to the numerous pottery finds from around south Cambridge. The group should be considered alongside the Roman assemblage and is comparable with contemporary late 1st century BC to early 1st century AD pottery from Addenbrooke's (Evans *et al.* 2008) and Clay Farm (Brudenell pers. comm.) which span the period of change from the mostly sandy, plain, slack-shouldered jar forms of the mid Iron Age to the adoption of a limited number of hand made 'Romanizing' cordoned bowl and jar forms along with scored and combed storage jars in sandy and grog-tempered fabrics in the latest Iron Age.

Further Work and Methods Statement

A.1.14 A report is required which fully describes the fabric and forms present. This should include a discussion considering deposition and phasing plus a detailed comparison with contemporary assemblages from south Cambridge.

A.1.15 No sherds require illustration.

A.1.16 Analysis and writing will take a maximum of 1 day.

A.2 Romano-British Pottery

By Alice Lyons

Summary

A.2.1 A substantial group of abraded early to mid Roman pottery was recorded as part of this assessment. The pottery mostly comprised locally produced utilitarian coarse ware jar/bowl forms, but imported Gaulish fine tablewares and Spanish olive oil amphora were also found. This material is typical of successful rural settlement within this time frame and area. It adds, therefore, to a growing corpus of pottery available to study.

Introduction

A.2.2 A total of 3747 sherds, weighing 35420g, of early-to-mid Roman pottery was recovered during this project. The pottery was recovered from 256 deposits, the majority within ditches (61% by weight) and pits (26%), although small amounts were recovered from other features (Table 16). The pottery is generally in poor condition with an average size of only *c*. 9g, few original surfaces or use residues have survived.

Feature	Sherd count	Weight (g)	Weight (%)
Ditch	2600	21751	61.42
Pit	645	9354	26.41
Hollow	138	1230	3.47
Unassigned	112	1119	3.16
Structure	86	639	1.80
Gully	47	448	1.26
Spread/ spread?	27	324	0.91
Cultivation row	38	149	0.42
Tree throw	3	115	0.32
Waterhole	22	105	0.30
Natural	10	83	0.23
Post-hole	10	40	0.11
Metalled surface	1	31	0.09
Furrow	5	14	0.04
Hedgerow	2	9	0.03
Stake hole	1	9	0.03
Grand Total	**3747**	**35420**	100.**00**

Table 16: The features from which Roman pottery was recovered, listed in descending order of weight(%).

Methodology

A.2.3 The assemblage was assessed in accordance with the guidelines laid down by the Study Group for Roman Pottery (Darling 1994; Willis 2004). The total assemblage was studied and a preliminary catalogue was prepared.

A.2.4 The sherds were examined using a magnifying lamp (x10 magnification) and were divided into fabric groups (or families) 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 recorded. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted.

A.2.5 The pottery is presently curated by OA East

The Fabrics and Forms

A.2.6 A total of twenty broad fabric families were identified during the assessment of this assemblage (Table 17).

Fabric Family	Abbreviation	Sherd count	Weight (g)	Weight (%)
Sandy grey ware	SGW	959	7665	21.63
Horningsea coarse wares	HORN	429	7041	19.88
Sandy grey ware (pre-industrialised)	SGW(PROTO)	816	6818	19.25
Sandy grey ware, with additional quartz temper	SGW(Q)	590	4921	13.88
Sandy oxidised ware, with additional quartz temper	SOW(Q)	283	2308	6.52
Grey ware, tempered with common grog inclusions	GW(GROG)	113	1499	4.23
Sandy oxidised ware	SOW	162	1062	3.00
Samian	SAM	116	984	2.78
Spanish globular olive oil amphora	BAT AM	6	746	2.11
Sandy grey ware with mica inclusions as a natural component of the clay	SGW(MICA)	44	362	1.02
Shell tempered ware	STW	29	332	0.94
Mancetter Hartshill white ware	MANCHH	3	312	0.88
Nene Valley colour coat	NVCC	37	296	0.84
Pink grog tempered ware	PGROG	7	290	0.82
Fine sandy grey ware	SGW(FINE)	56	260	0.73
Sandy red ware	SREDW	60	348	0.99
Fine grey ware	GW(FINE)	24	128	0.36
Shell tempered ware, with grog inclusions	STW(GROG)	4	27	0.08
Miscellaneous Colour coat	COLCC	8	20	0.06
Trier Black Slipped Ware	MOS BS	1	1	0.00
Total		**3747**	**35420**	100.**00**

Table 17: The Fabric families, listed in descending order of weight (%)

Coarsewares

A.2.7 The earliest pottery within this assemblage comprised a small group of wheel made grey ware jar/bowl forms, including some carinated examples, the fabric of which were tempered with common grog (crushed pot) inclusions (GW(GROG)). This type of pottery was introduced to south-east Britain either side of the Roman conquest (AD 43) in the 1st century AD (Thompson 1982). These vessels were well made often with cordons on their necks and with burnished surfaces, while the lack of use residues (such as soot or lime) may indicate they were not used for cooking.

A.2.8 Probably contemporary with this grog tempered material described above were a larger group of Early Roman locally produced Sandy grey wares (SGW(PROTO)). The fabric of these early Roman vessels was poorly mixed with common sand inclusions, also sparse flint and grog. Moreover the firing process was not consistent with the result that many vessels have a 'sandwiched' appearance (a red core with a grey to off-white surface). This fabric was used to produce a range of jar and storage jar forms many of which were decorated with fine combed grooved on the body of the vessel. The only

complete vessel, found within ditch **68** (fill 67), north of the cycleway, was an undecorated wide mouthed jar made in a sand and flint tempered SGW(PROTO) fabric (Plate 7). No use residues were recorded on the surface of these pots.

A.2.9 Also found in significant quantities was a locally produced sandy grey ware fabric that had extra sand (or quartz) inclusions added in the mix of the clay (SGW(Q)). This has the result of producing a particularly hard wearing fabric with a large surface area that would have been more tolerant of heat. This fabric was used to produce a limited range of jar/bowl forms, several of which had soot residues on the rim. The pots were not highly decorated, but cordoned vessels – referencing their Iron Age predecessors – were frequent (Thompson 1982), as were fine combed grooves on the vessel body. A very similar fabric – but fired in an oxidising atmosphere (SOW(Q)) was also relatively well represented and produced in a similar range of forms.

A.2.10 The most common fabric found during this assessment was a locally mass produced utilitarian Sandy grey ware fabric (SGW). This ware was produced in a hard fired blue-grey fabric with few inclusions or temper and was used to produce a limited range of jar/bowl forms with minimal decoration and common traces of soot residue. This fabric is chronologically later than the Sandy grey ware variants already described above and was in use form the early-to-mid 2nd century, remaining in use until the end of the Roman era. The examples found here, however, are of mid 2nd to early 3rd century type and include distinctive forms such as the bi-fid or pulley rim. Several local Sandy grey ware industries are known, such as the kilns recorded nearby at the Addenbrooke's Hutchison Site (Webley with Anderson 2008), but it is impossible to assign this pottery to any one source at this time. Similar to SGW are a small number of white to pink/red sherds (SOW and SREDW), which were fired in an oxidising atmosphere and produced in a similar range of vessels, although it is only in these lighter coloured wares that flagons were produced.

A.2.11 Also relatively common within this assemblage are Sandy grey ware vessels produced from clay containing a high level of silver mica content, present as a natural component (SGW(MICA)). This clay was used to produce a range of jar/bowl forms, also finer vessels including poppy headed beakers (Tyers 1996, 141, fig 152, no 16). Micaceous clay such as this is known to have originated from the Waveney Valley in north Suffolk (Tomber and Dore 1998, 184).

A.2.12 A rarer utilitarian coarse ware was manufactured from clay containing fossilised shell fragments (STW). In addition a few sherds also used grog as a temper (STW(GROG)). This material is consistent with local production possibly at Earith on the eastern Fen-edge (Anderson 2013, 311) or another unknown local source.

Finewares

A.2.13 Imported finewares comprise fine red slipped table wares, referred to as samian, from Gaul, which found their way to this site between the mid 1st and 2nd centuries. The assemblage included mould impressed decorated bowls (Dr37), also plain dish (Dr18/31) and cup (Dr33) forms. The majority of samian originated from central Gaul during the 2nd century with a small amount from southern (earlier) and eastern (later) factories. Some of this material was stamped by the makers who produced it and indeed it is noteworthy that one new makers' stamp was recorded. The samian ware is reported on in more detail by Stephen Wadeson below (appendix A.3).

A.2.14 In addition to samian a small amount of fine grey ware pottery was recovered, some of which may have been also produced in northern Gaul (Tyers 1996, 154-5), however a

more local source cannot be discounted at this time. A single sherd of Trier Black slipped ware from a fine beaker was also recovered.

A.2.15 The remaining finewares were all produced domestically (within Roman Britain) with the majority produced within the Lower Nene Valley (Perrin 1999; Tyers 1996, 173-175; Tomber and Dore 1998, 118), mostly consisting of beaker fragments decorated with rouletted motifs and barbotine scale. These wares were produced between the mid 2nd and 3rd centuries AD. Other bowl and jar pieces were found in small numbers.

A.2.16 A very small number of miscellaneous red fine wares, some of which were colour coated, were also recorded during assessment. They may originate from the Colchester industry (Tyers 1996, 167-168) but more analysis is needed to assign them to source.

Specialist wares

A.2.17 The majority of specialist wares within this group of pottery comprise DR20 amphora, large storage jars from southern Spain, used to import olive oil (Tyers 1996, 87-89). Although imported between the end of the Iron Age and the mid 3rd century AD, most arrived within this area in the 2nd century AD.

A.2.18 In addition fragments of the large storage jars produced around Horningsea in Cambridgeshire were found (Tomber and Dore 1998, 116; Evans 1991; Evans and Macaulay fth). These distinctive vessels were commonly distributed between the 2nd and 3rd centuries AD. It is also worthy of note that a small number of pinkish grog tempered storage jar fragments (PGROG) originating from the Milton Keynes area were also found which date from the 1st and 2nd centuries AD (Marney 1989, fabric 2, 175-5). It is not known if these large vessels were traded for their ceramic worth or for their contents.

A.2.19 Mortaria (gritted mixing bowls) (Tyers 1996 116-117), were also found but only in very small numbers. Several Sandy oxidised bead and flange examples from an unknown source were recorded; a partial makers stamp survived on one of these examples, which may lead to closer identification. In addition a small number of mortaria fragments produced in the Mancetter-Hartshill area of the British Midlands were also identified which could potentially have been traded into the region.

Statement of potential

A.2.20 The Romano-British pottery assemblage consists mostly of domestically produced utilitarian coarse wares, although some imported and traded specialist wares are also present. In addition it can be said that this is a relatively large and well-recorded group of early to mid Roman pottery, recovered from an area of rich archaeological remains that have been intensively excavated and analysed (Evans *et al* 2008; Phillips and Mortimer 2012). It can be confidently stated therefore, that this ceramic material is typical of the area and chronological period (Lyons 2012).

A.2.21 So although the potential of this assemblage is limited by its poor condition further detailed analysis of the fabrics and forms, and placing them firmly within the context of their archaeological data, will maximise the possible extraction of useful data. A limited amount of additional work will enable this ceramic assemblage to contribute to the interpretation of the site within its local and regional context.

Recommendations for future work and associated method statement

A.2.22 Task 1: The assessment catalogue will be reviewed and where material has been identified as important to the interpretation of the site it will be looked at in more detail in accordance with the guidelines laid down by the Study Group for Roman Pottery (Darling 2004; Willis 2004). These sherds will be examined using a hand lens (x20 magnification) and will be divided into fabric groups defined on the basis of inclusion types present. The sherds will be counted and weighed to the nearest whole gram. Evidence for use, decoration and abrasion will also be noted. Where ever possible the local fabrics and forms will be recorded using published regional examples (Webley with Anderson 2008; Lyons 2012), to minimize republication of existing data. For imported fabric types the National fabric series (Tomber and Dore 1996) will be referenced.

A.2.23 Task 2: Relevant sherds will be selected for illustration; priority will be given to material that has not been published elsewhere.

A.2.24 Task 3: The stamped mortaria will be sent to the relevant specialist (after it has been drawn and photographed).

A.2.25 Tasks 4, 5 and 6: When all the preliminary analysis of the pottery fabrics and forms have been completed further analysis of the pottery within the context of the site will take place. The pottery will be analysed by phase, by feature group and placed in its local, regional and national setting.

A.2.26 Task 7: An archive report will be written presenting the results of this work, which will be a useful interpretative tool for the Project Officer and will also be suitable for publication in an edited format.

A.2.27 Task 8: The publication report will be edited and any queries or changes undertaken by the author. The illustrations will also be checked at this time.

Task	Description	Estimated time
1	Review the data and record selected groups in more detail.	1 day
2	Select pottery for illustration.	0.5 day
3	Pack and send the mortaria stamp to Kay Hartley	1 hour
4	Analyse the pottery by fabric and form	1 day
5	Analyse the pottery within the context of the site: by phase, recording changes in the fabrics and forms used through time by group, observing any patterns in pottery use associated with.	2 days
6	Analyse the local, regional and national significance of the assemblage	0.5 day
7	Write a full archive report that is suitable for publication in an edited form.	4 days
8	Respond to queries, check illustrations and edit text	0.5 day
	Total	9.75 days

Table 18: Romano-British pottery task list for analysis

A.3 Samian pottery

By Stephen Wadeson

Introduction and methodology

A.3.1 A small assemblage of samian pottery, totalling 116 sherds, weighing 0.984kg with an estimated vessel equivalent (EVE) of 1.81 and representing a maximum of 87 vessels were recovered during excavations. Dating from the 1st century AD, the majority of the assemblage (*c.* 94% by weight) is from Central Gaul with smaller quantities recovered from both South Gaulish and East Gaulish production centres. Quantities by fabric source in chronological order are shown in Table 19.

A.3.1 The bulk of the assemblage was retrieved from ditches (*c*. 62% by weight) with an additional *c*. 18% by weight recovered from pits.

Fabric	Quantity	Quantity (%)	Weight (Kg)	Weight (%)	EVE
South Gaul	11	9.5	0.038	3.9	0.09
Central Gaul (Les Martres)	8	6.9	0.077	7.8	0.00
Central Gaul (Lezoux)	92	79.3	0.862	87.6	1.72
East Gaul	5	4.3	0.007	0.7	0.00
Total	**116**	**100.0**	**0.984**	**100.0**	**1.81**

Table 19: Distribution of samian fabrics in chronological order.

Condition

A.3.2 Much of the material is fragmentary and is moderately to heavily abraded with an average sherd weight of 8.4g for the whole assemblage. This suggests that the majority of the sherds were not located at their primary site of deposition and that most of the assemblage is of a residual nature. The condition of the pottery is attributed not only to the action of the local clay soils but also post depositional disturbance such as middening and/or manuring as part of waste management during the Roman and post Roman periods. The condition of the assemblage is typical of a domestic group from a rural assemblage.

Methodology

A.3.3 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 catalogue was prepared. The sherds were examined using a magnifying lens (x20 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 (South Gaulish = SGSAM). Vessel form was also recorded.

A.3.4 All sherds have been counted, classified and weighed to the nearest whole gram. Decorated and stamped sherds were noted as was abrasion and a spot date has been provided for each individual sherd and context. The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

South Gaulish Samian

A.3.5 The earliest material recovered is South Gaulish from La Graufesenque (Tomber and Dore 1998, 28) accounting for *c*. 4% (by weight) of the total assemblage and is represented by a maximum of 9 vessels with an EVE of 0.09. The majority of the South Gaulish assemblage (*c*. 92 % by weight) was recovered from ditches associated with settlement activity.

A.3.6 A limited quantity of plain ware forms were identified, the majority of which were of an indeterminate type due to their fragmentary condition. Those sherds which could be assigned to a specific form include single examples of the platter Drag. 18, cup Drag. 42, and dish Drag. 18/31.

A.3.7 Decorated vessels comprise a single, heavily abraded sherd, SF 98 (fill 986 in ditch **886**), from a bowl of indeterminate form and as such only a broad date of *c*. AD70-110 can be assigned. The decoration consists of the hind quarters of an unspecific animal facing right. The limited number of sherds identified within the assemblage are typical of the mid to late 1st century with forms typically associated to the pre Flavian period noticeable by their absence. No stamped sherds were identified.

Central Gaulish Samian

A.3.8 The majority of the samian identified is Central Gaulish (Tomber and Dore 1998, 30-33) and is represented by a maximum of 74 vessels (1.72 EVE), accounting for *c*. 94% (by weight) of the total assemblage. Attributed to the kilns of both Les Martres-de-Veyre and Lezoux the assemblage dates to the second century AD. This total includes three examples of vessels with a partial or complete makers' stamp.

Les Martres-de-Veyre

A.3.9 The earliest material recovered is Trajanic (100-120AD) from Les Martres-de-Veyre (Tomber and Dore 1998, 30) and is represented by a maximum of 7 vessels (0 EVE) accounting for 7.8% by weight of the total assemblage, compared with 8.2% (by weight) of all Central Gaulish products. Forms identified include dish forms Drag. 18/31 and 18/31/18/31R, cup forms Drag. 27 and Drag. 33, and a single fragment from a flanged bowl, most probably a Curle 11.

A.3.10 Decorated vessels comprise a single sherd from a Drag. 37 bowl, (SF 92) recovered from the fill of pit **790** in the east of the site. The sherd exhibits little evidence of abrasion and includes a single, drilled hole in the upper margin, (see below, A.3.20). Part of a freestyle design, the sherd has retained enough of the overall design to tentatively associate the sherd with the work of the Trajanic potter *Drusus* i (X-3), AD135-160. Although only a small part of the design can be seen, the use of the replacement ovolo C294 (Rogers 1974, p64; Stanfield & Simpson 1958, pl 16, 195), and what is most likely the forelegs of Os.241 (Oswald, 1936), on horseback (as listed in Rogers 1999, 120) would suggest a style consistent with the work produced by *Drusus* i (X-3) at Les Martres during this period.

Lezoux

A.3.11 The majority of the Central Gaulish samian (*c*. 88% by weight of the total assemblage) was produced at Lezoux (Tomber and Dore 1998, 32) and dates to the Hadrianic and/or Antonine periods (*c*. AD120-200). Represented by a maximum of 67 vessels (1.72 EVE), of these three examples retain partial makers' stamps on their basal interiors, which can be assigned to a specific potter. (See Catalogue of samian potters' Stamps).

A.3.12 Early plain ware forms date from the Hadrianic or Early Antonine period, indicated by the presence of forms which went out of production by the middle of the second century (AD150/160). Found in limited quantities vessels include cup form Drag. 27 as well as dish forms Drag. 18/31 and Drag. 18/31R. The majority of the plain wares from Lezoux however are dominated by forms typically associated to the Antonine period although in a limited range of forms. These include cup form Drag. 33, representing a maximum of 16 vessels (*c*. 24% of the MNV of the Lezoux assemblage), the form Drag. 31, the flanged bowls type Drag. 38 and several decorated bowls by *Cinnamus* ii. Vessels dating from the second half of the 2nd century are poorly represented with a small number of the form Drag. 31R bowl, typically dated from *c*. AD160, recovered in the assemblage.

A.3.13 A further 19 plain ware sherds, representing a maximum of 17 vessels, were too small and abraded for accurate identification and are not closely datable. As a result only a broad date of between *c*. AD120-200 can be assigned.

A.3.14 Stamped sherds from three plain ware vessels were identified. The earliest of the stamped vessels was retrieved from the fill of ditch **785** (cut **971**) and consists of a partial stamp, reading [LVPP]AF (Hartley and Dickinson Vol 5, 2009, pp137-138). Located on the basal interior of a Drag. 33 cup, the stamp can be associated with the potter *Luppa* ii (Stamp 1), who was producing vessels during the late Hadrianic to early Antonine period (AD130-155). The second of the three potters' stamp identified, recovered from ditch **765** (cut **808**), consisted of a partial stamp located on the inner base of a Drag. 31 bowl. Reading MA[.SV].ETIc, (Hartley and Dickinson Vol 5, 2009, pp251-253) this specific die is attributed to the potter *Mansuetus* ii (Stamp 2) who's work is dated to the early to mid Antonine period, (AD150-175).

A.3.15 Recovered from the fill of ditch **785** (cut **785** close to the eastern baulk), the third example of a stamped vessel recorded is the most interesting of the three and can be associated with work of the potter *Regalis* i, (Hartley and Dickinson Vol 7, 2011, pp335-337), who was producing vessels at Lezoux between AD155-185, (mid to late Antonine). Located on the basal interior of a Drag. 33 cup the stamp reads REG[ALIS] (Stamp 3). This stamp is of particular interest as the die used to produce this specific stamp is unknown and has not been identified or recorded previously (Brenda Dickinson, pers comm.). As such it has been assigned the new die number of 10a by Brenda Dickinson and has been added to the list of dies used by *Regalis* i in the index of Names on Terra Sigillata.

A.3.16 In addition, sherds from a maximum of eight decorated bowls were recorded and include sherds from a maximum of seven Drag. 37 hemispherical bowls of which three vessels can be tentatively attributed to a specific potter(s) style. The first of the three can been tentatively associated to the style of *Libertus* ii (AD105-130) and/or *Butrio* (AD115-145). This is due to the use of ovolo B213 (Rogers 1974, 47), an oval with central groove alternating with a short, thin, unattached tongue; *Libertus* ii, (Stanfield & Simpson 1958, pl53, 618), *Butrio*; (Stanfield & Simpson 1958, pl58, 661). Within the main area of decoration and located between two festoons, a single figure of a caryatid, Os.1199 (Oswald, 1936) can be identified and was used by both *Libertus* ii (Rogers 1999, pl63, 8, 12, 18 & pl64, 22) and *Butrio*.

A.3.17 The remaining two examples of the Drag. 37 bowl have both tentatively been attributed with the early to mid Antonine potter *Cinnamus* (c. AD135-180), one of the most prolific potters producing vessels at Lezoux during this period. This includes a single decorated sherd recovered from enclosure ditch **1077** (cut **1203**; SF 93). Decorated using a continuous 'free-style' design the figure types identified in the design are all used by

and are consistent with work attributed to *Cinnamus* ii. Figure types used in the design include Os.696a (Oswald, 1936), Pigmy facing right (Rogers 1999, pl31, 34 &41), Os.1627 (*ibid*), Bear galloping to left (Rogers 1999, pl29, 2, 4 & 5) and Os.1450 (*ibid*), Lion galloping to left (Rogers 1999, pl31, 36 & pl34, 73) (Stanfield & Simpson 1958, pl163, 71 & 73). In addition what are possibly the forelegs of Os.1720 (*ibid*), Deer galloping to right (Rogers 1999, pl32, 45 & pl33, 64) (Stanfield & Simpson 1958, pl163, 66, 70 & 74) can be identified and is also associated with work attributed to *Cinnamus* ii.

A.3.18 The remaining decorated sherds are too fragmented and abraded to be certain of their provenance.

