ASTRAZENECA NEW CAMBRIDGE SITE

Volume I: Post-Excavation Assessment

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Summary

Archaeological investigations were undertaken by the Cambridge Archaeological Unit (CAU) at AstraZeneca's New Cambridge Site (NCS) at the Cambridge Biomedical Campus, Cambridge. Work was carried out over the course of eight months between July 2014 and early March 2015 and comprised excavations in two separate development areas, the South Plot and the North Plot. An area totalling 4.94ha was stripped revealing archaeology ranging in date from the Early Neolithic through to the late Roman period and dominated by settlement remains dating to the Middle Bronze Age (South Plot) and the 1st-4th centuries AD (North Plot).

The main focus of the excavation within the South Plot was a series of Middle Bronze Age enclosures identified previously through aerial photographs, geophysics and trial trenching. Three main phases of Middle Bronze Age activity were recorded, these comprised i) an 'early' field system ii) a series of three multi-ditched enclosures with associated settlement activity and iii) two 'late' boundary ditches. The three settlement enclosures (Enclosures A-C) clearly represent significant Middle Bronze Age occupation and excavations yielded substantial finds assemblages including important assemblages of pottery and animal bone; other finds included bronze metalwork, worked bone and human remains. The enclosures and settlement remains represent an important archaeological site, which when considered alongside other contemporary sites in the area (eg. Clay Farm and the Laboratory for Molecular Biology Site), forms part of an important and extensive prehistoric landscape.

Evidence of Early and Middle Iron Age activity was also recorded on the South Plot in the form of an Early Iron Age watering hole and Middle Iron Age settlement remains. The Early Iron Age watering hole yielded finds including pottery and animal bone and was associated with a number of smaller pits and a spread of burnt stone. The Middle Iron Age features included seven distinct pit groups – one of which formed a 'pit alignment' orientated on an earlier Middle Bronze Age boundary ditch – and a roundhouse gully. Interestingly, part of the Middle Iron Age settlement was apparently deliberately located within the remnant earthworks of Middle Bronze Age Enclosure A.

The North Plot's archaeology comprised a dense pattern of boundary ditches and enclosures interspersed with 1st-4th century settlement features including structural remains, wells and pits. The archaeology can be divided broadly into i) features associated with an 'early' grid-like system of ditches potentially dating to the late 1st-2nd century, and ii) those associated with a 'later' series of enclosures dating to the 2nd-4th centuries. Two cemeteries were also excavated; the first comprised three 1st-2nd century cremation burials in the west of the site, while the second contained five 4th century inhumation burials in the east. The site yielded substantial finds assemblages including pottery, animal bone, worked stone, metalwork and a total of 78 Roman coins.

INTRODUCTION

Archaeological investigations were undertaken by the Cambridge Archaeological Unit (CAU) at AstraZeneca's New Cambridge Site (NCS) at the Cambridge Biomedical Campus, Cambridge. The site will be home to AstraZeneca's new Global R&D Centre and Corporate Headquarters (approved under reserved matters approval 14/1633/REM, 4th February 2015). Work was carried out over the course of eight months between July 2014 and early March 2015 and comprised excavations in two separate development areas; the South Plot (centred on TL 45830 54900), to the west of Francis Crick Avenue, and the North Plot, to the east (centred on TL 45980 55140; see Figure 1). An area totalling 4.94ha was machine stripped revealing archaeology ranging in date from the Early Neolithic through to the late Roman period. The archaeology of the South Plot was dominated by Middle Bronze Age and Iron Age settlement whilst the North Plot's archaeology comprised almost entirely Roman features dating to the 1st-4th century AD with little evidence of earlier activity. As such the two plots effectively represent two separate archaeological sites - both spatially and in terms of their archaeology – and consequently this report details and discusses the results of each excavation separately before considering the potential of the site and outlining a series of revised research aims.

The work is part of the ongoing development of the Cambridge Biomedical Campus and follows archaeological evaluation of the area in 2004 (Evans and MacKay 2005). The evaluation, which comprised aerial photographic survey, geophysical survey, field walking and trial trenching identified three concentrations of archaeology; two Early Roman sites and a complex of three multi-ditched enclosures, provisionally identified as Iron Age but subsequently found to be Middle Bronze Age in date (Slater and Dickens 2008). Subsequent archaeological investigations ahead of development of individual building plots and infrastructure within the Biomedical Campus have already excavated much of the archaeology identified (eg. Newman *et al.* 2010, Tabor 2013, Collins 2014).

The project was commissioned by David Lakin of Arup on behalf of AstraZeneca. The work was undertaken in accordance with a project design specification produced by the CAU in response to a brief by Andy Thomas of the Cambridgeshire Historic Environment Team (Dickens 2014).

The site code was ATT:AAZ14.

Location, geology and topography

The Cambridge Biomedical Campus is located immediately to the west of Addenbrooke's Hospital and *c.* 4km to the south of the historic centre of Cambridge. Within the Biomedical Campus the AstraZeneca NCS lies either side of Francis Crick Avenue. The South Plot, located immediately to the west of Francis Crick Avenue, is bounded by the railway line to the west and by the Guided Bus route to the north; to the south, open land awaiting development borders the site. The North Plot is situated to the east of Francis Crick Avenue, which defines its north-western side whilst to the south and north-east it is bounded by a pedestrian/cycle path and Robinson Way

respectively. The site is located on former agricultural land immediately to the west of Addenbrooke's Hospital and it is situated at a height of *c.* 15m AOD on a geology comprising Lower Chalk (chalk marl with gravel). The area is relatively flat, lying at the foot of South Cambridgeshire's chalk downlands, which rise at White Hill (45m OD) less than a kilometre to the south of the site.