East Gaulish Samian

A.3.19 Samian from East Gaulish production centres (Tomber and Dore 1998, 34-41) is rare and accounts for just 0.7% (by weight) of the total assemblage, represented by a maximum of 4 vessels. Dating broadly from the late 2nd to mid 3rd century (*c*. AD150-250) a single rim sherd from a Drag. 33 cup and a further fragment of rim from a Dish/Bowl of indeterminate form were identified. No stamped or decorated sherds were recovered.

Evidence of use, repair and re-use

A.3.20 Evidence of extreme wear was recorded mostly on footrings with a further four vessels having heavily worn rims and one sherd worn almost flat, possibly from secondary use. A further three examples show evidence of wear on their internal surfaces from primary use and were identified on both decorated (Drag. 37) and plain ware (Drag. 38) bowls. A single decorated sherd from a Drag. 37 bowl in the style of *Drusus* i (X-3) (AD100-125), (fill 792 in pit **790**; SF 92) is the only example exhibiting evidence of having been repaired in antiquity and consists of a single, post firing, drilled hole in the upper margin below the rim. The vessel was repaired using lead rivet(s) of the round holed variety. Decorated bowls are the most commonly repaired form (Willis 2005). In addition a single Drag. 31 bowl (Stamp 2) shows evidence of secondary use having been reworked; trimmed at the junction of the lower wall and base, most likely after breakage.

Discussion

A.3.21 The chronology of the assemblage indicates no sherds are earlier tahn AD 70 (Flavian period). The majority of the samian is Central Gaulish (*c*. 94% by weight), primarily from Lezoux (*c*. 88% by weight). The relatively low quantities of Trajanic material identified is due to the well documented Trajanic 'gap' at a time when samian supply to Britain was limited.

A.3.22 The modest quantities of late first and early second century material from both La Graufesenque and Les Martres-de-Veyre, compared with those from Lezoux, suggests a marked upsurge of activity in the Hadrianic period, when samian from Lezoux first began to arrive in Britain in significant quantities. The supply of samian to the site continues through to the end of the second century although in limited quantities as indicated by the low numbers of plain ware sherds in the assemblage of forms typically associated to the late Antonine period. Later mid 2nd to mid 3rd century East Gaulish products are limited, a trend which is seen on other sites of this period.

A.3.23 Plain ware forms account for the largest proportion of the assemblage, consisting primarily of cups, dishes and bowls. Decorated wares account for *c*. 21% of the material recovered and is consistent with the suggested 20% average in assemblages recovered from rural sites (Willis 2005, Ch. 7.2.7). This relationship between plain wares and decorated vessels is typical of material recovered from low order settlements in the region (Evans 2003, 105) and is consistent with the low frequency of samian recovered on many rural sites (Willis 2003, 2005).

Catalogue of samian potters' Stamps

A.3.24 In total three stamps were identified. Each entry lists potter, die, form, reading, pottery of origin, area, date, feature number, small find number.

1 *Luppa* ii, Die1a. Drag. 33 [LVPP]AF. Lezoux. c. AD135-155. Fill (970), cut **971**, ditch **785**. SF 96

2 *Mansuetus* ii, Die 2a. Drag. 31 MA[.SV].ETIc Lezoux. c. AD150-175. Fill (807), cut **808**, ditch **765**. SF 37

3 *Regalis* i, Die 10a*. Drag. 33 REG[ALIS] Lezoux. c. AD155-185. Fill (782), cut **785**, ditch **785**. SF 110

*NEW DIE FOR THIS POTTER, FIRST RECORDED

Statement of Potential

A.3.25 Beyond assisting in phasing features on the site, the assemblage is of limited potential. The presence of a previously unknown and unrecorded die, associated with *Regalis* i is significant and can be added to the list of dies used by *Regalis* i in the index of Names on Terra Sigillata.

Recommendations for further work

A.3.26 Full analysis of the assemblage and the completion of a full archive report suitable for publication in an edited format.

A.3.27 Identification of all mould decoration on vessels and assign where possible to a specific potters style and integration of the identifications into the report and catalogue

A.3.28 The preparation of a short catalogue of sherds for illustration showing a selection of decorative schemes identified including any sherds of special interest, specifically Die 10a, *Regalis* i, which should be both illustrated and recorded by graphite rubbing for use in the final report.

A.3.29 All mould decorated sherds should be recorded by graphite rubbing and retained as part of the final site archive.

A.3.30 The pottery should be compared more fully to the range of published sites that have been excavated in the area and placed in its regional context.

A.4 Post-Roman pottery

By Carole Fletcher

Introduction and methodology

A.4.1 Archaeological works produced a pottery assemblage of 32 sherds, weighing 689g (Table 20). The assemblage spans the mid 13th to the 19th century. The condition of the overall assemblage is moderately abraded and the mean sherd weight is moderate at approximately 22g. The pottery was recovered mainly from furrows and ditches.

Methodology

A.4.2 The Medieval Pottery Research Group (MPRG) A *guide to the classification of medieval ceramic forms* (MPRG, 1998) and *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics* (MPRG, 2001) act as a standard.

A.4.3 Recording was carried out using OA East's in-house system based on that previously used at the Museum of London. Fabric classification has been carried out for all previously described medieval and post-medieval types using where appropriate Cambridgeshire's type series (Spoerry forthcoming). All sherds have been counted, classified and weighed on a context-by-context basis. The assemblage is recorded in the summary catalogue. The pottery and archive are curated by Oxford Archaeology East until formal deposition.

Assemblage

A.4.4 Early Roman ditch or channel **157** contained two sherds of mid 18th-19th century Creamware and two sherds of Staffordshire-type Slipware. Cultivation bed **331** produced a single medieval sherd, a fragment of a handle from a Mill Green Fineware jug.

A.4.5 Furrows **313**, **494**, **528** and **1442** all produced post-medieval sherds, the majority of which date from the mid 16th to the end of the 18th century including the foot from a pipkin.

A.4.6 Post-medieval ditch **1042** produced a sherd from a Hedingham Fineware jug, this is the only ditch to produce medieval material, although the sherd weighed only 1g and is most likely residual.

A.4.7 Early Roman ditches **776** and **786**, post-medieval ditch **474** and modern ditch **1425** produced sherds from post-medieval Redware bowls dating from the mid 16th-end of the 18th century. Early Roman structure **541** contained a single sherd of post-medieval Black Glazed ware, but probably derived from the furrow which truncated the structure.

A.4.8 Early Roman ditch **785**, post-medieval ditches **204**, **336** and **1103**, and modern ditch **400** produced a few sherds of Post-medieval Redware, however all also produced early modern material including Staffordshire White Dipped ware dating to the 18th century, and Creamware or Pearlware which dates to the late 18th-early 19th century.

A.4.9 The assemblage is domestic in nature, representing table and food preparation vessels. The few medieval sherds present suggest the area of excavation is some distance from the medieval settlement where the pottery originated. The post-medieval sherds and early modern material may indicate later manuring but the low levels of deposition suggest the domestic occupation from where they were derived is some distance from the area of excavation.

A.4.1 No further work is recommended.

Context	Cut No.	Feature No.	Fabric	Basic Form	Sherd Count	Weight (kg)	Pottery Date Range
159	**158**	**157**	Creamware	Bowl body sherd	2	0.031	Mid C18-early C19
			Staffordshire-type Slipware	Bowl base and body sherd	2	0.241	Mid C18-C19
312	**313**	**313**	Post-medieval Black-Glazed ware	Drinking vessel base sherd	2	0.033	Late C16-end C17
330	**331**	**331**	Mill Green Fineware	Jug strap handle	1	0.045	C13-end C14
392	**393**	**204**	Staffordshire-type Slipware	Bowl body sherd	1	0.028	Mid C18-C19
401	**400**	**400**	Post-medieval Redware	Bowl body sherd	2	0.050	Mid C16-end C18
			Staffordshire White Dipped ware	Body sherd	1	0.004	C18
497	**496**	**494**	Post-medieval Redware	Jar body sherd	1	0.015	Mid C16-end C18
			Post-medieval Redware	Pipkin foot	1	0.020	Mid C16-end C18
			Raeren (German stoneware)	Body sherd	1	0.006	1480-1610
527	**528**	**528**	Post-medieval Redware	Body sherd	1	0.004	Mid C16-end C18
542	**541**	**541**	Post-medieval Black Glazed ware	Body sherd	1	0.001	Late C16-end C17
970	**971**	**785**	Creamware	Bowl or late rim sherd	1	0.008	Mid C18-early C19
994	**993**	**776**	Post-medieval Redware	Bowl rim sherd	1	0.074	Mid C16-end C18
1043	**1042**	**1042**	Hedingham Fineware	Jug body sherd	1	0.001	C13-end C14
1104	**1103**	**1103**	Pearlware polychrome-painted decoration	Saucer rim sherd	1	0.003	Late C18-early C19
			Pearlware polychrome-painted decoration	Body sherd	1	0.001	Late C18-early C19
			Post-medieval Redware	Bowl base sherd	1	0.032	Mid C16-end C18
1144	**1143**	**786**	Post-medieval Redware	Bowl body sherd	2	0.005	Mid C16-end C18
1305	**1304**	**336**	Creamware	Body sherd	1	0.001	Mid C18-early C19
			Staffordshire White Dipped ware	Rim sherd	1	0.004	C18

Context	Cut No.	Feature No.	Fabric	Basic Form	Sherd Count	Weight (kg)	Pottery Date Range
1421	**1420**	**1103**	English Stoneware	Body sherd	1	0.028	C18-end C19
1434	**1425**	**1425**	Post-medieval Redware	Bowl rim sherd	2	0.038	Mid C16-end C18
1463	**1462**	**474**	Post-medieval Redware	Bowl base sherd	1	0.012	Mid C16-end C18
1515	**1516**	**1442**	Post-medieval Redware	Jar body sherd	1	0.003	Mid C16-end C18t
			Post-medieval Redware	Body sherd	1	0.001	Mid C16-end C18
Total					**32**	**0.689**	

Table 20: Post-Roman pottery catalogue

A.5 Lithics

By Barry Bishop

Introduction and methodology

A.5.1 The excavations resulted in the recovery of 74 struck flints and a substantial quantity of unworked burnt flint (Table 21). This report describes the assemblages and discusses their archaeological significance. It should be read in conjunction with the catalogue which provides further details of each piece, including contextual origins, raw material, condition and, where possible, suggests a possible date of manufacture (Table 22). All metrical descriptions follow the methodology of Saville (1980).

Type	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Total Struck	Burnt Stone (no.)	Burnt stone (wt:g)
No.	14	32	3	5	1	11	3	1	1	3	74	207	3998
%	*18.9*	*43.2*	*4.1*	*6.8*	*1.3*	*14.9*	*4.1*	*1.3*	*1.3*	*4.1*	*100*		

Table 21: Quantification of Lithic Material from the Biomedical Campus

Burnt Stone

A.5.2 Just under 4kg of burnt stone was recovered. Nearly all of this came from a single feature, Bronze Age pit **1428**, with much smaller quantities coming from six other features (Table 22). The burnt stone consists almost entirely of flint with a few pieces of siliceous sandstone also present. The latter may possibly be quernstone fragments but no worked surfaces were seen and they are more likely to have been obtained as natural clasts from the alluvially reworked glacial tills, such as those present close to the site and which were probably the source of the flint. All of the stone had been burnt to a very high degree, causing it to become heavily 'fire-crazed' and grey-white in colour. The smaller assemblages of burnt flint may have originated as background waste from hearth use. However, the quantities present and the uniformity and intensity of burning of the stone from pit **1428** is more suggestive of purposeful or systematic production, along with its deliberate disposal within the feature. The purposes that lie behind both the creation of burnt stone and its deposition remain enigmatic and a number of possible explanations have been forwarded to account for its presence. Perhaps the most favoured see it as being during cooking activities; the high quantities found in some places suggesting communal efforts, perhaps associated with feasting or ceremonial practices (e.g. Layard 1922; O'Kelly 1954). Other explanations regard it as being used to parch corn, a means of aiding its preservation (e.g. Cunliffe 1974; Cunliffe 1976; Smith 1977), and a variety of industrial processes, such as leather making, wool processing or brewing, have also been forwarded to account for its production (e.g. Barfield and Hodder 1987; Barfield 1991; Jeffery 1991; Quinn and Moore 2007; Bishop 2012).

Struck Flint

A.5.3 The struck flint was made from good knapping-quality flint but the heavily recorticated state of most of the assemblage precludes identification of the colour of most pieces. However, unrecorticated pieces and occasional recent breaks reveal these pieces at least to be fine-grained, translucent and mostly light grey in colour. Cortex is present on many pieces and ranges from being smooth-rolled to thick but hard and weathered, with many pieces also exhibiting thermal-fracture surfaces. This indicates the raw materials were gathered from derived sources, most likely the terrace gravel deposits and remnants of the glacial tills that are present in the vicinity.

A.5.4 The majority of the assemblage was recovered from features dated to the Roman period, notably structure **434** which contained 22 pieces. These pieces are of mixed date and variable condition, as would be expected from a residually deposited assemblage. Bronze Age features produced a quarter of the assemblage and whilst this includes some clearly earlier pieces, the majority are in good or only slightly chipped condition and are likely to be at least broadly contemporary. A long period of flint use at the site is also indicated the assemblage's typological make-up and technological attributes.

A.5.5 Possibly the earliest piece was unstratified but comprises a very large and heavily recorticated blade-like flake that would have potentially formed a very long blade had it not detached with a hinged distal termination; as it is it measures 110mm in length (SF 78). It may have been struck to adjust the core's face but its size means the core must have been of considerable size, the flake's parallel dorsal scars indicating that the core had previously produced blades in excess of 110mm. The working of cores and production of blades of this size is characteristic of late Glacial or early Post-glacial industries. Possibly of a similar date to this is another unstratified piece that consists of a relatively long blade measuring 75mm in length that has a facetted striking platform. This is also larger than any of the other blades from the site and is similarly heavily recorticated, but it could potentially date to later in the Mesolithic period.

A.5.6 Most of the blades and blade-like flakes found at the site are notably smaller than this and more characteristic of later Mesolithic or Early Neolithic industries, and these are also less heavily recorticated. The later period is certainly indicated by the presence of a finely made but slightly asymmetrical leaf-shaped arrowhead, found in Roman structure **434**. Probably of similar date to this is a finely made denticulated oval flake that was also found in the same structure. Amongst the remainder of the assemblage are a number of flakes that whilst not evidently produced through systematic reduction are thin and have been competently produced from well-maintained cores. Whilst not easy to place, at least the majority of these are unlikely to have been made after the Early Bronze Age. The majority of flakes as well as most, if not all, of the cores have been produced by a simple and unstructured core-and-flake technology, typical of later prehistoric industries, particularly those of the later second and first millennia BC. The flakes tend to be thick and squat, and often have wide, unmodified and markedly acute striking platforms (cf Martingell 1990; 2003). An exclusive use of hard hammer technology is indicated by the prevalence of prominent bulbs of percussion as well as visible and often multiple points of percussion. The eleven cores recovered are all likely to belong to this phase of flintworking and represent a high proportion of the total. These are mostly minimally reduced and have produced only a small number of flakes, often from different directions and indicating a haphazard selection of whatever surface seemed appropriate as a striking platform, these often being cortical surfaces. The raw materials all consist of small pebbles or thermally disintegrated nodular fragments with their average weight coming to 51.5g and the largest weighing only 109g. Other than

the arrowhead and denticulate, the three remaining retouched implements and all of the core-tools are also likely to belong to this period. The retouched pieces all comprise simple and rather irregularly edge-retouched flakes that are likely to have been used as cutting or chopping implements. The core-tools were all made using thermal spalls. One has shallow flaking around its perimeter, also suggestive of use as a cutting tool, whilst the other two have steeper although uneven retouch and are more akin to denticulated scrapers.

Discussion of the struck flint

A.5.7 The struck flint assemblage has clearly been made over a long period of time. The earliest piece comes from a tradition of producing exceptionally large blades that is most closely matched by late Glacial / early Post-glacial 'long blade' industries. A number of pieces of flintwork potentially of late Upper Palaeolithic or Early Mesolithic date have been found along this stretch of the Cam valley, including close by at the Hutchison and Clay Farm sites as well as further upstream at the 'Spicers' site in Sawston and at the Genome Complex in Hinxton (McLaren and Edmonds 2008; Bishop 2013; forthcoming; in press). Recently, a large knapping scatter which may have been associated with processing suitable raw materials for this industry has been identified at the latter site. Relatively low-key activity during the Mesolithic and / or Early Neolithic is also indicated and again this complements the findings from a number of close-by sites where scattered flintwork and, for the latter period, dispersed pits indicate persistent if transient settlement (Bishop 2002; 2013; 2014a; 2014b; McLaren and Edmonds 2008).

A.5.8 Probably the bulk of the struck flint assemblage can be dated to the later second or first millennia BC and much of this is probably associated with the Middle Bronze Age features recorded at the site. Many of these features produced small collections of contemporary flintwork in good condition and suggestive of opportunistic and short-lived knapping episodes occurring in the vicinity, the products of which were thrown or eroded into the open features once the tasks were completed. This again appears to be the typical pattern of flintworking seen at many close-by sites, perhaps most notably at the Hutchison Site and at Clay Farm (McLaren and Edmonds 2008; Bishop 2013). Unlike at Clay Farm, however, there is no evidence from the flintwork for any acts of 'conspicuous discard' or the production and discard of large quantities of flintwork in any of the features.

Statement of Potential

A.5.9 The assemblage complements and enhances the findings from the many other excavations conducted in the Addenbrooke's environs, such as Clay Farm and the Hutchison Site.

Recommendations for further work

A.5.10 Due to the size of this assemblage no further analytical work is warranted. It is recommended that an account of the lithic assemblages should included in any published accounts of fieldwork.

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
5	6	RB				1									Unknown	None	Slightly chipped/ abraded	White	Meso / ENeo	Complete 41x17x4mm
14	13	RB		1											Unknown	Rough, thick	Good	Bluish	Meso-EBA	Small trimming flake
14	13	RB		1											Translucent light grey	Rough thin	Slightly chipped/ abraded	Bluish	Meso-EBA	Small trimming flake
14	13	RB				1									Unknown	Rough thin	Slightly chipped/ abraded	White	Meso / ENeo	Partially cortical. Distal and proximal ends missing
22	22	UD		1											Translucent light grey	None	Chipped	Light	Meso-EBA	Small trimming flake, somewhat blade-like
154	153	RB			1										Translucent black	Rough, thick	Chipped	Bluish	Meso-EBA	
206	160	RB		1											Translucent light grey	Rough thin	Chipped	Incipient	BA-IA	Quite 'squat'
246	243	RB											1	15	Unknown	None	Burnt	Unknown	Undated	Heavily burnt flint
297	295	BA	1												Unknown	Smooth rolled	Good	Bluish	MBA-IA	Quite 'squat'
320	323	BA							1						Translucent light grey	Thick, hard	Good	Bluish	MBA-IA	Core-tool made on thermally split nodular fragment with steep convex scalar retouch around one side forming a slightly denticulated scraping-type implement. 67x55x34mm
350	334	BA						1							Translucent light grey	Hard, thin	Good	Bluish	MBA-IA	Minimal reduced core made using a small thermally fracture nodular fragment. 30g

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
350	334	BA		1											Translucent light grey	Rough, thick	Good	Bluish	MBA-IA	Fairly 'squat'
350	334	BA						1							Translucent light grey	Thick, hard	Good	White	MBA-IA	Minimally reduced keeled core made on a small thermally fracture nodular fragment with a few flakes removed from two direction along a ridge. 34g
423	422	PM		1											Unknown	None	Chipped	White	BA-IA	Small, quite 'squat'
423	422	PM	1												Unknown	Thermal	Chipped	White	Undated	
423	422	PM	1												Unknown	Smooth rolled	Good	White	Undated	
423	422	PM		1											Translucent light grey	Smooth rolled	Slightly chipped/abraded	White	Undated	Small trimming flake
435	434	RB		1											Unknown	Thermal	Slightly chipped/abraded	Bluish	BA-IA	laterally split
435	434	RB		1											Translucent brown	None	Slightly chipped/abraded	Bluish	Meso-EBA	Facetted striking platform -possibly a core tablet. Distal missing
435	434	RB		1											Unknown	Rough, thick	Slightly chipped/abraded	Bluish	Undated	Distal end of a thin flake
435	434	RB	1												Unknown	Thermal	Slightly chipped/abraded	Bluish	Undated	narrow
435	434	RB								1					Translucent brown	None	Slightly chipped/abraded	Light	ENeo	Complete slightly asymmetrical with pressure flaking cover all of both faces. 35x18x4mm
435	434	RB											2	30	Unknown	Thick, hard	Burnt	Unknown	Undated	Heavily burnt flint

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
435	434	RB		1											Unknown	Thick, hard	Good	White	BA-IA	Thick and quite 'squat'
435	434	RB		1											Unknown	Hard, thin	Slightly chipped/abraded	White	Undated	Small, decortication
444	434	RB						1							Unknown	Thick, hard	Slightly chipped/abraded	Bluish	MBA-IA	Minimally reduced core made on a thermally fractured pebble with a few flakes removed from several directions. 47g
444	434	RB		1											Translucent black	None	Good	Bluish	Meso-EBA	Small core trimming flake
444	434	RB				1									Unknown	None	Slightly chipped/abraded	White	Meso / ENeo	Distal end
511	434	RB		1											Unknown	Rough, thick	Chipped	Bluish	MBA-IA	Very 'squat'
511	434	RB		1											Translucent brown	None	Chipped	Bluish	Meso-EBA	Thin, well struck
511	434	RB		1											Translucent light grey	Rough thin	Chipped	Bluish	Meso-EBA	Small core trimming flake
511	434	RB		1											Translucent light grey	Thick, hard	Slightly chipped/abraded	Light	MBA-IA	Fairly 'squat'
511	434	RB		1											Translucent brown	Rough thin	Slightly chipped/abraded	Light	Meso-EBA	Thin, well struck
511	434	RB		1											Unknown	Smooth rolled	Slightly chipped/abraded	White	BA-IA	Thick
511	434	RB	1												Unknown	Thick, hard	Slightly chipped/abraded	White	Undated	

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
513	434	RB		1											Translucent light grey	Thick, hard	Slightly chipped/abraded	Bluish	Meso-EBA	Small core modification flake
513	434	RB		1											Unknown	Smooth rolled	Slightly chipped/abraded	Bluish	Undated	Narrow
513	434	RB		1											Unknown	Rough, thick	Chipped	White	Meso-EBA	Thin partially cortical flake
513	434	RB									1				Unknown	Rough, thick	Slightly chipped/abraded	White	Neo	Denticulate made using a thin oval-shaped blade-like flake with fine retouch around most of perimeter. 52x33x5mm
513	434	RB	1																	
540	539	RB											1	14	Unknown	None	Burnt	Unknown	Undated	Heavily burnt flint
561	555	RB						1							Translucent light grey	Thick, hard	Good	Bluish	MBA-IA	Minimally reduced core made using a thermally fractured nodular fragment with a few flakes removed from various and random directions. 109g
561	555	RB		1											Unknown	Rough, thick	Slightly chipped/abraded	White	BA-IA	Badly struck
561	555	RB		1											Translucent light grey	Rough, thick	Slightly chipped/abraded	White	MBA-IA	Very 'squat'
561	555	RB	1												Translucent light grey	Smooth rolled	Good	White	Undated	
561	555	RB	1												Unknown	Smooth rolled	Slightly chipped/abraded	White	Undated	
630	621	BA		1											Translucent light grey	Thick, hard	Slightly chipped/abraded	Bluish	MBA-IA	Fairly 'squat'

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
630	621	BA						1							Translucent brown	Thermal	Slightly chipped/abraded	Light	MBA-IA	Irregularly reduced core made using an angular thermal chunk with a number of flakes removed randomly from many directions. 21g
630	621	BA										1			Translucent brown	Thick, hard	Good	White	BA-IA	Completely cortical flake with a shirt stretch of shallow parallel retouch along left margin at proximal end making a cutting implement. 52x34x9mm
630	621	BA	1												Unknown	Thick, hard	Slightly chipped/abraded	White	Undated	Small
630	621	BA	1												Unknown	Rough, thick	Slightly chipped/abraded	White	Undated	Narrow
656	654	RB					1								Unknown	Thick, hard	Slightly chipped/abraded	Bluish	Undated	Fragment of either a blade core abandoned at an early stage or a core tool
656	654	RB			1										Unknown	None	Chipped	Light	Meso / ENeo	Possibly intended as a rejuvenation flake struck from the base of a core and removing part of an opposed platform
798	797	UD		1											Translucent light grey	Thick, hard	Good	Bluish	MBA-IA	quite 'squat'
798	797	UD	1												Translucent light grey	Thermal	Good	Bluish	MBA-IA	badly struck
798	797	UD		1											Translucent brown	Thick, hard	Good	Incipient	MBA-IA	quite 'squat'
798	797	UD		1											Translucent light grey	Thick, hard	Good	Incipient	MBA-IA	small flake

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
798	797	UD	1												Translucent light grey	Smooth rolled	Good	Incipient	Undated	
798	797	UD						1							Translucent light grey	Thick, hard	Good	Light	MBA-IA	Minimally reduced using a mall nodular cobble with a few flakes removed from a keeled platform. 72g
798	797	UD						1							Unknown	Smooth rolled	Good	Light	MBA-IA	Minimally reduced using a thermally fracture alluvial pebble with a few flakes removed from a keeled platform. 73g
798	797	UD		1											Translucent light grey	Thick, hard	Good	Light	MBA-IA	Very 'squat'
798	797	UD		1											Translucent light grey	Thick, hard	Good	Light	MBA-IA	badly struck
798	797	UD		1											Translucent light grey	Thermal	Slightly chipped/abraded	Light	MBA-IA	quite 'squat'
1015	1016	RB											1	3	Unknown	None	Burnt	Unknown	Undated	Heavily burnt flint
1037	1033	BA										1			Translucent brown	Thick, hard	Good	Bluish	BA-IA	Mostly cortical flake with irregular inverse retouch/ semi-invasive edge damage on left margin. 51x35x12mm
1037	1033	BA	1												Unknown	Smooth rolled	Slightly chipped/abraded	Bluish	Undated	Many undeveloped Hertzian cones
1037	1033	BA										1			Translucent light grey	Thermal	Slightly chipped/abraded	Light	MBA-IA	Typically 'squat' flake with a short stretch of light and semi-invasive retouch and use-wear on right margin. 30x39x9mm

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
1037	1033	BA	1												Translucent light grey	Thick, hard	Good	Light	BA-IA	From a keeled core with an obtuse striking platform. Obtuse platform/core face angle
1144	1143	RB							1						Speckled opaque black	Thermal	Slightly chipped/abraded	None	BA-IA	Possible core-tool: small thermal spall with what appears to be steep scalar retouch around margins forming a thumbnail-sized scraping type implement. 25x19x7mm
1325	1327	BA						1							Translucent brown	Smooth rolled	Good	Bluish	MBA-IA	Minimally reduced core made using an angular thermally shattered pebble with a few flakes removed. 20g
1325	1327	BA						1							Translucent light grey	Thermal	Good	Incipient	MBA-IA	Minimally reduced core made using an angular thermally shattered chunk with a very few flakes removed. 42g
1429	1428	BA											185	3789	Unknown	Varied	Burnt	Unknown	Undated	Heavily burnt flint
1467	1466	BA											14	127	Unknown	Hard, thick	Burnt	Unknown	Undated	Heavily burnt flint
1482	1479	PM				1									Unknown	Thick, hard	Slightly chipped/abraded	Incipient	Meso / ENeo	Small badly struck 36x14x5mm
1482	1479	PM		1											Translucent brown	None	Slightly chipped/abraded	Light	Meso-EBA	Small core trimming flake
1509	1510	UD											3	20	Unknown	None	Burnt	Unknown	Undated	Heavily burnt flint
1553	1552	BA						1							Unknown	Thick, hard	Slightly chipped/abraded	White	MBA-IA	Minimally reduced core made on a lenticular shaped thermal spall with a few flakes taken off of both faces. 25g

Context	Feature	Feature Date	Decortication flake	Flake	Blade-like flake	Prismatic Blade	Conchoidal chunk	Core	Core Tool	Arrowhead	Denticulated flake	Edge retouched	Burnt Stone (no)	Burnt stone (wt:g)	Colour	Cortex	Condition	Recortication	Suggested Dating	Comments
1553	1552	BA						1							Unknown	Smooth rolled	Slightly chipped/abraded	White	MBA-IA	Keeled core made on a rounded pebble with many flake removed from two directions along a ridge. 94g
1556	1552	BA					1								Translucent yellow-brown	Smooth rolled	Good	None	MBA-IA	Core tool made from a thermal 'potlid' spall with crude semi-invasive flaking around one side making a cutting or chopping implement. 63x49x14mm
99999	+	Mod			1										Translucent black	None	Chipped	White	UPal	Very Large blade-like flake with plain striking platform and a hinged termination. Parallel and orthogonal dorsal scars Some edge damage could be later (mid-recort) retouch. 110x79x17mm
99999	+	Mod				1									Unknown	Rough, thick	Slightly chipped/abraded	White	UPal-Meso	Large blade with facetted SP and uni-direction parallel dorsal scars. 75x29x10mm

Table 22: Struck Flint Catalogue

A.6 Worked Stone

By Ruth Shaffrey

The assemblage

A.6.1 A small but significant assemblage of worked stone was recovered from the investigations. Two pieces of clunch appear to have been used structurally although neither retains any tool marks (structure **434** and pit **931**, both Early Roman: not in catalogue). A single heat cracked quartzite cobble shows some evidence that it has been used as a rubber (not in catalogue). This was recovered from the fill of shallow Bronze Age pit **1428** (1429), which was filled with burnt sandstone 'pot boilers'.

A.6.2 The remainder of the assemblage comprises quern and millstone fragments from nine contexts. Small undiagnostic fragments of lava were recovered from three features (not in catalogue). All three features are Early Roman; structure **434** in the west of the site (fill 435, SF 15), ditch **672** (fill 671, SF 28) in the east, and ditch **776** (836) in the north-west.

A.6.3 The remaining six fragments comprise two definite rotary quern fragments, two definite millstone fragments, one possible millstone fragment, and one fragment that could be from either. All are from Early Roman features in the north-east of the site. The two rotary quern fragments consist of an example of flat disc form but indeterminate size and another of flat-topped type that measures 470mm diameter (SF 62, fill of ditch **653**). This example may have been reused, as the unworn face has radial grooves more typically found on the grinding surface. A third fragment of indeterminate diameter has been extensively reused as a whetstone, with all faces now worn, very concave and with numerous grooves from sharpening (SF 3, fill of ditch **68** to the north of the cycleway).

A.6.4 The three remaining fragments are all of probable millstones. The diameter of one of these can be estimated at 760mm from the surviving circumference (SF 49, dumped fill in pit **931**). The rim of the second example, found near by, (SF 50, from northern end of ditch **689**) does not survive, but the fragment measures in excess of 540mm diameter and the diameter of the eye (270mm) indicates that it is certainly from a millstone (Shaffrey in press). The third example certainly measures in excess of 380mm diameter and has the overall appearance of a flat millstone (SF 63, the same fill of ditch **653** as SF 62). It has also been reused as a hone.

Catalogue of worked stone

A.6.5 Upper millstone fragment. Millstone Grit. Less coarse than typical – medium to coarse grained grey sandstone with frequent white feldspar. Fragment from large stone of flat disc type. The grinding surface has pronounced rotational grooves and is blackened from burning. The upper surface originally had deep spaced pecking but is now mostly worn smooth. This appears to show that this surface was also used for grinding or was reused in paving or similar. Measures approx 760mm diameter x 65mm max thickness. SF 49. Context 929, fill of pit **931**. Early Roman

A.6.6 Millstone fragment. Millstone Grit: coarse grained grey sandstone with frequent white feldspar. Moderately well-sorted. Central fragment with part of the circular cylindrical eye measuring approximately 27cm diameter. The faces are flat and one has rotational wear while the other has irregular but deep spaced pecking. Measures unknown diameter but >540 x 67mm thick. SF 50. Context 937, fill of cut **938** within ditch **689**. Early Roman

A.6.7 Probable millstone fragment. Millstone Grit. No circumference survives nor the centre, so it cannot be absolutely identified as a millstone, however given its general appearance, it seems highly likely. It has deep spaced pecking on one (flat) face. Other face is worn smooth and has a significant number of grooves through reuse as a hone. Measures >380mm diameter and probably a lot more. SF 63. Context 1281, fill of cut **1283** within ditch **653**. Early Roman

A.6.8 Quern or millstone fragment. Millstone Grit. Similar texture to other examples but reddened. Heavily reused as a whetstone on both faces and the edge. All these faces are now worn concave and very smooth and there are numerous grooves from whetting. Possibly burnt as fresh surface shows a very red stone. Measures unknown diameter x 74mm thick. SF 3. Context 67, fill of ditch **68**. Early Roman

A.6.9 Upper rotary quern fragment. Millstone Grit. Similar to above but less white feldspar. Probably still Millstone Grit. Rim fragment of quern that tapers to the centre. One face is concave and worn very smooth, so presuming it to be an upper stone. The other face appears flat and has radial grooves. It's not clear if these go right to the centre as the eye is missing. Edges straight and neatly pecked. Measures 470mm diameter x 54mm thick at the edge. SF 62. Context 1281, fill of cut **1283** within ditch **653**. Early Roman

A.6.10 Rotary quern fragment. Millstone Grit. Medium to coarse grained grey sandstone with frequent white feldspar. Not as coarse as typical Millstone Grit. Moderately well sorted. No edges or centre but has some rotational wear. Spaced pecking on one face. Both faces flat. Measures 39mm thick. SF 114. Context 764, fill of cut **763** within ditch **653**. Early Roman

Discussion

A.6.11 The existence of a number of rotary querns and millstones indicates their likely use on site, despite the reuse of several of them for sharpening tools. Whilst the querns typically demonstrate domestic use, the millstones are indicative of a greater scale of grinding. The millstones found here can be added to a number from the locale, with five possible examples and two definite ones from Clay Farm (Shaffrey in prep) as well as an example from north-west Cambridge (Evans and Newman 2010). The HER also reports that Roman millstones were found just to the west at Grantchester though these have not been positively confirmed by the author. The millstones from the Biomedical campus are thus not isolated finds.

A.6.12 The fact that all the examples are of Millstone Grit could be the result of the limited period of activity at the site. Sites in this area with activity that start earlier, even in the very late Iron Age, tend to have querns of Hertfordshire Puddingstone (e.g. Hayward, 2001; Evans *et al* 2008). The absence of lava might seem more puzzling given the early date of the site, but if both the querns and millstones originated at the same mill, it is more likely that they would be of Millstone Grit. Recent detailed analysis of the distribution of millstones shows that Cambridge is well within the geographical area covered by Millstone Grit millstones but just outside that covered by Lava millstones, which is south and west of Cambridge (Shaffrey in press, (2015), figure 1).

A.6.13 What is intriguing, is how we interpret the presence of querns and millstones here. Their most likely function is the grinding of grain for flour, and although there is no evidence for a domestic element to this site, several structures in the west of the site, with a sunken element, have been interpreted as having possibly been used for processing crops. It should be noted, however, that both querns and millstones were used for the processing of other things. There is a small possibility that the stones were not used for

grinding here and were imported for secondary use. Several, but not all, the fragments were reused for sharpening, and may have been hones for the possible smithy.

A.6.14 The presence of querns and millstones at this site is thus difficult to interpret; they could be connected either to grain processing or to metal working but it seems likely that they were used on or very near the site for grinding. Although the recovery of millstone fragments (especially reused) cannot necessarily be taken as direct evidence of a mill on site, millstone fragments are not likely to have moved far from their original place of use, once they had ceased to operate as millstones (Shaffrey in press). It is therefore highly likely that a mill existed. If this was animal or human powered, it could have been very close to the identified structures. If it were a water-powered mill, it may well have made use of water from the River Cam at Trumpington; perhaps close to where the later medieval mill was located.

A.7 Metalwork

By Chris Howard-Davis

Introduction and methodology

A.7.1 In total 112 items of metalwork were recovered from the excavations, which can be separated into copper alloy (13 items), iron (93 items), silver (2 items) and lead (4 items). Every fragment was examined, assigned a preliminary identification and, where possible, date range. Outline database entries were created, using Microsoft Access 2000 format, and the data recorded (context, small finds number, material, category, type, quantity, condition, completeness, maximum dimensions, outline identification, brief description, and broad date) serve as the basis for the comments below. The state of preservation (condition) was assessed on a broad four point system (namely poor, fair, good, excellent).

Copper alloy

A.7.2 *Quantification*: There were, in all, 13 copper alloy objects, six of them coins. All are in fair to good condition, although corrosion products are evident on most, and in the case of the coins, it is sufficient to hinder identification. The distribution of copper alloy objects between contexts is shown below in Table 23.

Context	Feature No.	Feature date	Coin	Pers adorn	Other	*Total*
67	**68**	Early Roman			1	*1*
104	**103**	Early Roman	1			*1*
363	**194**	Early Roman	1			*1*
791	**790**	Early Roman		1		*1*
1039	**1038**	Post-medieval			1	*1*
1201	**1200**	Early Roman			1	*1*
1305	**336**	Post-medieval			1	*1*
1501	**780**	Early Roman	1			*1*
Unstrat.			3		2	*5*
Total			6	1	6	*13*

Table 23: distribution of the copper alloy objects

A.7.3 *Date range and evaluation*: four of the coins recovered (SFs 5, 6, 11, 65) are probably of Roman date, but they will require cleaning and conservation to confirm this. Two of the coins can be dated to the reign of George III, with SF 77, from Early Roman ditch ditch **780** (cut **1503**, fill 1501), probably dated 1790. A very thin and badly distorted disc from post-medieval ditch **1038** (fill 1039) in the centre of the site is possibly a jetton (SF 54), but the surfaces are worn, and no detail can be determined.

A.7.4 Finds of Roman date are confined to a small enamelled brooch of headstud type (SF 38) which came from Early Roman pit **790** (fill 791), which is likely to be of second-century date, and a poorly-preserved ligula (SF 1) from Early Roman ditch 68 (fill 67), located north of the cycleway.

A.7.5 None of the other copper alloy finds are chronologically or functionally diagnostic.

Ironwork

A.7.6 *Quantification*: there were 93 fragments of iron artefacts recovered, the majority of which are nails and hobnails. Overall the ironwork was in poor to fair condition, with appreciable corrosion products on all objects, but, in most cases, the objects could be identified with moderate confidence, and thus have not yet been subject to x-ray. Their distribution is shown below in Table 24.

Context	Feature No.	Feature date	Nail	Hobnail	Other	*Total*
260	**243**	Early Roman	1		2	*3*
435	**434**	Early Roman	1			*1*
444	**434**	Early Roman	3		1	*4*
511	**434**	Early Roman	3		1	*4*
549	**550**	Post-medieval	1			*1*
566	**567**	Post-medieval	1			*1*
633	**619**	Early Roman			1	*1*
647	**619**	Early Roman	2			*2*
652	**653**	Early Roman	6			*6*
656	**653**	Early Roman	1			*1*
670	**649**	Early Roman	1			*1*
671	**672**	Early Roman	1			*1*
676	**658**	Early Roman	1			*1*
701	**703**	Early Roman	2			*2*
764	**653**	Early Roman	2	30	1	*33*
782	**785**	Early Roman	1			*1*
789	**788**	Early Roman	1			*1*
795	**672**	Early Roman	1			*1*
800	**640**	Early Roman	2			*2*
807	**765**	Early Roman	1			*1*
830	**640**	Early Roman	1			*1*
842	**842**	Early Roman	1			*1*
927	**931**	Early Roman	1			*1*
929	**931**	Early Roman			1	*1*
932	**811**	Early Roman	1			*1*
960	**962**	Early Roman	2			*2*
1009	**619**	Early Roman			2	*2*
1028	**788**	Early Roman			1	*1*

Context	Feature No.	Feature date	Nail	Hobnail	Other	*Total*
1104	**1103**	Post-medieval	1			*1*
1222	**1103**	Post-medieval	1			*1*
1224	**194**	Early Roman			1	*1*
1305	**336**	Post-medieval			1	*1*
1374	**1369**	Iron Age			1	*1*
1400	**1103**	Post-medieval	1			*1*
1436	**1426**	Early Roman	1			*1*
1465	**194**	Early Roman	1		1	*2*
1501	**780**	Early Roman			2	*2*
Unstrat			2		2	*4*
Total			***45***	***30***	***18***	***93***

Table 24: distribution of the iron objects

A.7.7 *Date range and evaluation*: One context, fill 764 of Early Roman boundary ditch **653**, stands out, having produced very approximately one third of the ironwork from the site. The composition of the group from this context would be comparable with that of a burial of Romano-British type, containing grave goods which included a pair of hobnailed shoes. Very few of the other items of ironwork were chronologically sensitive, but a large triangular knife blade (SF 67) found unstratified is probably also of Roman date.

A.7.8 Two fragments of horseshoe (SF 61 and 109) came from Early Roman ditch **194** (fill 1224) and post-medieval drainage ditch **336** (fill 1305). The former of these has the wavy edge typical of examples from the tenth to the twelfth centuries AD (Clark 1995, type 2).

Silver

A.7.9 *Quantification*: only two fragments of silver were recovered, a faceted finger ring (SF 21) and a coin (SF 70), both of which were unstratified. The ring is in good condition, the coin fair.

A.7.10 *Date range and evaluation*: the ring (SF 21) is a Late Roman type with a polygonal hoop, probably dating to the third or fourth century (Crummy 1983). The coin (SF 70) will not be dated until after conservation and cleaning, but appears most likely to be of medieval date.

Lead

A.7.11 *Quantification*: there were only four items of lead, all of them found unstratified.

A.7.12 *Date range and evaluation*: Two weights are of interest, biconical weight SF 25 could well be of Roman date, although it is a long-lived type, persisting to the present day. A second weight (SF 20) is more ornate, and seems likely to be medieval in origin. The

remainder of the lead seems to be associated with construction, and beyond that cannot be characterised or dated.

Conservation

A.7.13 The metalwork finds are well packed but all of the six copper alloy coins will require further cleaning and/or conservation in order to confirm identifications. Copper alloy brooch SF 38 will also require conservation.

Potential

A.7.14 The metalwork has only very limited potential to further inform the dating and interpretation of this site.

Proposed further work

A.7.15 *Copper alloy*: archival catalogue entries should be completed. An illustrated report should be prepared for inclusion into any proposed publication, and some contribution be made to the incorporation of comment on the finds into the main stratigraphic text.

A.7.16 *Ironwork*: the assemblage should be x-rayed, and archival catalogue entries should be completed. A brief report should be prepared for inclusion into any proposed publication, and some contribution be made to the incorporation of comment on the relevant classes of finds into the main stratigraphic text.

A.7.17 *Silver*: archival catalogue entries should be updated and a brief comment should be prepared for inclusion into any proposed publication.

A.7.18 *Lead*: archival catalogue entries should be completed. An illustrated report should be prepared for inclusion into any proposed publication, and some contribution be made to the incorporation of comment on the relevant classes of finds into the main stratigraphic text.

Material	Task	Time required/ no. of objects
Copper alloy	Completion of conservation and cleaning	4 coins (SFs 5, 6, 11, 65) 3 objects (SFs 1, 38, 57)
	Coin report	4 coins
	Complete archive catalogue entries for other copper alloy finds, select items for illustration and liaise with illustrator	0.5 days
	Write brief report for inclusion in publication	0.5 days
Ironwork	X-ray	All relevant objects
	Complete archive catalogue entries, research local and regional comparanda, select items for illustration and liaise with illustrator	1 day
	Write brief report for inclusion in publication	0.5 days
Silver	Complete archive catalogue entries	0.25 days
	Write brief report for inclusion in publication	0.25 days

Material	Task	Time required/ no. of objects
Lead	Complete archive catalogue entries	0.25 days
	Write brief report for inclusion in publication	0.25 days

Table 25: metalwork task list

A.8 Metal working debris

By Sarah Percival

Introduction and methodology

A.8.1 A total of 154 pieces of metal working debris weighing 3942g (Table 26) were collected from 35 excavated contexts, with the majority coming from an Early Roman rectangular enclosure (**1077**; 103 pieces, 3078g). The assemblage comprises secondary metal working debris, probably from iron smithing and includes several pieces of vitrified hearth lining. Dating from pottery associated with the assemblage suggests that it was deposited in the 1st to 2nd centuries AD.

Context	Cut	Feature No.	Feature Type	Context Date	Quantity	Weight (g)
250	**249**	**157**	Ditch	C2	1	260
397	**394**	**194**	Ditch	MC1-E/MC2	1	28
444	**434**	**434**	Structure	LC1-E/MC2	3	24
647	**648**	**619**	Pit	M/LC2	4	70
656	**654**	**653**	Ditch	E/MC2	1	14
660	**659**	**659**	Pit	E/MC2	13	157
671	**672**	**672**	Ditch	LC1-MC2	5	45
789	**788**	**788**	Ditch	MC2	6	100
792	**790**	**790**	Pit	E/MC2	7	31
802	**801**	**1077**	Ditch	C2	1	10
929	**931**	**931**	Pit	MC1-C2	5	10
1015	**1016**	**1077**	Ditch	E/MC2	3	25
1078	**1077**	**1077**	Ditch	MC2	27	963
1109	**1110**	**1077**	Ditch	MC2	2	308
1202	**1203**	**1077**	Ditch	MC1-MC2	45	1335
1297	**1296**	**1077**	Ditch	M/LC1-MC2	1	22
1306	**1307**	**1077**	Ditch	E/MC2	24	415
1413	**1412**	**788**	Ditch	MC1-MC2	2	95
1421	**1420**	**1103**	Ditch	Post-medieval	2	17
1502	**1503**	**780**	Ditch	MC2	1	13
Total					**154**	**3942**

Table 26: Quantity and weight of metal debris by feature (spot date taken from pottery)

A.8.2 The assemblage is small and poorly preserved. No material was found in association with structures used for metal working.

Description

A.8.3 The assemblage is formed of rust-coloured, often formless lumps which exhibit poor susceptibility when tested with a magnet. The pieces have a lumpy, vesicular texture typical of smithing slag, which is formed of corroded hammerscale and other hearth debris. Several pieces contain flint, chalk or quartz pebbles and two have impressions from organic material, perhaps fuel. One piece, from fill (1306), part of enclosure **1077**, contains dark blue specks which appear to be material incorporated from the hearth base.

A.8.4 Six contexts contain vitrified hearth lining which has an orange, sandy outer surface and glassy, vitrified interior. A possible plano-convex hearth base was found in fill (1109), part of enclosure **1077**.

Discussion

A.8.5 The assemblage most likely represents secondary smithing of iron. Pieces of hearth lining present in several features suggest that iron working had taken place at or near the site but the small size of the assemblage suggests it was not intensive.

A.8.6 The assemblage was mainly found in ditches in the east of the site, with the majority of the assemblage coming from an Early Roman rectangular enclosure (**1077**). The distinctive shape of this enclosure suggests it had a specific purpose, which, given the presence of the slag, may have related to metalworking. However, larger quantities of metal working waste might be expected if this was the focus of smithing activity. Flakes and spheroids of hammerscale are present in most of the samples from the enclosure ditch but once again the quantities of these magnetic residues are too low to substantiate an interpretation that this is an iron-working area.

A.8.7 No other direct evidence for metal working, such as *in situ* structures were present. Pottery evidence suggests that the assemblage is Early Roman.

Statement of Research Potential

A.8.8 The small assemblage is of little research potential, although it may be worth seeking the advice of a specialist with access to a micro probe who might be able to identify the blue inclusions in the debris from fill (1306) in enclosure **1077**.

Further Work and Methods Statement

A.8.9 No further work is required.

A.9 Fired Clay and Ceramic Building Material

By Cynthia Poole

The Fired Clay

A.9.1 A small assemblage of fired clay amounting to 24 fragments (433g) was recovered from eleven contexts comprising fills of ditches, a gully, a channel and pits, all of Early Roman date except for a single Bronze Age pit (Table 28). The mean fragment weight of 18g indicates average preservation for fired clay and abrasion was all in the moderate to high categories. Fired clay is not closely dateable and relies on other dated artefacts for phasing, though a limited number of diagnostic forms can be assigned to broad periods. The assemblage has been catalogued on an Excel spreadsheet for archive.

A.9.2 The main fabric used for the fired clay was a pale orange, buff, pink or grey fine silty micaceous laminated clay (fabric A) probably derived from the local Gault clay. It sometimes had the addition of organic inclusions (fabric AV) or sparse quartz sand (fabric AQ). Less common were fabric C, a sandy clay containing chalk grit and fabric S, which contained frequent poorly sorted mixed sand, ferruginous grits and occasional flint grit. This probably derived from a superficial alluvial clay source.

A.9.3 The Bronze Age 'pot boiler' pit (**1428**) was filled with burnt stone and charcoal and produced two small amorphous broken fragments 25mm long of reddish orange fine sandy fired clay. These are probably burnt clay fragments dislodged from the pit sides, though one cannot discount the use of hearth furniture in association with the feature.

A.9.4 The fired clay from Early Roman ditches is dominated by a single recognisable type of oven or hearth furniture, in the form of a flat circular or rectangular plate. These pieces usually had a smooth well finished flat surface on top and slightly irregular, rougher or undulating flat base. In some cases organic impressions in the form of fine chaff or monocot (probably grass) stem and leaf impressions were visible on the surfaces, especially the base surface. Three examples preserved the edge, one straight sided with a flat vertical profile and two curved with rounded profiles, one bulbous forming a flanged plate. Thickness ranged from 18 to 34mm and in one case the diameter was estimated to be c. 220mm. Their function is uncertain though they were probably intended for use in conjunction with domestic ovens or hearths. This form is typical of the Late Iron Age – Early Roman period and is commonly found across the east Midlands from Cambridgeshire to the upper Thames Valley. Examples were found in the neighbouring Clay Farm site (Poole forthcoming).

Ceramic Building Material

Introduction

A.9.5 A small assemblage of ceramic building material (CBM) amounting to 112 fragments (6447g) was recovered from 45 contexts; predominantly boundary and drainage ditches and furrows from cultivation, with a small quantity from other miscellaneous features (Table 29). It divides into roughly equal proportions of Roman and post-Roman tile. No complete tiles were recovered and in general the only measurable dimension was thickness. Abrasion was generally low, though some pieces especially in fabric Y were fragile and liable to fragment. The mean fragment weight of 57g is low for CBM, but reflects the number of peg tile fragments that tend to fragment into smaller pieces than other forms.

A.9.6 The assemblage has been fully recorded on an Excel spreadsheet in accordance with guidelines set out by the Archaeological Ceramic Building Materials Group (ACBMG 2007). The record includes quantification, fabric type, form, surface finish, forms of flanges, cutaways and vents, markings and evidence of use/reuse (mortar, burning etc). The assemblage is summarised in Table 27. The terminology follows Brodribb (1987); coding for flanges, cutaways, markings etc. follows that established by OA for the recording of CBM. Fabrics were characterised with the aid of x20 hand lens.

Period	Form	No.	Wt (g)	Fabrics	Comments
Roman	Tegula	1	125	D	Cutaway: type C5 (Warry 2006)
	Imbrex	2	324	D	
	Brick	10	2358	B, C, D, Gault (Y)	One overfired. One with finger grooves marked on edge.
	Flat	6	334	D	One with hobnail imprints
Med/ Post-med.	Roof tile (peg/flat)	55	1088	Gault (Y, E), C, B	4 peg holes: 10, 13 and 16mm dia.
	Brick	24	2015	Gault (Y, E), D, G, S, B	
	Indeterminate	2	7	Gault (Y)	
	Ridge/imbrex	1	97	G	
	Indeterminate	12	110	C, D, Gault (E), S	
Total		*112*	*6447*		

Table 27: Summary of the ceramic building material

Fabrics

A.9.7 The fabrics follow the series devised for the nearby site of Clay Farm.

Fabric B: orange, reddish orange, red; fine silty clay; sometimes laminated (cream streaks); high density of fine uniform well sorted quartz sand, with scatter of small red ferruginous grits R 1-3mm and flint grit 1-7mm

Fabric C: orange – red; fine silty clay matrix; mod-frequent medium - coarse quartz sand A-SR, occasionally some dark sand.

Fabric D: orange, red, pink, frequently with grey core; fine sandy clay; high density of fine sand including dark speckles with sparse scattered coarse quartz sand.

Fabric G: red, brownish orange; high density of poorly sorted fine- coarse sand, including quartz and chalk grit 0.5-3mm, sometimes up to 9mm and scattered angular flint grit up to 10mm; fine voids may be leached calcareous inclusions.

Fabric S: red, orange, purple; sandy clay with high density of fine – medium sand, plus scattered coarse quartz sand and grit and flint grit 2-10mm.

A.9.8 Gault Clay Group:

Fabric Y: yellow, cream or pale buff with pink, red or grey streaks; fine silty calcareous clay; sometimes with fine pores; very rarely contains quartz sand grains or angular flint grit up to 10mm.

Fabric E: light orange, pink, pinkish red, buff with cream, red or grey streaks; smooth dense clay, often laminated and contains diffuse clay/silt pellets or unwedged clay lumps.

A.9.9 Fabric D was the dominant Roman fabric together with smaller quantities of fabrics B and C. The source of fabric D is possibly the Gault clay as the sparse amounts of sand found in some examples appears to result from incidental incorporation of moulding sand. The sandy clay fabrics may derive from superficial alluvial clay deposits, that overly the Cretaceous bedrock of the area, but it is possible that the sand was a deliberately added component. In the post-Roman period the Gault clay was the main source resulting in tile and brick of a distinctive cream-yellow and variegated pink colour. The Gault Clay was exploited for roof tile from the fifteenth century and for brick production from the 18th century.

Roman Tile

A.9.10 The Roman assemblage amounts to only 19 pieces (3141g) with a MFW of 165g, which falls in the low average for Roman tile. The dominant form is brick with the nine examples accounting for 75% by weight of the Roman tile. Two size groups appear to be present based on thickness with a smaller size group measuring from 35 to 43mm thick and a larger group measuring 55-60mm thick. The smaller size is typical of *bessalis*, *pedalis* and *lydion* bricks, whilst the thicker examples are more likely to come from *sesquipedales* or *bipedales*. Bricks had a variety of uses including hypocausts, as bonding in walls, and in the construction of flooring and arches. At CBC, four had evidence of burning and one was either overfired or refired, suggesting these bricks may have been re-used in hearths or ovens.

A.9.11 Six fragments of indeterminate flat tile measuring from 15 to 24 mm thick are all most likely to derive from *tegula* or *imbrex*, rather than brick. Only a single fragment of *tegula* measuring 22mm thick was identified from the lower left hand corner of a tile. The flange did not survive but the lower cutaway did. The cutaways in the tile corners formed recesses that allowed the tiles to interlock and create a waterproof roof. The cutaway was type C4 as defined by Warry (2006), who has suggested a date range of AD160-260 for this type. Two edge fragments of *imbrex* measured 18 and 17-22mm thick and both probably had a more angular rather than rounded profile. A curved tile fragment could be either an *imbrex* or post-Roman ridge tile.

A.9.12 Only two tiles had evidence of markings. A flat tile, probably *tegula*, had a number of hobnail impressions from the edge of a shoe. A brick fragment had three finger grooves inscribed in its edge radiating from the corner: two parallel with the tile top and edge and one at a diagonal forming an ↖ (arrow) shape. The purpose of this is unclear as signature marks made with the fingers normally occur on the upper surface of any tile. It may represent some sort of tally mark, which normally occur on tile edges.

A.9.13 Roughly three-quarters of the Roman tile was found in Early Roman linear ditches, a pit and a tree throw. The remainder was found residually in post-medieval ditches and cultivation features. The quantity of tile suggests it became incorporated in fills as a result of agricultural processes, probably manuring. The emphasis on brick and flat tile suggests it had been selectively obtained for reuse, probably in minor structures such as hearths or ovens, before being discarded permanently.

Post-Roman CBM

A.9.14 The post-Roman assemblage comprised 81 pieces (3110g) with a low MFW of 38g reflecting the dominance and fragmentary character of the roof tile in this period. The roof tile is all rectangular flat tile, of which a number of pieces retained peg holes, suggesting all was of this type as no evidence of nibs was found. The roof tile measured from 10 to 15mm thick with most 13-15mm. Peg holes were often roughly formed with a halo of surplus clay encircling them pressed over the upper surface. Peg holes measured 10, 13 and 16mm in diameter. The degree of regularity and finish of the tile is consistent with a late medieval or early post-medieval date. The majority of the tile is made in Gault clay fabrics (Y and E), which was used for tile production from the 15th century. A 15th-17th century date is assigned to most of the roof tile, though some examples were assigned a slightly later date in the post-medieval period. A number of examples in sandy fabrics (B, C and S) were only assigned a general medieval – post-medieval date, though coarser sandier fabrics tend to be most common in the medieval period and reflect a different production source preceding the local exploitation of the Gault clay.

A.9.15 Brick was the only other post-Roman form represented made in both the Gault clay fabrics and sandy fabrics. Most pieces were very fragmentary with few surfaces surviving. Those made in the Gault clay have quite a rough crude finish, one of which measured 52mm thick by 107mm wide suggesting a late medieval – early post-medieval date. Another brick in fabric D measured 109mm wide and one in fabric G measured 63mm thick, the latter being typical of later bricks.

A.9.16 All the medieval – post-medieval CBM was found in field ditches or cultivation furrows and is likely to derive from manuring or incidentally from other agricultural activity.

Recommendations for further work

A.9.17 The small size of the assemblage means that the fired clay and CBM have been fully catalogued and reported on at this stage and no further work is required.

Context	Feature no.	Feature Type	Date Range	No.	Wt (g)	MFW	Fabric	Firing	Class	Form	Description
16	**15**	ditch	Early Roman	1	113	113	AQ	Fired	Furniture	OP	Flat plate with straight edge with rounded convex profile.
16	**15**	ditch	Early Roman	3	72	24	AQ	Fired	Furniture	OP	Flat plate with irregular lower surface & organic impressions. Thinner pieces may be sections between sheared planes within a plate not full thickness of the plate.
17	**15**	ditch	Early Roman	1	4	4	AQ	Fired	Furniture?	OP?	Flat even/smooth moulded surface on each piece. organic impressions in surface (typical of OP lower surface).
17	**15**	ditch	Early Roman	1	1	1	AV	Fired	Furniture?	OP?	Flat even/smooth moulded surface on each piece. organic impressions in surface (typical of OP lower surface).
42	**9**	ditch	Early Roman	1	65	65	A	Fired	Furniture	OP	Edge fragment of circular plate with flat vertical surface, rounded arises and smooth undulating flattish top surface
44	**9**	ditch	Early Roman	1	11	11	AV	Fired	Furniture?	OP?	Flat smooth moulded surface, well finished.
159	**157**	hollow	Early Roman	1	83	83	C	Fired	Furniture	OP	Edge fragment of probably circular plate with rounded bulbous edge broken on underside, forming flanged plate.
359	**360**	cultivation row	Early Roman	2	2	1	A	Fired	Indet	FC1	small area of flat moulded surface.
618	**619**	pit	Early Roman	3	18	6	S	Fired	Indet	FC1	All three pieces have a single flat smooth moulded surface with broken grey core on 2.
681	**680**	pit	Early Roman	1	11	11	S	Fired	Indet	FC1	small area of moulded surface fired buff with some blackened patches possibly sooting.
1009	**619**	pit	Early Roman	1	15	15	Mudstone	Burnt	natural	nodule	half a spherical mudstone nodule from Gault clay
1285	**1284**	gully/ ditch	Early Roman	4	9	2.25	A	Fired	Indet	FC8	Joining freshly broken frags incompletely recovered. Possibly frags from curving edge of OP, but hard to judge whether surfaces are moulded or sheared and worn.
1429	**1428**	pit	Bronze Age	2	9	4.5	A	Fired	Indet	FC9	amorphous broken frags.
1562	**1563**	ditch	Early Roman	1	8	8	A	Fired	Furniture	OP	smooth well finished moulded surface; other side broken and worn.

Table 28: Fired clay summary catalogue

Context	Feature No	Feature Type	Feature date	No	Wt (g)	MFW	Fab	Class	Form	Object Date	Description
65	**66**	gully		1	5	5	MOD	Indet	Brick?	C20	small fragment with shallow raised ridge between two linear shallow concave grooves.
94	**95**	pit	Early Roman	1	785	785	D	Brick	Brick/ Flat	RB	
101	**102**	ditch	Early Roman	1	89	89	D	Flat	Flat	RB	
128	**127**	tree throw	Early Roman	1	99	99	D	Brick	Brick/ Flat	RB	
159	**157**	channel	Early Roman	1	125	125	D	Tegula	Tegula	RB: AD160-260	On edge, side of c/a and adjacent base looks as though there are finger depressions from pressing clay to shape. Very neat well finished tile.
205	**204**	ditch	Post-med	1	20	20	Y	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	
260	**243**	ditch	Early Roman	1	455	455	D	Brick	Brick	RB	remnants of buff sandy mortar (containing quartz & sparse glauconite sand)
392	**204**	ditch	Post-med	1	4	4	C/D	Indet	Flat	RB	flake from base surface of tile.
401	**400**	ditch	Modern	4	95	23.75	S	Brick (BS)	Brick	PMed	worn broken lumps
495	**494**	furrow	Post-med	1	4	4	C	Indet	Flat	RB	surface flake off base of tile
497	**494**	furrow	Post-med	3	15	5	Y	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	
497	**494**	furrow	Post-med	1	10	10	C	Roof: flat	Roof: flat	Med-Epmed	
497	**494**	furrow	Post-med	1	20	20	Y	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	
500	**501**	furrow	Post-med	1	36	36	C	Roof: flat	Roof: flat	Med-Epmed	
502	**501**	furrow	Post-med	1	30	30	C	Roof: peg	Roof: peg	Med-Epmed	Edge of conical peg hole c. 16mm dia.
513	**434**	structure	Early Roman	1	55	55	~	Indet	Indet	U	~
517	**336**	ditch	Post-med	1	75	75	D	Flat	Flat	RB	Angled cut edge on underside may be part of C1 c/a.
549	**550**	ditch	Post-med	1	57	57	S	Brick (BS)	Brick	Med-Pmed	worn broken amorphous lump

Context	Feature No	Feature Type	Feature date	No	Wt (g)	MFW	Fab	Class	Form	Object Date	Description
549	**550**	ditch	Post-med	1	2	2	E	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	Small fragment.
601	**602**	pit	Early Roman	1	11	11	C	Flat	Flat	U	uncertain date or form, possible imbrex fragment, though cannot discount post-Rom roof tile
637	**638**	ditch	Modern	1	513	513	G	Brick (BS)	Brick	Pmed C17-C18	patches of white mortar attached
775	**776**	ditch	Early Roman	8	184	23	Y	Brick (BS)	Brick	Pmed: C17-C18	
775	**776**	ditch	Early Roman	1	73	73	D	Imbrex	Imbrex	RB	Edge very slightly concave and very slight curvature to tile suggesting angular profile imbrex.
784	**785**	ditch	Early Roman	1	139	139	B	Brick	Brick	RB	
842	**842**	hollow	Early Roman	3	11	3	B	Brick (BS)	Brick?	Pmed?	small worn fragments probably brick. One piece has a smooth brownish surface (some sort of slip?) with shallow linear groove 3mm w.
846	**842**	hollow	Early Roman	1	85	85	D	Flat	Flat/ tegula	RB	
865	**780**	ditch	Early Roman	1	3	3	S	Indet	Brick?	U	white mortar skim over surface.
1104	**1103**	ditch	Post-med	4	14	3.5	Y	Brick (BS)	Brick	Pmed: C17-C18	
1104	**1103**	ditch	Post-med	1	4	4	C	Indet	Flat	U	not sure whether this is RB or later peg tile
1104	**1103**	ditch	Post-med	1	19	19	Y	Roof: flat	Roof: flat	Pmed: C16-C18	
1118	**1117**	natural	Post-med	1	14	14	C	Roof: flat	Roof: flat	Med-Pmed	
1140	**336**	ditch	Post-med	1	51	51	D	Flat	Flat	RB?	At first what I took to be broken edge of flange, looks as though it may be thickening on the inner/lower edge suggesting it may be imbrex rather than tegula.
1175	**780**	ditch	Early Roman	1	138	138	C	Brick	Brick	RB	

Context	Feature No	Feature Type	Feature date	No	Wt (g)	MFW	Fab	Class	Form	Object Date	Description
1205	**204**	ditch	Post-med	2	190	95	U	Brick	Brick	RB	Three finger grooves swiped across side surface 2 parallel to edges forming a right angle and the third bisecting them: so 3 radiating from a corner. Possibly some sort of sig but they don't normally occur on edges.
1222	**1103**	ditch	Post-med	1	34	34	B	Roof: peg	Roof: peg	Med-Pmed	Edge of circular angled peg hole c. 13mm dia and centred 30mm from edge.
1276	**1103**	ditch	Post-med	1	770	770	Y	Brick (BS)	Brick	Med	Rough crude finish suggestive of medieval production, though suggestion is that the Gault clay was not used for bricks till the 18th C.
1276	**1103**	ditch	Post-med	1	65	65	E	Brick (BS)	Brick	Med-Pmed	
1281	**653**	ditch	Early Roman	1	258	258	D	Brick	Brick	RB	
1287	**1103**	ditch	Post-med	1	10	10	D	Indet	Indet	U	broken amorphous scrap; probably post med brick.
1287	**1103**	ditch	Post-med	2	39	19.5	Y	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	
1295	**204**	ditch	Post-med	1	48	48	E	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	
1305	**336**	ditch	Post-med	1	23	23	D	Flat	Flat	RB	
1305	**336**	ditch	Post-med	2	36	18	Y	Roof: peg	Roof: peg	L Med-Epmed: C15-C17	Part of halo of surplus clay thickening around peg hole present on upper surface, but very little of irregular edge of peghole survives.
1329	**204**	ditch	Post-med	1	19	19	E	Roof: flat	Roof: flat	Pmed: C16-C18	
1463	**474**	ditch	Post-med	1	12	12	~	Indet	~		
1344	**1343**	furrow	Post-med	1	72	72	Y	Brick	Brick	RB	mortar over side surface
1344	**1343**	furrow	Post-med	1	11	11	D	Indet	Flat/ Brick?	U	
1344	**1343**	furrow	Post-med	2	4	2	S	Indet	Indet	U	amorphous
1344	**1343**	furrow	Post-med	1	54	54	E	Roof: flat	Roof: flat	L Med-Epmed: C15-C17	trail of white mortar on base

Context	Feature No	Feature Type	Feature date	No	Wt (g)	MFW	Fab	Class	Form	Object Date	Description
1394	**1271**	cultivation row	Early Roman	1	2	2	E	Indet	Flat	U	
1394	**1271**	cultivation row	Early Roman	1	2	2	S	Indet	Indet	RB	
1400	**1103**	ditch	Post-med	1	50	50	C	Roof: flat	Roof: flat	Pmed: C16-C18	
1400	**1103**	ditch	Post-med	17	154	9	Y	Roof: flat	Roof: flat	Pmed: C16-C18	Some joining may all be from one tile. Neat finish
1431	**1103**	ditch	Post-med	15	157	10	Y	Roof: peg	Roof: peg	L Med-Epmed: C15-C17	The thicker tile is quite roughly finished and crude and the oeg hole is quite irregular with surplus clay pressed out around it. Peg hole diameter 10mm.
1465	**194**	ditch	Early Roman	1	222	222	D	Brick	Brick/ Flat	RB	
1495	**194**	ditch	Early Roman	1	25	25	S	Roof: flat	Roof: flat	Med-Pmed	patches of white mortar attached
1505	**1479**	ditch	Post-med	1	2	2	Y	Indet	Flat	L Med-Epmed: C15-C17	
1515	**1442**	furrow	Post-med	1	306	306	D	Brick (BS)	Brick	Med-Pmed	very worn; possible grass impressions on surface.
1515	**1442**	furrow	Post-med	2	306	153	Y	Roof: flat	Roof: flat	Pmed: C16-C18	neat finish
1561	**1561**	layer	Early Roman	1	251	251	D	Imbrex	Imbrex	RB	flat side - angular profile.

Table 29: Ceramic building material summary catalogue

A.10 Clay Tobacco Pipe

By Carole Fletcher

The assemblage

A.10.1 Archaeological works produced a small assemblage of clay tobacco pipe stems including a decorated stem produced by pipe manufacturer S. Wilkinson in Cambridge in the mid 18th century, and a near-complete pipe bowl that can be dated to the mid-late 18th century (Table 30). While the majority of the clay pipe stems can not be closely dated, some stems were recovered alongside post-medieval pottery. From ditch **204** (cut **393**) pottery of mid 18th-19th century was recovered, while the stem from furrow **494** (cut **496**) was found alongside pottery dating from the mid 16th- early 17th century. Finally ditch **1103** (cuts **1103** and **1420**) produced late 18th-early 19th century pottery.

A.10.2 A decorated fragment of stem was recovered from post-medieval furrow **1343**. The design is very similar to that illustrated by Flood (1976, p.35 fig 16 E). There are traces of letters stamped into the stem below the decoration. The remaining letters appear to be 'ILK', part of the name Wilkinson. The makers mark illustrated by Flood shows the full name of the maker as S. Wilkinson Cambridge and the mark is dated to the 18th century. Flood identifies the maker Samuel Wilkinson in the trade directories of the period with the Apprentice Roll of 1766 listing Wilkinson in Holy Trinity parish (Flood 1976 p39-41 table 1).

A.10.3 A near-complete pipe bowl was recovered from post-medieval furrow **1520**. The pipe bowl has rouletting below the short section of surviving rim, the shape is bulbous and the surviving section of heel is large and flat. The bowl most closely matches that of an Oswald type 6. (Oswald, 1975, type 6 p.37).

A.10.4 No further work is recommended.

Context	Cut	Feature No.	No. of stem fragments	No. of bowl fragments	Weight (kg)	Description	Date range
205	**204**	**204**	1		0.005	Fragment of stem	Not closely datable
392	**393**	**204**	1		0.001	Mouth-piece	Not closely datable
497	**496**	**494**	2		0.007	Fragments of stem	Not closely datable
775	**776**	**776**	1		0.001	Fragment of stem	Not closely datable
1104	**1103**	**1103**	2		0.005	Fragments of stem	Not closely datable
1344	**1343**	**1343**	1		0.003	Decorated fragment of stem	Mid 18th century
1380	**1379**	**474**	3		0.003	Fragments of stem	Not closely datable
1400	**1399**	**1103**	1		0.002	Fragment of stem	Not closely datable
1421	**1420**	**1103**	1		0.001	Fragment of stem	Not closely datable
1505	**1504**	**1479**	1		0.003	Fragment of stem	Not closely datable
1519	**1520**	**1520**		1	0.015	Near-complete clay pipe bowl	*c.*1660-80
Total			**14**	**1**	**0.046**		

Table 30: clay tobacco pipe catalogue

A.11 Worked Bone

By Chris Howard-Davis

Introduction and methodology

A.11.1 Two items of worked bone were recovered during the excavation. Each fragment was examined, assigned a preliminary identification and, where possible, date range. Outline database entries were created, using Microsoft Access 2000 format, and the data recorded. The state of preservation (condition) was assessed on a broad four point system (namely poor, fair, good, excellent).

The assemblage

A.11.2 *Quantification*: only two fragments of worked bone were recovered, both of them pin fragments (SF 39 and 40) from Early Roman pit **790** (fills 791 and 792 respectively). Both were in fair condition.

A.11.3 *Date range and evaluation*: only one of the pieces can be dated, being a common Late Roman type (Crummy 1983, type 5).

A.11.4 *Conservation*: the finds are well packed and require no conservation.

A.11.5 *Potential*: the worked bone has only very limited potential to further inform the dating and interpretation of this site.

A.11.6 *Proposed further work*: archival catalogue entries should be updated and a brief comment should be prepared for inclusion into any proposed publication.

Task	Time required/ no. of objects
Complete archive catalogue entries	0.25 days
Write brief report for inclusion in publication	0.25 days

Table 31: Worked bone task list

A.12 Glass

By Chris Howard-Davis

Introduction and methodology

A.12.1 Eleven items of glass were recovered during the excavation. Each fragment was examined, assigned a preliminary identification and, where possible, date range. Outline database entries were created, using Microsoft Access 2000 format, and the data recorded. The state of preservation (condition) was assessed on a broad four point system (namely poor, fair, good, excellent).

The assemblage

A.12.1 *Quantification*: 11 fragments of glass were recovered. All were small, but all were in good condition. Their distribution is shown in table 32.

Context	Feature No.	Feature date	RB Vessel	Post-medieval vessel	Other	*Total*
101	**102**	Early Roman	1			*1*
401	**400**	Modern		5		*5*
435	**434**	Early Roman	1			*1*
791	**790**	Early Roman	1			*1*
842	**842**	Early Roman	1			*1*
844	**842**	Early Roman			1	*1*
1104	**1103**	Post-medieval		1		*1*
Total			*4*	*6*	*1*	*11*

Table 32: distribution of the glass fragments

A.12.2 *Date range and evaluation*: five of the glass fragments came from Early Roman features: ditch **102** (fill 101), structure **434** (fill 435), pit **790** (fill 791), and layer 842, and four of these are likely to be Roman in date (SF 4, 13, 42 and no SF). Although all are very small, little more than chips, three can be identified as probably from mould-blown storage bottles, a common form, and likely to be of first to early third-century date, although the robust nature of these vessels means that they tend to survive well and fragments often appear in later contexts. The fourth fragment is from a thin-walled vessel in a bubbly bluish metal. The remainder of the fragments are in the dark green metal typical of wine/beer bottles from the later seventeenth to the nineteenth century, and although fragments are small, the cylindrical body implied by some of the fragments suggests late eighteenth or nineteenth-century forms.

A.12.3 *Conservation*: the finds are well packed and require no further cleaning or conservation.

A.12.4 *Potential*: the glass has, effectively, no potential to contribute to the dating or interpretation of the site.

A.12.5 *Proposed further work*: archival catalogue entries should be completed and a brief comment be prepared for incorporation into the main stratigraphic/publication text (0.25 days).

Appendix B. Environmental Reports

B.1 Human Skeletal Remains

By Zoë Uí Choileáin

Introduction

B.1.1 A small collection of human skeletal remains (HSR) in the form of cremated bone was retrieved during excavation. In total four deposits were recovered from four small, shallow pits, dated provisionally as Early Roman. All had very low bone weights and were most likely token burials.

Methodology

B.1.2 Analysis of the bone was undertaken in accordance with the guidelines laid out by McKinley (2004). Animal bone was identified by macroscopic appearance where possible. All human bones identified were separated into the following four categories: upper limb, lower limb, axial and skull.

B.1.3 The potential for full analysis was assessed by following the guidelines laid out by McKinley (2004).The weight (in grams) of each fraction size was recorded and the total weight noted. Fragment size and colour were recorded based upon a macroscopic examination of the bones. The potential for full analysis has been noted. A full analysis will examine evidence for particular funerary rites (for example whether there was any preference for retaining particular body parts for burial). It will also examine the nature of the deposit (whether it is redeposited pyre debris or a cremation), and will allow the biological parameters to be estimated; minimum number of individuals (Mni), age and sex.

Context	Feature No.	Date	Deposit type	disturbance	Colour of Bone	Total weight of bone (g)	Degree of fragmentation	comments
308	**309**	Undated	Unurned cremation	undisturbed	Buff white	2	4-2mm	Mni 1 individual
431	**432**	undated	Unurned cremation	undisturbed	Buff white-black	20	Primarily 10-4mm but largest frag 12mm	Mni 1 individual Skull? Long bone frags. Adult
810	**809**	undated	Unurned cremation	undisturbed	Buff white-black	48	Primarily 10-4mm largest frag size 31.41	Mni 1 individual Skull, long bone frags, Adult
820	**819**	undated	Unurned cremation	undisturbed	Buff white-blue grey	7	4 - 10mm	Mni 1 individual. Adult

Table 33: Summary of the HSR

B.1.4 All four deposits of cremated remains were recovered from small pits no deeper than 0.2m. The pits were probably truncated to varying degrees but even allowing for this it

is judged that the very small bone weights represent token cremation burials as opposed to disturbed cremation burials. Studies within modern crematoriums have shown that the average weight of a complete human body generally lies between 1600 to 3000g (McKinley 1989). The largest cremation at the current site weighed 48g implying that only a very small percentage indeed was recovered for burial.

B.1.5 The colour of the bone fragments was primarily buff white on one side and blue-grey or even black on what would have been the interior surface of the bone. Bone colour is an indicator as to the temperature of the pyre the individual was cremated upon. In this case, while the outside surface of many bone fragments was a buff white indicating temperatures of over 600° C, the inner surface was still black suggesting a temperature of 300° (McKinley 2004, 12). It possible that this is a result of the body being removed from the pyre too early.

B.1.6 There were very few cracks and fissures to be observed upon the cremated fragments, however, some longitudinal and transverse fractures were observed. Fractures like this are the result of bone heating then cracking as soft tissues and muscles shrink (Schmid and Symes 2008, 43). These can be used as evidence that the bodies were cremated while there was still flesh upon the bone (McKinley 1994).

B.1.7 Three of the cremation burials were determined to be adult by general size and robustness of the long bone and skull fragments. Cremation burial (308) (cut **309**) was too fragmented for any age to be determined. No estimation of sex was possible and no pathology was observed on the remains.

Summary of potential and recommendations for further work

B.1.8 The small size of all four cremation deposits means that there is very little potential for further analysis. In general the degree of fragmentation will not allow for any pathology to be observed or for any estimation of sex. There are no identifiable fragments suitable to narrow the age estimation.

B.1.9 As all of the cremations are currently undated a detailed discussion of funerary practice with comparisons is not possible. It may be useful for radiocarbon dating to be considered, however, only cremation burials (431) (cut **432**) and (810) (cut **809**) contain bone fragments suitable for this.

B.1.10 It is considered that the potential for these cremation burials to provide further information is so low that no further work is necessary except for radiocarbon dating in order that the deposits can be placed in context.

B.2 Environmental samples

By Rachel Fosberry

Introduction

B.2.1 Eighty-one bulk samples were taken during the excavations. Environmental remains from the evaluation (the '2020 lands') have shown that preservation of plant remains by carbonisation was very poor although there was evidence for the 'cultivation and consumption of wheat in the Roman period' from Site III (Simmons 2005) which is the main area covered by the current excavations.

B.2.2 Most of the deposits sampled date from either the Bronze Age or the Early Roman period and include ditches, watering-holes, pits and features relating to possible structures. Five monolith samples were taken for pollen studies with three chosen for initial assessment (Rutherford, this report). Mollusc assessment has not been undertaken at this stage.

B.2.3 The purpose of this assessment is to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal. The initial results showed that preservation was variable with many of the deposits being devoid of any plant remains whilst a number of deeper features have waterlogged plant material present and specific features dating to the Roman period contain good carbonised (charred) remains. Waterlogged plant remains are of particular value for providing information on the surrounding environment of a site whereas carbonised plant remains primarily relate to agriculture and domestic, culinary activities.

Methodology

B.2.4 For this initial assessment, a single bucket of soil of each sample (volume of up to 10 litres) was processed by tank flotation using modified Siraff-type equipment. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Tables 34 and 35. Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands and the authors' own reference collection. Nomenclature is according to Stace (2010). Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

B.2.5 For the purpose of this initial assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories:

= 1-10, ## = 11-50, ### = 51+ specimens #### = 100+ specimens

B.2.6 Items that cannot be easily quantified such as charcoal and snails have been scored for abundance:

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

Results

Bronze Age samples

B.2.7 Seventeen bulk samples were taken from Bronze Age deposits from pits, watering holes, ditches and a tree-throw.

Sample Number	Context	Feature no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes	Weed Seeds	Charcoal <2mm
11	223	**180**	waterhole	50	0	0	0	##	0
12	181	**180**	waterhole	50	0	0	0	##	0
16	320	**295**	ditch	40	0	#	0	0	+
17	346	**334**	ditch	0	0	0	0	0	0
24	486	**334**	ditch	40	0	0	0	0	0
73	1228	**334**	ditch	1	0	0	0	0	0
76	1326	**334**	ditch	1	0	0	0	0	0
19	361	**362**	pit	5	0	0	0	0	+
23	478	**429**	ditch	0	0	0	0	0	0
31	481	**429**	ditch	10	#	0	#	0	+
35	630	**621**	pit/ waterhole	10	0	0	0	0	+
36	625	**621**	pit/ waterhole	1	0	0	0	0	+
80	1429	**1428**	pit	1	0	0	0	0	0
81	1488	**1487**	tree throw	1	#	0	0	#	0
86	1553	**1552**	waterhole	60	0	0	0	0	0
87	1556	**1552**	waterhole	20	0	0	0	0	0
88	1557	**1552**	waterhole	180	0	0	0	##	0

Table 34: Samples from Bronze Age deposits

*Watering holes **180**, **621**, **1552***

B.2.8 Three watering holes were investigated; both of the organic-rich fills 181 (Sample 12, depth 0.36m) and 223 (Sample 11, depth 0.32m) of watering hole **180** contain waterlogged plant material, mainly in the form of rootlets and poorly preserved humic matter. Both samples contain seeds of wetland plants such as sedges (*Carex* spp.) and gypsywort (*Lycopus europaeus*) and both were colonised with pondweed (*Potamogeton* spp.) and water-crowfoot. Other seeds that occur in low numbers are thistles (*Carduus*/*Cirsium* sp.), goosefoots (*Chenopodium* sp.), buttercup (*Ranunculus* acris/repens/bulbosus), dock (*Rumex* sp.) and knotgrass (*Polygonum aviculare*) and most likely represent plants that were growing nearby. All are high seed producers and may represent single plants rather than an area of scrubland. A seed of watercress (*Nasturtium officinale*) was noted in fill 181 suggesting that this semi-aquatic plant was growing within the feature.

B.2.9 Neither of the two fills (625 and 630) of waterhole **621** contain any preserved plant material other than sparse charcoal despite being sampled at a depth of 0.45m. It is possible that this feature was a pit rather than a water-filled feature. Only the primary fill 1557 (depth of 0.64m) of waterhole **1552** contained waterlogged material (sample 88), which is poorly preserved and low in both density and diversity. Seeds of the obligate aquatic, water crowfoot (*Ranunculus* subgenus *Batrachium*) are most common. Occasional small trigonous seeds of sedge were noted along with a single fragmented seed of bramble (*Rubus* sp.). All of these plant species produce seeds that have a tough outer coat (testa) that is particularly resistant to decay, indicating that the absence of other plant species is due to lack of preservation.

Pits and three-throw

B.2.10 None of the pits sampled contain any preserved plant remains. Fill 1488 (sample 81) of tree throw **1487** contains a single indeterminate poorly-preserved charred cereal grain and a small fragment of charred hazelnut shell (*Corylus avellana*).

*Ditches **323**, **334**, **429***

B.2.11 None of the samples from the four slots through ditch **334** contain preserved plant remains. The upper fills of ditches **323** (fill 320) and **480** (fill 481, group 429) both contain sparse charred plant remains including a charred culm node in fill 323 (sample 16) and a single spelt (*Triticum spelta*) grain and a fragment of a charred legume in fill 481 (sample 31).

Early Roman samples

B.2.12 Fifty-nine samples were taken from Early Roman deposits. Features included two cremations, ditches, pits, cultivation strips, a well and a watering hole.

Sample Number	Context	Feature no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes
14	308	**309**	cremation	1	0	0	0
20	431	**432**	cremation	5	0	0	0
1	42	**9**	ditch	15	###	#	0
74	1285	**1284**	ditch	3	#	0	0
34	613	**137**	ditch	60	0	0	0
18	428	**194**	ditch	0	0	0	0
13	245	**243**	ditch	2	#	0	0
32	540	**535**	ditch	20	#	#	0
53	834	**592**	ditch	0	0	0	0
52	830	**640**	ditch	30	##	###	0
59	953	**640**	ditch	60	##	###	0
45	764	**653**	ditch	10	0	0	0
43	676	**658**	ditch	10	#	0	0
44	702	**703**	ditch	15	0	0	0
49	807	**765**	ditch	10	0	0	0
82	1502	**780**	ditch	20	#	0	0
72	1235	**786**	ditch	5	0	0	0
65	1015	**1077**	ditch	10	#	##	0

Sample Number	Context	Feature no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes
66	1078	**1077**	ditch	5	#	#	0
67	1109	**1077**	ditch	0	0	0	0
68	1109	**1077**	ditch	5	0	0	0
69	1202	**1077**	ditch	0	0	0	0
70	1202	**1077**	ditch	5	0	0	0
75	1306	**1077**	ditch	2	#	#	0
78	1398	**1389**	ditch	30	#	0	0
41	671	**672**	ditch	100	0	0	0
9	175	**174**	cultivation strip	1	0	0	0
25	299	**174**	cultivation strip	50	0	0	0
8	188	**189**	cultivation strip	10	0	0	0
15	325	**189**	cultivation strip	50	0	0	0
30	325	**189**	cultivation strip	0	0	0	0
26	455	**379**	cultivation strip	20	0	0	0
29	455	**379**	cultivation strip	30	0	0	0
27	382	**383**	cultivation strip	20	0	0	0
28	472	**471**	cultivation strip	20	0	0	0
77	1392	**1391**	cultivation strip	2	##	0	0
57	949	**948**	gully	30	##	#	0
60	845	**842**	hollow	60	0	0	0
2	98	**96**	pit	20	0	0	0
42	681	**680**	pit	20	##	###	0
46	792	**790**	pit	15	#	0	0
47	794	**793**	pit	10	0	0	0
54	905	**904**	pit	30	##	###	0
55	906	**904**	pit	15	##	##	0
58	929	**931**	pit	10	##	##	0
56	947	**946**	pit	30	##	##	0
79	1438	**1426**	pit	20	#	0	0
38	618	**619**	pit	80	###	##	0
39	633	**619**	pit	120	##	##	0
40	647	**619**	pit	140	###	####	0
61	647	**619**	pit	5	##	###	0
62	1009	**619**	pit	10	##	###	0
63	1009	**619**	pit	5	##	####	0
64	1009	**619**	pit	10	#	###	0
21	435	**434**	structure	25	#	0	0
22	444	**434**	structure	20	#	0	0
48	538	**535**	structure	10	0	0	0
5	179	**160**	well	80	0	0	0

Sample Number	Context	Feature no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes
6	208	**160**	well	80	#	0	0

Table 35: Samples from Early Roman deposits

Pits

B.2.13 Nineteen samples were taken from pit fills, seven of which were located in the north-eastern part of the site and form pit group **619**. Feature **619** was a large pit or hollow that had numerous small stake holes in the base and was filled with a homogeneous black deposit that was sub-sampled during excavation and found to contain abundant spelt wheat processing waste. Several features surrounding this feature, including pits **680** (which also had stake holes), **634**, **648**, **904**, **931** and **946** also contained dark deposits that have produced similar assemblages. Flot volumes are variable and range from 15ml to 140ml from 10L samples but they are almost entirely comprised of charred plant remains. Pit group **619** and **680** both contain rich assemblages in which spelt chaff in the form of glume bases, spikelet forks and rachis fragments predominate and the ratio of chaff to grain is extremely high. Spelt grains are also present and in fill 618 of pit **619** (sample 38) some of the grains have germinated. Other plant species occur rarely and include barley grains, medium-sized grass seeds (*Poaceae*) and docks (*Rumex* sp.). Pits **904** (sample 54, fill 905 and sample 55, fill 906), **931** (sample 58, fill 929) and **946** (sample 56, fill 947) are clustered together in an area just south of pit group **619** and also contain significant quantities of spelt chaff and grain although the ratio of chaff:grain appears to be less extreme. Occasional barley grains are also present along with seeds of brome (*Bromus* sp.), medium-sized grasses, docks and clover (*Trifolium* sp.).

B.2.14 Two samples were taken from structure **434** that resembled a sunken-feature building but is Early Roman in date. Both samples (sample 21, fill 435 and sample 22, fill 444) contain only single charred grains. Such findings of sparse grains are consistent with SFBs of Anglo-Saxon dates and are thought to be the result of grain falling through the floorboards.

B.2.15 Two samples were taken from cremation pits **309** and **432**. Both samples produced small amounts of calcined human bone with only sparse amounts of charcoal. They are thought to be token burials (Zoe Ui Choilean) and the lack of charcoal supports this interpretation in that the bone has obviously been picked clean of any pyre material.

Ditches

B.2.16 Twenty-two samples were taken from ditch fills. Fourteen of the samples contain charred plant remains, predominantly as small quantities of charred spelt wheat and barley grains. The most meaningful assemblages representing deliberate deposits are found in ditch **9** (located along the haul road) and ditch **640** (cuts **829** and **954**). Sample 1, fill 42 of ditch **9** produced a small flot volume (15ml) that is almost entirely comprised of charred grain. Most of the grains are poorly preserved, abraded and fragmented but some of the better-preserved grains have the morphology of spelt wheat. This identification is confirmed by the presence of spelt wheat glume bases which are also poorly preserved but are evidence of chaff. Charred weed seeds are rare with only occasional seeds of the crop weeds brome (*Bromus* sp.) and dock (*Rumex* sp.) present. Samples 52 and 59 from ditch **640** are situated close to pit group **619**. Both samples contain similar assemblages of predominantly spelt wheat chaff (glume bases and rachis fragments) and smaller percentages of spelt grain. These assemblages are very

similar that those from pit group **619** and are likely to have derived from the same process.

B.2.17 Seven samples were taken from ditch **1077** (cuts **1010**, **1016**, **1077**, **1203**, **1307**, **1397**), an enclosure thought to be associated with metalworking due to the recovery of slag during hand excavation. The samples do contain hammerscale but only in very sparse quantities. Occasional charred grains of spelt and barley occur in a few of the samples along with a few spelt glume bases but, significantly, charcoal is absent from these samples.

*Well **160**, waterhole **1426***

B.2.18 Both fills 179 (sample 5) and 208 (sample 6) from well **160** contain similar assemblages of waterlogged plant material in the form of roots and seeds along with occasional insect fragments. The seeds are relatively well preserved and represent plants that are likely to have been growing close to the feature including scrub-like plants such as goosefoot, dead nettle (*Lamium* sp.), buttercup (*Ranunculus* sp.), brambles, sow-thistles (*Sonchus* sp.) and thistles in addition to hemlock (*Conium maculatum*) which is a poisonous plant that prefers damp habitats. Seeds of water-crowfoot and pondweed are likely to have colonised the water within the well even at the time of use. Occasional sedge seeds may indicate that these plants, which also require damp soils, may have been growing around the edge of the well. Stinging nettles (*Urtica dioica*) and henbane (*Hyoscyamus niger*) are nitrogen loving plants that commonly grow in soils that have been enriched with animal dung and may be indicative of animals grazing nearby. Carrot (*Daucus carota*) seeds occur in both samples although most abundantly in fill 208. It is not possible to distinguish between the cultivated and wild forms of this plant.

B.2.19 The basal fill (1438) of waterhole **1426** (sample 79) contains a single charred spelt grain and no evidence of waterlogging.

*Cultivation strips (**174**, **189**, **379**, **383**, **471**), Cultivation ditches **1284**, **1391***

B.2.20 None of the nine samples taken from the cultivation strips contain any preserved plant remains or finds. Ditches **1284** and **1391** were within the sets of shorter cultivation beds to the east. The fill (sample 74, fill 1285 and sample 75, fill 1391) of both ditches contains occasional charred spelt grains that are poorly preserved and appear to have degraded prior to deposition. It is possible that they indicate the use of midden or domestic refuse that has been used to manure the cultivation trenches or they could have been accidentally incorporated through wind-blown refuse.

Undated cremations

B.2.21 Two other cremations, **809** and **819**, were also found to contain small amounts of calcined bone. They differ slightly from those dated to the Early Roman period in that they both contain more charcoal although volumes were small (approx 5ml).

Discussion

B.2.22 The deposits sampled date to the Bronze Age and Early Roman periods. Environmental evidence from the Bronze Age samples is poor with only a few samples containing charred plant remains. The highest potential comes from waterhole **1552**; features of this type act as a trap for seeds and pollen that are blown in and sink to the bottom. Unfortunately survival of plant material is not particularly good and is mainly restricted to the more durable seeds that have tough outer coats and are most resistant to decay. The lower deposits from waterhole **180** have been assessed for pollen survival, which is

also poor. It is possible that these deposits have dried out at some point, which would account for the differential preservation of plant remains. It is also possible that they were short-lived features that did not allow enough time for accumulation of pollen.

B.2.23 There is far greater evidence of activity in this area in the Early Roman period. At least two areas were marked out for cultivation with a series of parallel ditches or beds, apparently deliberately sited in a lower-lying area. These strip patterns are seen on a number of sites in the region, including most locally at The Bell Language School (Bush 2015), and appear to be an Early Roman phenomenon linked to the cultivation of a specific (as yet unknown) crop or crops. There is no evidence of root holes in the ditches, which are always uniform in width and usually flat-bottomed. The deliberate shape and depth of the examples at the CBC and Bell Language School suggest the beds themselves were used for cultivation, rather than the spoil being piled up between them to create a raised bed. If this is the case and given the wet ground conditions at the CBC it means that whatever was growing in the beds was tolerant of wet, sometimes waterlogged conditions and /or required a lot of water. Plant remains and pollen are rarely preserved in the features, precluding full interpretation. Plants such as root vegetables and herbs are usually grown from seed and harvested prior to them setting seed (other than a few plants that are grown specifically for their seed such as coriander and fennel or to procure seeds for future cultivation). It is unlikely that any seeds would be preserved in the soils but pollen survival should be possible. None of the samples from the cultivation ditches at either the CBC or the Bell Language school contain preserved plant remains or pollen although two associated ditches did contain abraded charred cereal grains. Sampling of a contemporary waterlogged deposit could potentially lead to the recovery of both pollen and plant remains that may relate to what plants were being grown in the strips. The two waterlogged samples from Roman well **160** both contain moderate assemblages of both seeds and pollen. Initial assessment has revealed a mixed-herb assemblage of plants that commonly grow on disturbed soils and wastelands. There is tantalising evidence of both seeds and pollen of carrot but, as cultivated carrot is a domesticated form of the wild variety, it is is not possible to distinguish between the two. Also, well **160** was 75m from the closest of the cultivation beds and could easily have blown in from elsewhere. Further analysis of these samples may provide further possibilities of cultivated plants.

B.2.24 Evidence of cereal production is extensive and confined to two areas in the north-east of the site. Spelt wheat is most prevalent and has been identified by the substantial quantities of charred chaff that have been included in the backfill of several pits and ditches. Spelt is a hulled wheat that was favoured throughout the Roman period in Britain (Greig 1991) and would have grown particularly well in this region. The grain is enclosed in outer chaff that needs to be parched before it could be lightly ground/pounded to release the grain. The abundance of charred chaff recovered from these deposits is likely to be evidence of this spelt processing waste being used as fuel for some unidentified industrial process. The waste would have originally consisted of straw which was made up of the stem of the cereal, the remains of the 'ear' and the outer chaff that surrounded the grain and attached it to the ear. Experimental burning of glume wheats has shown that the cereal stems are less likely to survive being burnt in a fire and that grains survive the process better that the lighter chaff elements (Boardman and Jones 1990).The high proportion of chaff to grain in these deposit is therefore likely to reflect the original composition of the assemblage. Chaff would have been an important economic commodity with a variety of uses including fodder, tempering, flooring material and fuel (Hillman 1981, van der veen 1999). The purpose of the chaff recovered from this site is not yet clear. Pits **619** and **680** both contained stake holes

which probably relate to their original function and may provide some clues. It is possible that some of the stages of crop-processing took place here but there is no direct evidence. The cereal remains are burnt but there is no *in-situ* burning in the features indicating that the burnt material has been used to backfill the features.

B.2.25 A possible industrial activity that may have required the use of chaff as fuel is metalworking. Ditch group **1077** consists of a rectangular enclosure ditch from which a significant quantity of slag has been recovered. It was hoped that the bulk samples would assist in the interpretation of this enigmatic area. Flakes and spheroids of hammerscale are present in most of the samples from the enclosure ditch, which is evidence of iron working/blacksmithing activities taking place in the vicinity of this area but the quantities of these magnetic residues are too low to substantiate an interpretation that this is an iron-working area. There is a distinct lack of charcoal in the ditch fills. If this feature was contemporary with the chaff-filled pits and ditches to the north, it is highly likely that there would be evidence of the chaff within these features as it is a light material that would have blown around the site.

Statement of potential

B.2.26 The environmental samples from the Bronze Age deposits have no potential for further archaeobotanical analysis. The only samples containing contemporary plant remains are poorly preserved and no further work is recommended.

B.2.27 During the Early Roman period, the site was an area of cultivation and industrial activities, which involved the burning of substantial amounts of spelt processing waste. Further study of these samples is considered essential for understanding the nature of these assemblages in accordance with the current published edition of the Research Agenda of the East of England (Medlycott 2012), which includes production and processing of cereals and craft industries.

Recommendations for further work

B.2.28 Full analysis is hoped to reveal the composition and differences in distribution of the charred cereal processing waste within individual features such as pit **619** and associated features. Analysis of the waterlogged deposits within well **160** will establish a list of plant species growing in the vicinity of the well and may provide clues as to which plants were being cultivated.

Timescales

B.2.29 Full analysis of waterlogged samples from well **160** including processing of 3 x 1L sub-samples = 3.5 days

B.2.30 Full analysis of charred plant remains from 13 samples (Ditch **9**, pit **619** and associated deposits – Table 36) including processing of additional soil = 13 days

B.2.31 Tabulation and report = 2 days

Sample No.	Context No.	Feature No	Feature Type	Sample volume (L)	Comments
1	42	**9**	ditch	10	burnt layer in finds-rich Early Roman ditch
38	618	**619**	pit	19	three samples from pit/hollow **619** – west of **680** and contained small stakeholes
39	633	**619**	pit	20	three samples from pit/hollow **619** – west of **680** and contained small stakeholes
40	647	**619**	pit	18	three samples from pit/hollow **619** – west of **680** and contained small stakeholes
42	681	**680**	pit	16	east of **619** and contained small stakeholes
52	830	**829**	ditch	18	two slots (with **954**)through same ditch to east of **901**
54	905	**904**	pit	19	pit associated with pit **901**, not far from **619**
55	906	**904**	pit	10	pit associated with pit **901**, not far from **619**
56	947	**946**	pit	18	pits and ditch associated with pit **901**, not far from **619**
57	949	**948**	gully	18	ditch associated with pit **901**, not far from **619**
58	929	**931**	pit	17	close to pit **901**
59	953	**954**	ditch	10	two slots (with **829**) through same ditch to east of **901**
62	1009	**619**	pit	34	Pit **619**

Table 36: Samples containing charred plant assemblages worthy of full analysis

B.3 Faunal Remains

By Chris Faine

Introduction and methodology

B.3.1 An assemblage of animal bone weighing a total of 46.9kg was recovered during the excavation. The material was recovered from a variety of features including pits and linear features dating principally to the Bronze Age and Early Roman periods, with some material recovered from post-medieval contexts. The preservation of the assemblage is generally good, although fragmented due to butchery.

B.3.2 Faunal material was scanned with all "countable" bones being recorded on a specially written MS Access database. The overall species distribution in terms of fragments (NISP) is shown in Table 37. The numbers of ageable mandibles and epiphyses are recorded in Tables 38 and 39. Available measurements are recorded in Table 40. The counting system is based on a modified version of the system suggested by Davis (1992) and used by Albarella and Davis (1994). Completeness was assessed in terms of diagnostic zones (Dobney & Reilly 1988). Ageing was assessed via tooth wear (Grant 1982). Bird, fish and small mammal remains were noted but not identified to species at this stage.

The assemblage

B.3.3 As mentioned above Table 37 shows the numbers of identifiable fragments by phase. By far the largest number (NISP: 223) was recovered from Early Roman contexts with smaller numbers from Bronze Age and post-medieval deposits. The Early Roman assemblage is sufficiently large for a meaningful analysis of body part distribution for cattle, sheep and horse. Cattle is the dominant taxon in all phases with smaller numbers of sheep and horse remains. Horse is the second most prevalent species in the Early Roman sample. Other species are rare, consisting of a portion of red deer antler from Bronze Age waterhole **180** (primary fill 181) and dog remains from Bronze Age waterhole **1552** (secondary fill 1553) and Early Roman ditches **9** (primary fill 10) and **653** (fill 1281). A partial sheep cremation was recovered from a small Early Roman pit (**96**, fill 98; sample 2).

B.3.4 As one would expect the largest number of ageable epiphyses was recovered from the Roman sample, with smaller numbers of available Bronze Age and post-medieval elements. Ageable mandibles were only recovered from Roman contexts with multiple mandibles (cattle and horse), being recovered from ditches **9** (primary fill 10) and **653** (cut **654**, fill 656). Metrical data is mostly available from the Roman cattle and sheep assemblage, with smaller amounts of Bronze Age material.

Potential and recommendations

B.3.5 This is a small to medium sized assemblage with some potential for further work, particularly in comparing the Early Roman material with other nearby sites, including the Bell Language School (Bush 2015) Clay Farm (Phillips and Mortimer 2012) and the Fawcett School (Phillips, forthcoming).

B.3.6 Time-scale for further work:

Recording: 5 days

Data analysis: 2.5 days

Report writing: 2 days

Total: 9.5 days

	Phase				
	Bronze Age	**Early Roman**	**Post-Medieval**	**Unphased**	**Total**
Cattle (*Bos*)	20	108	12	10	**150**
Sheep/Goat (*Ovis/Capra*)	1	35	2	0	**38**
Horse (*Equus*)	3	71	0	3	**74**
Red Deer (*Cervus elaphus*)	1	0	0	0	**1**
Dog (*Canis familiaris*)	1	9	0	0	**10**
Total:	**26**	**223**	**14**	**13**	**273**

Table 37: Number of countable bones

	Phase				
	Bronze Age	**Early Roman**	**Post-Medieval**	**Unphased**	**Total**
Cattle (*Bos*)	18	60	6	4	**88**
Sheep/Goat (*Ovis/Capra*)	2	16	0	0	**18**
Horse (*Equus*)	4	39	0	0	**43**
Total:	**24**	**115**	**6**	**4**	**149**

Table 38: Number of ageable epiphyses

	Early Roman
Cattle (*Bos*)	10
Sheep/Goat (*Ovis/Capra*)	1
Horse (*Equus*)	10
Total:	**21**

Table 39: Number of ageable mandibles

	Phase		
	Bronze Age	**Early Roman**	**Total**
Cattle (*Bos*)	2	22	24
Sheep/Goat (*Ovis/Capra*)	1	4	5
Horse (*Equus*)	1	27	28
Dog (*Canis familiaris*)	0	1	1
Total:	**4**	**54**	**58**

Table 40: Number of measurable bones

B.4 Pollen assessment

By Mairead Rutherford

Introduction

B.4.1 Six sub-samples were submitted for pollen assessment. The sub-samples comprise two from a Bronze Age waterhole, two from a Roman well and two from a Roman ditch, as detailed below (Table 41).

Sample number	Context	Cut number	Feature	Lithology
10	***224*** (top) ***223***(base)	**180**	Bronze Age waterhole	Grey/brown clay
7	***179*** (top) ***208*** (base)	**160**	Roman well	Grey silty clay
83	***426*** (top) ***428*** (base)	**424** (feature no. **194**)	Roman ditch	Grey/brown silty clay

Table 41: sub-samples from monoliths

Quantification

B.4.2 Volumetric samples were taken from 6 sub-samples and one tablet containing a known number of Lycopodium spores was added so that pollen concentrations could be calculated (Stockmarr 1971). The samples were prepared using a standard chemical procedure (method B of Berglund and Ralska-Jasiewiczowa 1986), using HCl, NaOH, sieving, HF, and Erdtman's acetolysis, to remove carbonates, humic acids, particles > 170 microns, silicates, and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000cs silicone oil. Slides were examined at a magnification of 400x by ten equally-spaced traverses across two slides to reduce the possible effects of differential dispersal on the slides (Brooks and Thomas 1967) or until at least 100 total land pollen grains were counted. Pollen identification was made following the keys of Moore *et al* (1991), Faegri and Iversen (1989), and a small modern reference collection. Plant nomenclature follows Stace (2010). The preservation of the pollen was noted and an assessment was made of the potential for further analysis. Fungal spore identification and interpretation followed van Geel (1978) and van Geel and Aptroot (2006).

Results

B.4.3 Two of the assessed sub-samples, from Roman well **160**, contained good to moderate pollen assemblages, and some pollen was recorded from sub-samples taken from Bronze Age watering hole **180** but the sub-samples from Roman ditch **424** did not yield any pollen.

*Bronze Age waterhole **180***

B.4.1 Sample 10 (224) (top) and (223) (base): Recovery of pollen is quite sparse. Tree pollen including single occurrences of hazel-type, alder, lime (*Tilia*) and pine (*Pinus*) are present. Grass pollen is present in both sub-samples but other herbs associated with

grassy, open or waste areas, including ribwort plantain, dandelion-type and broad-leaved dock are recorded only in context (223). Microcharcoal is present. The assemblage is too sparse for any meaningful interpretation.

*Roman well **160***

B.4.2 Sample 7 (179) (top): The best recovery of pollen was from this sub-sample. Herb pollen appears to dominate the assemblages, but there is some tree pollen present, of which hazel-type (*Corylus avellana*-type) occurs most commonly, with presence also of alder (*Alnus*) and oak (*Quercus*) pollen. Grass (*Poaceae*) pollen dominates the herb assemblage, along with a range of other pollen taxa, including *Amaranthaceae* (goosefoot family, including plants such as fat hen, fig-leaved goosefoot and common orache), *Apiaceae* (carrot family, a large group including plants such as burnet-saxifrages, angelica and wild parsley), pollen of dandelion-types (*Taraxacum*-type), daisy-types (*Asteraceae*), mugworts (*Artemisia*), knotgrass (*Polygonun aviculare*), ribwort plantain (*Plantago lanceolata*), sedges (*Cyperaceae*) and pollen of *Brassicaceae* (cabbage family, another large group including plants such as garlic mustard, whitlowgrasses and candytufts). A diverse assemblage of fungal spores is recorded, including *Sporomiella* (HdV-113), *Podospora* (HdV-368), *Chaetomium* (HdV-7A), *Sordaria* (HdV-55) and *Glomus* (HdV-207). The rare presence of a specimen of *Trichuris* (HdV-53), eggs of the intestinal parasite whipworm, is also noted. Microcharcoal counts are moderate.

B.4.3 Sample 7 (208) (base): A similar but less rich pollen assemblage to that outlined above (sample 7, (179)), this sub-sample is distinguished by the presence of cereal-type pollen grains and the absence of a diverse fungal spores assemblage.

B.4.4 The pollen assemblages from sample 7 provide evidence to suggest a largely open, grassy palaeoenvironment, with herb pollen representing plants of waysides and waste ground, for example dandelion-types, daisy-types and mugworts. Knotgrass too has been described from all sorts of open areas (Stace 2010), as well as being associated with arable farming (Behre 1981). Cereal-type grains, present in the lower part of the sample (fill 208), may represent cultivated or wild varieties, as the dimensions of some cereal-type grains overlap with those of wild aquatic or marsh grasses, such as sweet-grasses (*Glyceria*) (Andersen 1978), causing difficulty in positive identification of a grain as definitely representing a cultivated cereal variety. If representative of a cultivated variety, cereal-type pollen in the sediments may have derived from arable land or in materials such as straw, human faeces or animal dung incorporated into the well sediments. Fungal spores occur in greater numbers in the upper context (179) and include *Chaetomium* (HdV-7A), *Sordaria* (HdV-55A/B), *Sporomiella* (HdV-113) and *Podospora* (HdV-368 and *Glomus* (HdV-207). *Chaetomium* (HdV-7A) is known to be cellulose decomposing and may occur on plant remains, fibre and dung. In archaeological contexts, it may occur in settlements where dung, damp straw, cloths or other suitable substrates may have been present (van Geel and Aptroot 2006). The fungal spores *Sporomiella* (HdV-113) and *Sordaria* (HdV-55A/B) are coprophilic and *Podospora* (HdV-368) is associated with man and animals (*ibid*). The presence of *Trichuris* (HdV-53), eggs of the intestinal parasite whipworm, are associated with human faeces but the parasite can also infect other animals such as pigs or mice.

B.4.5 There is no record for pollen of aquatic plants or freshwater algae, but the occurrence of pollen of sedges may suggest a damp or wet area, consistent with the interpretation of the site as that of a well. Moderate quantities of microscopic charcoal are present, and appear to increase within the upper context, suggesting a possible increase in the dumping of burnt matter within the well.

*Roman ditch **424** (feature no. **194**)*

B.4.6 Sample 83 (426) (top) and(428) (base): Recovery of pollen is very poor, with a single grain of grass pollen and a single *Sphagnum* moss spore present in context (426). Both sub-samples contained some microcharcoal.

Potential

B.4.7 Pollen from sample 7 should be analysed to provide a detailed palaeoenvironmental reconstruction. There is a tentative suggestion from the assessment that the area around the well may show a change in usage from possible arable cultivation within the lower part of the sample, to one of pastoral agriculture within the upper context.

Recommendations

B.4.8 It is suggested that sub-samples are taken at regularly spaced 0.04m intervals (approximately 12 samples) to permit a full analysis.

Sub-sampling sample 7	1 day
Lab-time/preparation	1.25 days
Analysis of 12 sub-samples	10 days
Tilia and reporting	3 days
Total	15.25 days

Table 42: recommended analysis

APPENDIX C. C14 CERTIFICATES

Scottish Universities Environmental Research Centre

Scottish Universities Environmental Research Centre
Director: Professor R M Ellam
Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride, Glasgow G75 0QF, Scotland, UK
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

18 March 2015

Laboratory Code	SUERC-58618 (GU36747)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	CAMCBC13
Context Reference	181
Sample Reference	SF 7
Material	Wood : unidentified
$\delta^{13}C$ relative to VPDB	-27.7 ‰
Radiocarbon Age BP	3152 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

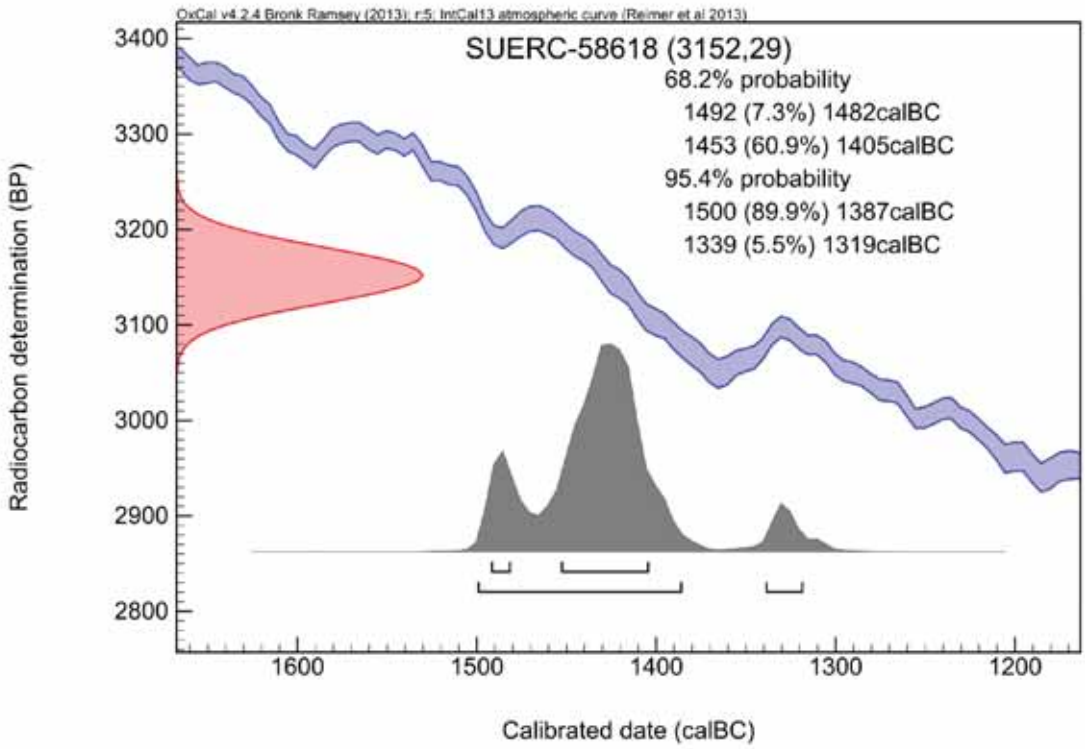
Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 18/03/2015

Checked and signed off by :- P. Naysmith Date :- 18/03/2015

University of Glasgow

THE UNIVERSITY OF EDINBURGH

Calibration Plot



Scottish Universities Environmental Research Centre
Director: Professor R M Ellam
Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride, Glasgow G75 0QF, Scotland, UK
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

18 March 2015

Laboratory Code	SUERC-58619 (GU36749)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	CAMCBC13
Context Reference	1557
Sample Reference	88
Material	Seed : Prunus spinosa – waterlogged
$\delta^{13}C$ relative to VPDB	-27.1 ‰
Radiocarbon Age BP	2992 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

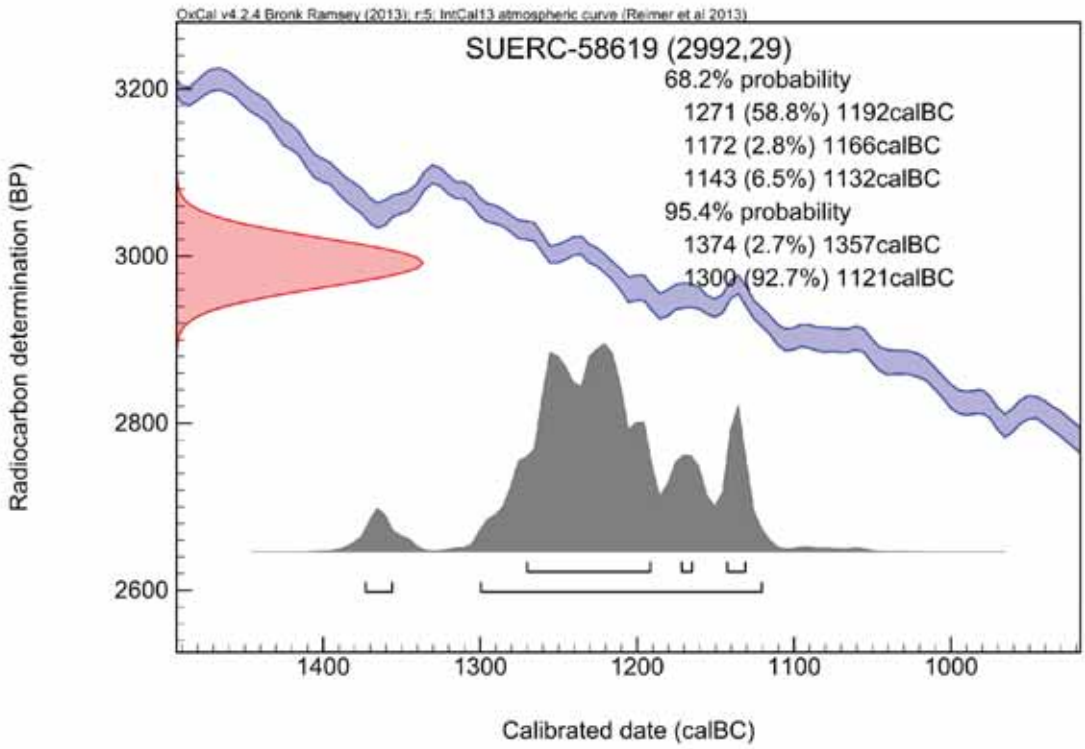
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- E Dunbar Date :- 18/03/2015

Checked and signed off by :- P. Naysmith Date :- 18/03/2015

University of Glasgow

Calibration Plot



Appendix D. Product Description

Product number: 1
Product title: Full Report (Analysis and Publication)
Purpose of the Product: To analyse the site and address the research aims and objectives stated in this report and to disseminate to the local community.
Composition: Published report, in accordance with the relevant journal and EH guidelines
Derived from: Analysis of site records, specialist reports and data and background research
Format and Presentation: Monograph
Allocated to: TP, RM
Quality criteria and method: Checked and edited by EP
Person responsible for quality assurance: EP
Person responsible for approval: EP
Planned completion date: 2017

Product number: 2
Product title: Archive completion
Purpose of the Product: To collate all elements of the physical and paper archive and deposit with the appropriate body
Composition: Paper records, artefacts, ecofacts
Derived from: Original site records, artefacts and ecofacts collected on site
Format and Presentation: Appropriately packaged
Allocated to: TP
Quality criteria and method: ?
Person responsible for quality assurance: ?
Person responsible for approval: ?
Planned completion date: 2017

Appendix E. Bibliography

ACBMG, 2007, *Ceramic building material, minimum standards for recovery, curation, analysis and publication*

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

Andersen, S. Th., 1979, *Identification of wild grass and cereal pollen*, Danmarks Geologiske Undersogelse, (Geological Survey of Denmark, 1978), 69-92

Anderson, K., 2013, 'Roman Pottery' in Evans, C. *et al*., *Process and History. Romano-British Communities at Colne Fen, Earith*. CAU Landscape Archives: the archaeology of the Lower Ouse Valley, Volume II, pp299-329

Barfield, L. and Hodder, M., 1987, 'Burnt Mounds as Saunas, and the Prehistory of Bathing.' *Antiquity* 61 (233), 370-379.

Barfield, L. H., 1991, 'Hot Stones: hot food or hot baths?' In M. A. Hodder and L. H. Barfield, (Eds.) *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference*, Sandwell, 12-14 October 1990, 59 – 67.

Behre K. E., 1981, 'The interpretation of anthropogenic indicators in pollen diagrams', *Pollen et Spores*, 23, 225-245

Berglund B. E., and Ralska-Jasiewiczowa M., 1986, 'Pollen analysis and pollen diagrams', In B. E. Berglund (ed), *Handbook of Holocene Palaeoecology and Palaeohydrology*, Wiley, Chichester, 455-484

Bishop, B.J., 2002, *Excavations at the Plant Breeding Institute, Hinxton Road, Cambridge: quantification and assessment of lithics*. Unpublished Report for the Archaeological Field Unit, Cambridgeshire County Council.

Bishop, B.J., 2013, *Excavations at Clay Farm, Cambridge, Site Code CAMCFT10: full report on the worked flint and burnt stone*. Unpublished Report for Oxford Archaeology East.

Bishop, B.J. 2014a *Archaeological Evaluation at Cherry Hinton, Cambridgeshire, Site Code CAMPET14: lithic assessment*. Unpublished Report for Oxford Archaeology East.

Bishop, B.J. 2014b *Excavations at the Bell Language School, Cambridgeshire, Site Code CAMBLS14: full lithic report*. Unpublished Report for Oxford Archaeology East.

Bishop, B.J., (forthcoming) 'The Lithic Material'. In: S. Kenny and P. Spoerry, *Excavations at the Hinxton Genome Complex, Cambridgeshire, Part 1: the prehistoric occupation*. East Anglian Archaeology.

Bishop, B.J., (in press), 'The Lithic Material'. In: S. Paul and K. Colls, *Life on the Edge. Mesolithic to Post-Medieval Archaeological Remains at Mill Lane, Sawston, Cambridgeshire; A Wetland/ Dry land Interface*. British Archaeological Reports.

Boardman, S. and Jones, G., 1990, 'Experiments on the effects of charring on cereal plant components'. *Journal of Archaeological Science* 17. p 1-11

Brodribb, G., 1987, *Roman Brick and Tile*, Sutton Publishing. Gloucester

Brooks D., and Thomas, K. W., 1967, 'The distribution of pollen grains on microscope slides. The non randomness of the distribution', *Pollen et Spores* 9, 621-629

Bush, L., 2015, *Bronze Age post alignments, an Iron Age trackway and Roman field systems on land south of the Bell Language School, Cambridge.* OA East Report 1622

Clark, J., 1995, 'Horseshoes', in J. Clark, *The medieval Horse and its Equipment c 1150 – c 1450, Medieval finds from excavations in London*, 5, London, 75-123

Collins, M., 2009, *Laboratory for Molecular Biology, Robinson Way, Cambridge. An Archaeological Excavation*. CAU Report 887

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

Cunliffe, B., 1974, *Iron Age Communities in Britain*. Routledge And Keegan. London.

Cunliffe, B., 1976, *Iron Age Sites in Central Southern England*. Council For British Archaeology Research Report 16.

Darling, M. J., 2004, 'Guidelines for the Archiving of Roman Pottery'. *Journal of Roman Pottery Studies* Vol 11, 67–74

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

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

English Heritage, 2006, *Management of Research Projects, The MoRPHE Managers' Guide*

English Heritage, 2008, *Management of Research Projects, PPN3: Archaeological Excavation*

Evans, C., 2002, *The archaeology of the Addenbrooke's Environs: A Desktop Essay*. CAU Report 497.

Evans, C. and Mackay, D., 2005, *Addenbrooke's 2020 Lands, Cambridge: Archaeological Evaluation Fieldwork* CAU Report 671

Evans, C., Mackay, D. and Webley, L., 2008, *Borderlands. The Archaeology of the Addenbrooke's Environs, South Cambridge*. Cambridge Archaeological Unit Landscape Archives. Oxbow Books

Evans C., Pollard J. and Knight, M., 1999, 'Life in the Woods: Tree-throws, Settlement and Forest Cognition' *Oxford Journal of Archaeology* 18, 3, 241-254.

Evans, J., 1991, 'Some notes on the Horningsea Pottery', *Journal Roman Pottery Studies* 4, 33–43

Evans, J., 2003, 'The pottery' in Hinman, M., *A Late Iron Age Farmstead and Romano-British Site at Haddon, Peterborough*, CCC AFU Monograph No.2 BAR 358

Evans, J., and Macaulay, S., (Fth), *Horningsea pottery industry*, East Anglian Archaeology

Faegri, K., and Iversen, J., 1989, *Textbook of Pollen Analysis*, 4th ed. Wiley, Chichester, 328

Flood, R.P., 1976, *Clay Tobacco Pipes in Cambridgeshire*. Cambridge

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

Greig, J., 1991, 'The British Isles', pp.299–334 in W. van Zeist, K. Wasylikowa and K. Behre (eds.), *Progress in Old World Palaeoethnobotany*. Rotterdam: Balkema.

Hartley, B. R. and Dickinson, B. M., 2009, *Names on Terra Sigillata, An index of makers' stamps and signature on Gallo-Roman Terra Sigillata (Samian ware), Volume 5* (L to MASCLUS i), Institute of Classical studies, University of London.

Hartley, B. R. and Dickinson, B. M., 2011, *Names on Terra Sigillata, An index of makers' stamps and signature on Gallo-Roman Terra Sigillata (Samian ware), Volume 7* (P to RXEAD), Institute of Classical studies, University of London.

Hayward, K., 2001, 'The Worked Stone' in unpublished report: Lucas, G. and Whittaker, P. , *Vicar's Farm, Cambridge. Post Excavation Assessment Report. Volume I: Main Text*. Cambridge Archaeological Unit Report 425, 71-81

Heslop, D.H., 2008, *Patterns of quern production, acquisition and deposition. A Corpus of Beehive Querns from Northern Yorkshire and Southern Durham*, Yorkshire Archaeological Society Occasional paper 5

Hill, J.D. and Horne, L., 2003, 'Iron Age and Early Roman pottery' in *Power and Island Communities: Excavations ar the Wardy Hill Ringwork, Coveney*, *Ely*. East Anglian Archaeology 103.145-184.

Hillman, G.C., 1981, 'Reconstructing crop husbandry practices from charred remains of crops', pp.123–62 in R. Mercer (ed.), *Farming Practice in British Prehistory*. Edinburgh: Edinburgh University Press.

Hinman, M., 1999, *Ritualistic Prehistoric Activity and Inhumations on land adjacent to Babraham Road, Cambridge*. Archaeological Field Unit PXA Rep. 10

Hinman, M., 2004, *Neolithic, Bronze Age and Iron Age Activity on land adjacent to Hauxton Road, Trumpington, Cambridge*. Archaeological Field Unit Rep. 706

Jacomet, S., 2006, *Identification of cereal remains from archaeological sites*. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University.

Jeffery, S., 1991, 'Burnt Mounds, Fulling and Early Textiles'. In M. A. Hodder and L. H. Barfield, (Eds.) *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference*, Sandwell, 12-14 October 1990, 97-108. Sandwell Metropolitan Borough Council. Sandwell.

Layard, N.F., 1922, 'Prehistoric Cooking-Places in Norfolk'. *Proceedings of the Prehistoric Society of East Anglia* 3, 483-98.

Lucas, G. and Whittaker, P., 2001, *Vicar's Farm, Cambridge. Post Excavation Assessment Report. Volume I: Main Text*, Cambridge Archaeological Unit Report 425

Lyons, A.L., 2012, 'The Roman pottery' in T. Phillips and R. Mortimer, *Clay Farm, Trumpington, Cambridgeshire. Post-excavation Assessment and Updated Project Design*. OA East Report 1294

Marney, P. T., 1989, *Roman and Belgic pottery from excavations in Milton Keynes, 1972-82*. Buckinghamshire Archaeol. Soc. Monog. Ser. 2 (Aylesbury)

McLaren, A. and Edmonds, M., 2008, 'Worked Flint'. In: C. Evans, *Borderlands: the archaeology of the Addenbrooke's environs, south Cambridge*, 30-33. Cambridge Archaeological Unit. Oxbow.

McKinley, J.I., 1989, 'Cremations: expectations, methodologies, and realities', in C.A. Roberts, F. Lee., and J. Bintliff, *Burial Archaeology: Current research, methods and developments*, Oxford, Brit. Archaeol. Rep. 211, 65-76

McKinley, J.I., 1994, *The Anglo-Saxon Cemetery at Spong Hill, Part VIII: The Cremations.* East Anglian Archaeology 69

McKinley, J.I., 2004, *Compiling a skeletal inventory: cremated human bone*, in Brickley, M. and McKinley, J.I., 9-13

Medieval Pottery Research Group, 1998, *A Guide to the Classification of Medieval Ceramic Forms*. Medieval Pottery Research Group Occasional Paper I

Medieval Pottery Research Group, 2001, *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics.* Medieval Pottery Research Group Occasional Paper 2

Medlycott, M. 2011, *Archaeology Revisited: a revised framework for the East of England*, East Anglian Archaeology Occasional Papers 24 (EAA 24)

Moore P. D., Webb J. A., and Collinson, M. E., 1991, *Pollen analysis*, 2nd ed. Oxford

Newman, J. and Phillips, T., 2012, *Clay Farm Rising Main Sewer, Cambridge: Excavation and Monitoring*. OA East Report 1422

Newman, R., Collins, M., Appleby, G. and Dickens, A., 2010, *Archaeological Excavations at CBC Cambridge: Site 2 The Boulevard. An Interim Report*. CAU Report 937

O'Kelly, M.J., 1954, 'Excavations and Experiments in Ancient Irish Cooking-places'. *Journal of the Royal Society of Antiquaries of Ireland* 84, 105-155.

Oswald, A., 1975, *Clay Pipes for the Archaeologist* British Archaeological Reports

Oswald, F., 1936-37, *Index of figure types on terra sigillata*, Univ of Liverpool, Annals of Arch & Anth supplement. Reprinted Gregg Press, London, 1964.

Patten, R., 2012a, *Trumpington Meadows, Cambridge, An Archaeological Excavation*. CAU Report No. 1134

Perrin, J.R., 1999, 'Roman Pottery from Excavations at and near to the Roman Small Town of Durobrivae, Water Newton, Cambridgeshire, 1956–58', *Journal Roman Pottery Studies* 8

Pickstone, A. and Mortimer, R., 2012, 'War Ditches, Cherry Hinton: Revisiting an Iron Age Hillfort.' *Proceedings of the Cambridge Antiquarian Society*, Volume 101

Phillips, T., 2013, *The Addenbrooke's Perimeter Road, Cambridge: Archaeological Excavation and Watching Brief*. OA East Report No. 1435

Phillips, T., Forthcoming, *Bronze Age and Iron Age Remains at The Fawcett Primary School, Trumpington, Cambridge*, OA East Report 1618.

Phillips, T. and Mortimer, R., 2012, *Clay Farm, Trumpington, Cambridgeshire. Post-excavation Assessment and Updated Project Design*. OA East Report 1294

Poole, C., forthcoming, 'Fired clay and ceramic building material' in T. Phillips and R. Mortimer, *Clay Farm, Great Kneighton. A Prehistoric and Roman landscape within the Cam Valley catchment of south Cambridge*. OA East/EAA

Prehistoric Ceramic Research Group, 2010, *The Study of Later Prehistoric Pottery: General Policies and Guidelines for analysis and Publication*. Occasional Paper No1 and No 2. Revised 3rd edition.

Rogers, G., 1974, *Poteries sigillées de la Gaule Centrale.* I. Les motifs non figurés, 28th supplément to Gallia, Paris.

Rogers, G., 1999, *Poteries sigillées de la Gaule centrale*. II les Potiers. Lezoux

R.T.J. Cappers, R.M. Bekker and J.E.A. Jans, 2006, *Digital Seed Atlas of the Netherlands*. Groningen Archaeological Studies 4, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl

Saville, A., 1980, 'On the Measurement of Struck Flakes and Flake Tools'. *Lithics* 1, 16-20.

Schmid, C.H. and Symes, S.A., 2008, *The Analysis of Burned Human Remains.* Elsevier

Shaffrey, R. in press (2015) 'Intensive Milling Practices in the Romano-British Landscape of Southern England. Using Newly Established Criteria for Distinguishing Millstones from Rotary Querns', *Britannia* 46

Simmons, E., 2005, 'Bulk Environmental Samples' in C. Evans and D. Mackay, *Addenbrooke's 2020 Lands, Cambridge: Archaeological Evaluation Fieldwork* CAU Report 671

Smith, K., 1977, 'The Excavation of Winklebury Camp, Basingstoke, Hampshire'. *Proceedings of the Prehistoric Society* 43, 31-129.

Spoerry, P.S., Forthcoming, *The Production and Distribution of Medieval Pottery in Cambridgeshire*

Stace, C., 2010, *The New Flora of the British Isles*. 3rd edition. Cambridge University Press

Stanfield, J. A. and Simpson, G., 1958, *Central Gaulish Potters*. Oxford University Press.

Stockmarr J., 1972, 'Tablets with spores used in absolute pollen analysis', *Pollen et Spores* 13, 615-621

Thompson, I.M., 1982, *Grog-tempered 'Belgic' Pottery of South-eastern England*. Oxford: British Archaeology Reports, British Series 108

Timberlake, S., 2007, *The Addenbrooke's Access Road, Clay Farm, Trumpington, Cambridge. The 2007 Investigations: Site 3*. CAU Report 803

Tomber, R and Dore, J., 1998, *The National Roman Fabric Reference Collection: A Handbook*, Mus. London Archaeol. Serv. Monogr.

Tyers, P., 1996, *Roman Pottery in Britain*, Batsford

van der Veen, M., 1989, 'Charred grain assemblages from Roman-period corn driers in Britain'. *Archaeological Journal* 146, 302–19.

van der Veen, M., 1999, 'The economic value of chaff and straw in arid and temperate zones'. *Vegetation History and Archaeobotany* 8, 211-224.

van Geel, B., 1978, 'A palaeoecological study of Holocene peat bog sections in Germany and the Netherlands based on the analysis of pollen, spores and macro-and microscopic remains of fungi, algae, cormophytes and animals', *Review of Palaeobotany and Palynology*, 25, 1-120

van Geel, B. and Aptroot, A., 2006, 'Fossil ascomycetes in Quaternary deposits', *Nova Hedwigia*, 82, 3-4, 313-329

Warry, P., 2006, *Tegulae manufacture, typology and use in Roman Britain,* BAR British Series 417

Watts, S., 2014, *The Life and Death of querns. The deposition and use-contexts of querns in south-western England from the Neolithic to the Iron Age*, Highfield Press, Southampton

Webley, L., with Anderson, K., 2008, 'Late Iron Age and Roman Pottery'. In C. Evans with D. Mackay and L. Webley, *Borderlands. The Archaeology of the Addenbrooke's Environs, South Cambridge*, 63-75. Cambridge: Cambridge Archaeological Unit.

Webster, G. (ed.), 1976, *Romano-British Coarse Pottery: a Students Guide*. CBA Research Report No. 6

Willis, S., 2003, 'Samian pottery' in Hinman, M. *A Late Iron Age Farmstead and Romano-British site at Haddon, Peterborough*, Archaeological Field Unit, Monogr. No. 2

Willis, S., 2004, 'The Study Group for Roman Pottery Research Framework Document for the Study of Roman Pottery in Britain, 2003', *Journal Roman Pottery Studies* 11, 1–20

Willis, S., 2005, *Samian Pottery, a Resource for the Study of Roman Britain and Beyond: the results of the English Heritage funded Samian Project*. An e-monograph. [Supplement to Internet Archaeology 17]: http://intarch.ac.uk/journal/issue17/willis_index.html

Appendix F. OASIS Report Form

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-205406		
Project Name	Cambridge Biomedical Campus (Circus/Piazza and Papworth Trust sites)		
Project Dates (fieldwork) Start	22-04-2014	Finish	08-08-2014
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	CAMCBC 13	Planning App. No.	
HER No.	ECB 4376	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPS 5

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
Enclosure ditch	Bronze Age -2.5k to -700	pottery	Roman 43 to 410
Waterholes	Bronze Age -2.5k to -700	quern stone	Roman 43 to 410
Field system	Roman 43 to 410	animal bone	Roman 43 to 410

Project Location

County	Cambridgeshire	Site Address (including postcode if possible)	
District	Cambridge City	Francis Crick Avenue, Addenbrooke's, Cambridge	
Parish	Cambridge		
HER	Cambridgeshire		
Study Area	3.5 ha	National Grid Reference	TL 46130 54914

Project Originators

Organisation	OA EAST
Project Brief Originator	Andy Thomas, Cambs. County Council
Project Design Originator	Tom Phillips and Richard Mortimer
Project Manager	Richard Mortimer
Supervisor	Tom Phillips

Project Archives

Physical Archive	Digital Archive	Paper Archive
Deepstore	OA East	Deepstore
CAMCBC 13	CAMCBC 13	CAMCBC 13

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:

Figure 1: Site location map (areas outlined in red)

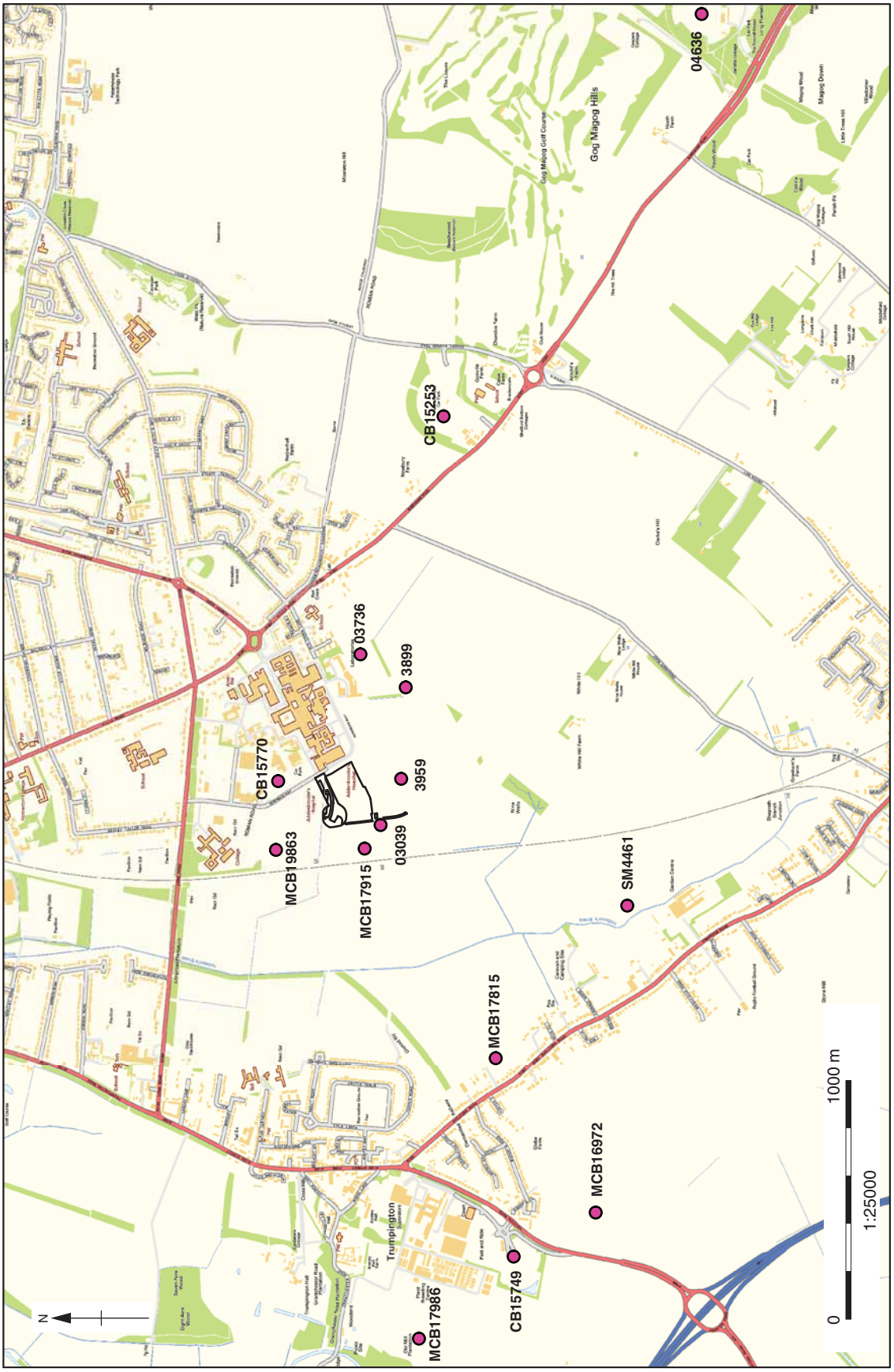


Figure 2: Cambridgeshire HER entries

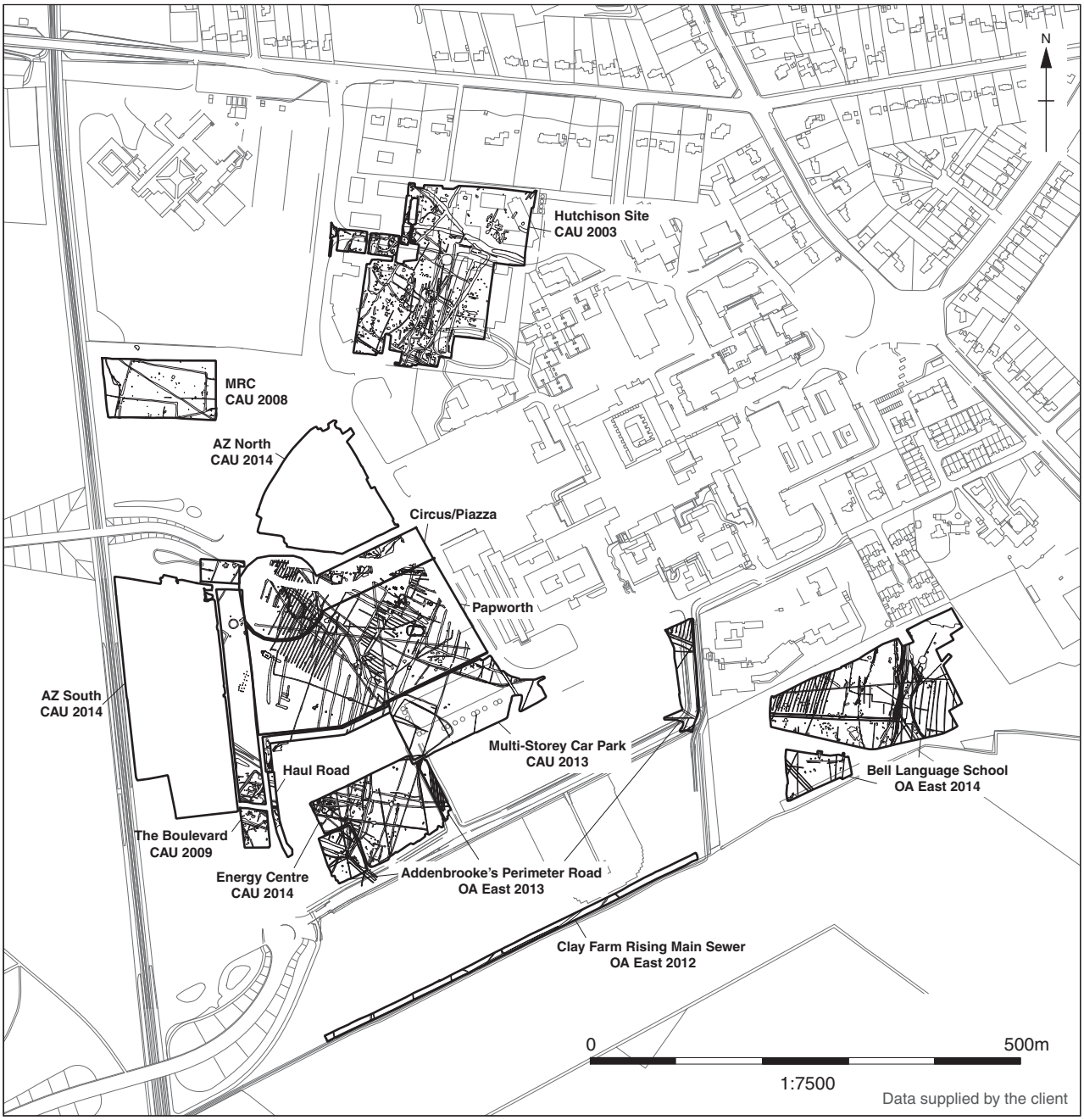


Figure 3: Archaeological Excavations around Addenbrooke's

Figure 4: All archaeological features

Figure 5: All archaeological features with contour mapping

Figure 6: Bronze Age Features and metalled surface

Figure 7: Early Roman Features

Pit **619** Viewed from the west

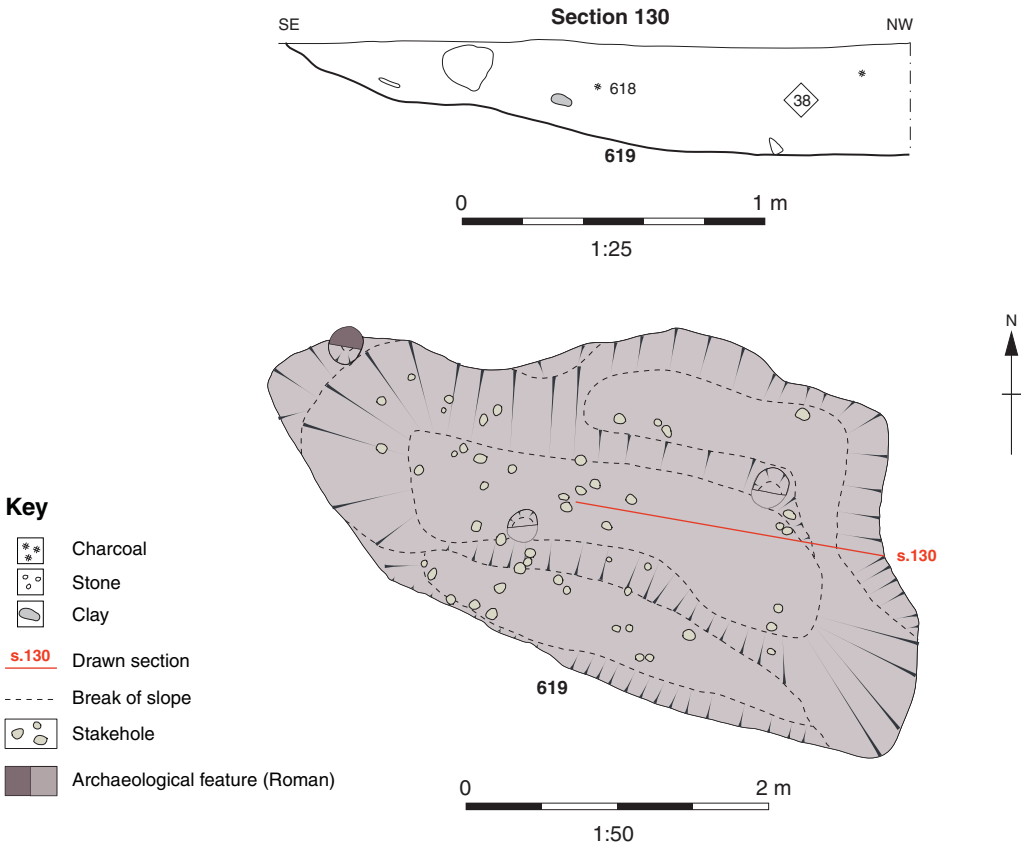


Figure 8: Early Roman pit **619**

Structure **434** half excavated and viewed from the south

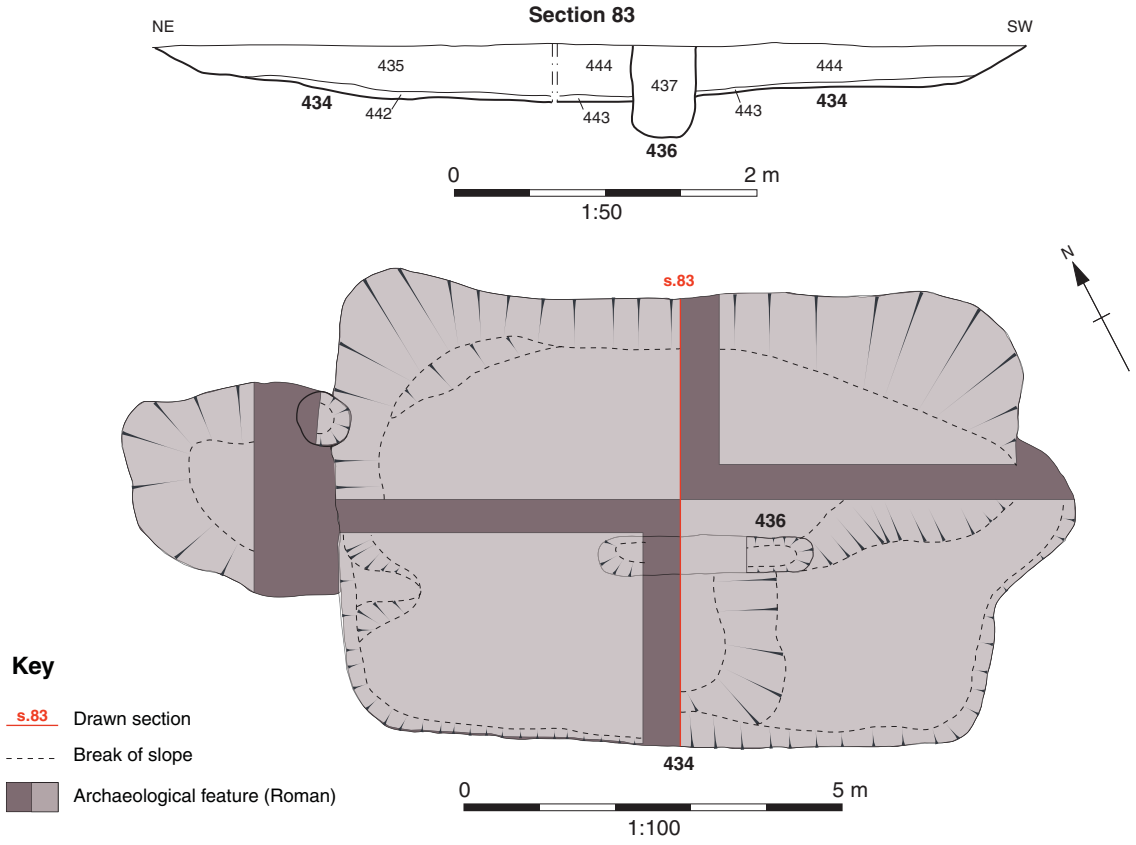


Figure 9: Early Roman Structure **434**

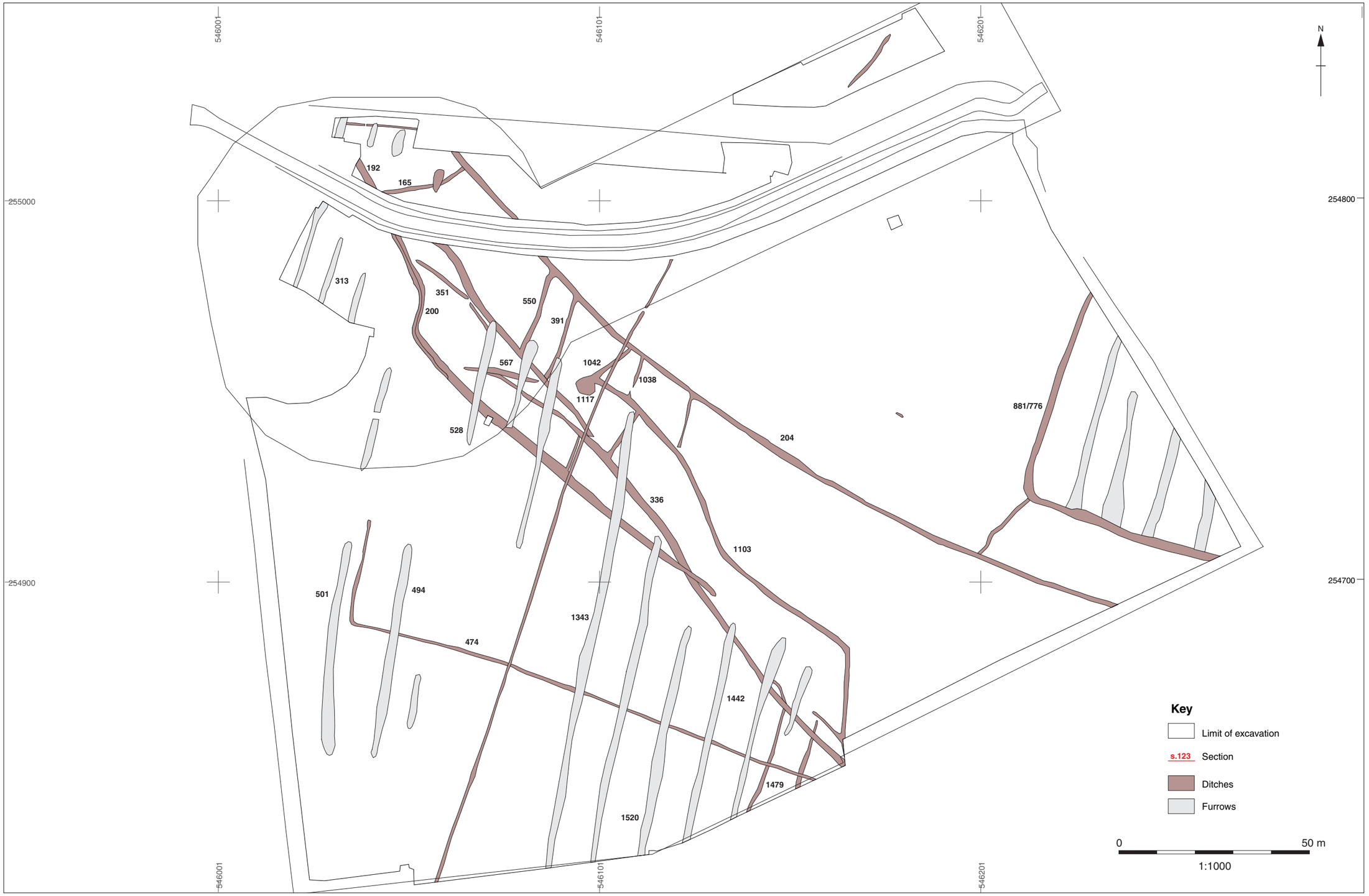
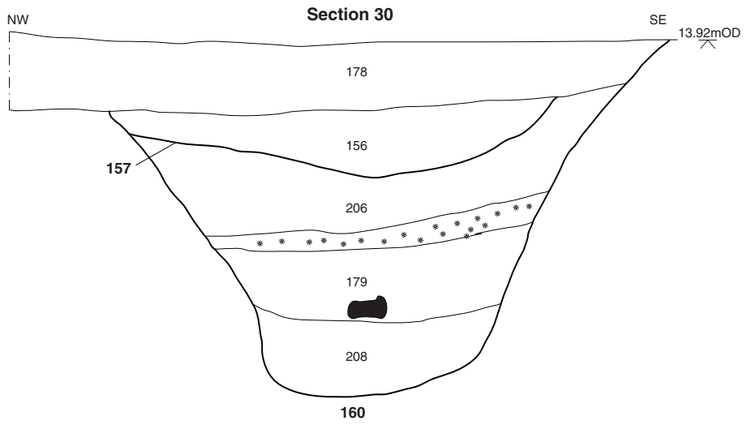
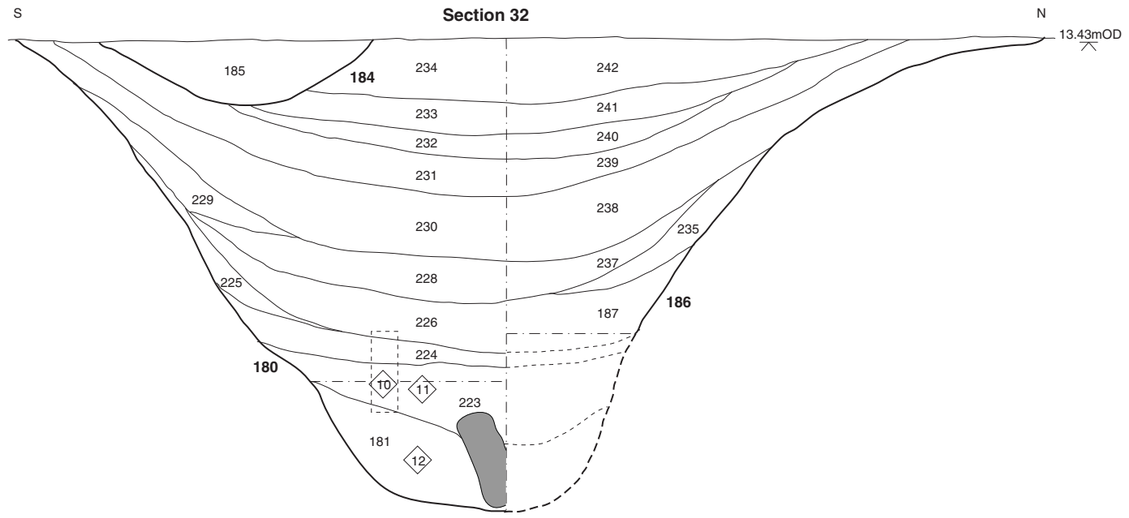
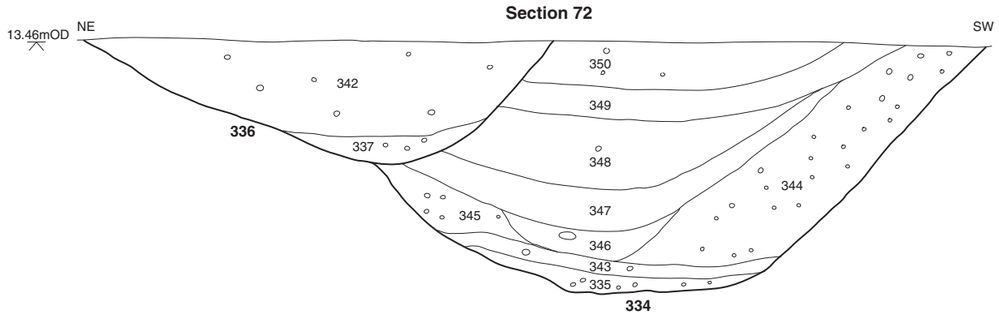
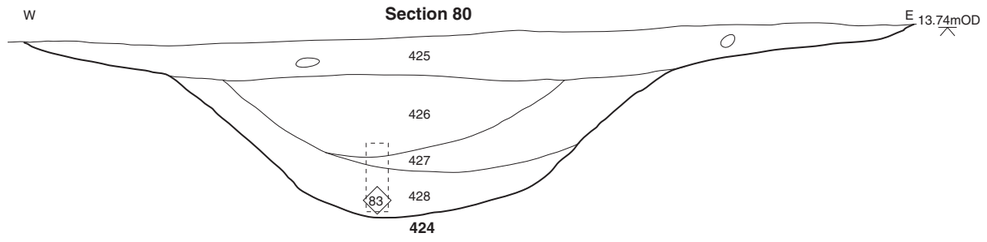


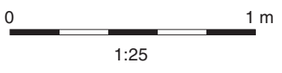
Figure 10: Post-medieval features

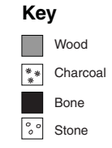












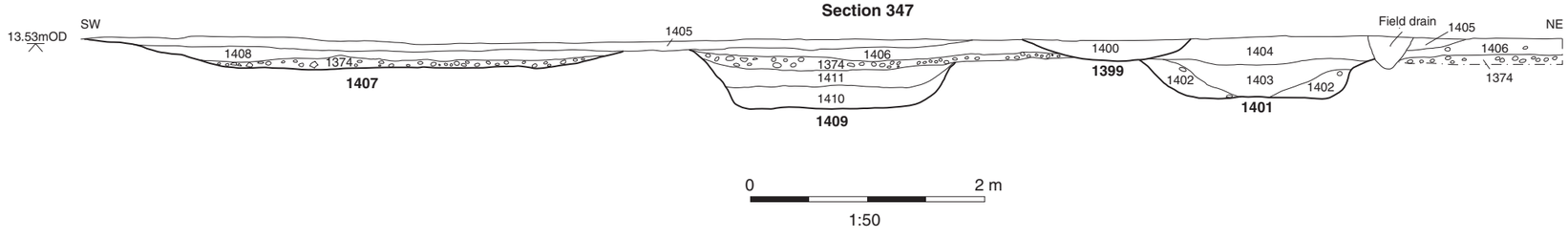


Figure 11: Selected section drawings

Plate 1: Middle Bronze Age ditch **334** (cut **334**), from the north-west. 2m scale

Plate 2: Middle Bronze Age waterhole **1552**, from the west. 2m scale

Plate 3: Metalled surface (1369) from the south, sealing Bronze Age ditch **334** and truncated by Early Roman ditch **194.** 2m scales

Plate 4: Metalled surface (1369) from the west.

Plate 5: Early Roman enclosure **1077** from the west

Plate 6: Elevated view of site from the south-east.

Plate 7: Complete Early Roman pot from ditch **68**

Head Office/Registered Office/ OA South

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA North

Mill 3
Moor Lane
Lancaster LA1 1GF

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@oxfordarchaeology.com
w: http://oxfordarchaeology.com

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850500
e: oaeast@oxfordarchaeology.com
w: http://oxfordarchaeology.com