The South Plot is situated at a height of between 15.8m and 13.3m OD and slopes, from a high point in the centre of the plot, gently to the south and north. The topography of the North Plot (prior to its excavation) was somewhat altered by the presence of a thick deposit of material dumped on the site during the 1960s. This overburden deposit comprised material – largely chalky marl – excavated during the construction of various basement buildings at Addenbrooke's Hospital and formed a 2-2.5m thick layer covering the entire North Plot (see Evans *et al*. 2008, 8-10). Thus the site stood (artificially) elevated above the land to the south and south-west at a height of 18.5m OD. Following the removal of the overburden the surface of the natural geology was found to slope gently from a height of 16m OD in the north-east to 13.4m OD in the south-west.

Archaeological background

The area around Addenbrooke's and Cambridge's southern fringe is a rich archaeological landscape, which has been subject to extensive archaeological investigation. Although Addenbrooke's first saw excavation in 1967 (Cra'ster 1969), the majority of the work has taken place since the turn of this century ahead of planned hospital expansion and housing developments. The results of all investigations prior to 2008 are outlined and discussed in the CAU's *Borderlands* publication (Evans *et al* 2008) and include major sites at Addenbrooke's itself as well as in the wider environs. Most pertinent to the Astrazenca NCS site, however, are the archaeological evaluations and subsequent excavations at Clay Farm (Phillips and Mortimer 2012), to the west of the AstraZeneca NCS, and particularly within the Addenbrookes Hospital environs and the Biomedical Campus development area (the 2020 evaluation area). Major archaeological investigations undertaken within the latter are listed in Table 1 and shown in Figure 2.

Earlier prehistoric

Evidence of pre-Bronze Age activity within the Addenbrooke's landscape is largely limited to residual worked flint and pottery recovered from later features, although occasional pits and potentially *in situ* deposits of flint have been recorded in the area (eg. the LMB site; Collins 2009). Yet, while there was clearly an earlier prehistoric 'presence' in the landscape no firm evidence of occupation has been forthcoming. Earlier prehistoric sites are, however, recorded in the wider environs including two Neolithic round barrows and associated burials at Trumpington Meadows (Patten 2012) and Neolithic pits at Trumpington Park and Ride (Hinman 2004), Glebe Farm (Collins 2011) and Clay Farm (Phillips and Mortimer 2012).

Project	Date of excavation	Main archaeological phases/features recorded	Reference
The Hutchison Site	2002-3	Late Iron Age/Conquest settlement, Early Roman enclosure, Anglo-Saxon seetlement	Evans et al. 2008
Cambridgeshire Guided Busway Evaluation	2003-4	2nd-4th century settlement	Cessford and MacKay 2004
2020 Evaluation	2004-5	Middle Bronze Age enclosures, Late Iron Age/Conquest settlement, 2nd-4th century settlement	Evans and Mackay2005
Addenbrookes Water Main diversion	2007	Anglo-Saxon pits	Timberlake 2007a
Geen Corridor Evaluation	2008	Middle Bronze Age enclosures, Roman field system	Slater and Dickens 2008
Laboratory for Molecular Biology (LMB)	2008	Middle Bronze Age enclosure, Anglo-Saxon Sunken Floored Building	Collins 2009
CBC Boulevard	2008-9	Late Bronze Age/Early Iron Age? 'ring ditches', Late Iron Age/Conquest settlement	Newman et al. 2010
Addenbrookes Southern Perimeter Rd.	2012	Early Roman field system and pottery kiln	Phillips 2013
Addenbrookes Multi Story Car Park (MSCP)	2013	Roman? and potentially earlier field systems	Tabor 2013
Addenbrookes Energy Centre	2014	Late Iron Age/Conquest settlement enclosures	Collins 2014
New Papworth Hospital Site	2014	Middle Bronze Age ditch, Early Roman field systems and settlement	Oxford Archaeology East Forthcoming

Table 1: Major archaeological investigations within the Cambridge Biomedical Campus

Bronze Age

A similar pattern emerges for the Early Bronze Age; a general scarcity of evidence in the Addenbrooke's area and further funerary activity at Trumpington including a Beaker period burial and Collared Urn cremation (Patten 2012). However, during the Middle Bronze Age the Addenbrooke's landscape appears to have been transformed and for the first time permanently settled. Evaluation and subsequent excavations at both Clay Farm (Evans *et al.* 2006; Phillips and Mortimer 2012) and *The 2020 Lands* (Evans and Mackay 2005; Collins 2009) have recorded significant remains dating to this period including an extensive field system and a number of substantial enclosures. A number of these enclosures have been recorded within the Cambridge Biomedical Campus; firstly, to the north of the AstraZeneca NCS South Plot at the LMB site where a large rectangular enclosure was excavated in 2008 (Collins 2009), and secondly partially within the South Plot itself where a complex of three enclosures is bisected by the railway line (Evans *et al.* 2008; Slater and Dickens 2008). Provisionally identified as potentially Roman and Iron Age respectively, the enclosures at both sites have now been firmly attributed to the Middle Bronze Age through radiocarbon dating and their associated assemblages of Deverel-Rimbury

pottery. At Clay Farm, 600m to the west, multiple phases of Middle Bronze Age activity have also been recorded. Here an early 'strip' field system developed over time into a complex series of fields and settlement enclosures, which produced significant artefact assemblages (Phillips and Mortimer 2012).

Settlement activity persisted, albeit apparently not on the same scale, into the Late Bronze Age, with numerous Post-Deverel-Rimbury associated features including pits and four-post structures recorded at the Hutchison Site (Evans *et al.* 2008). Features including pits and a roundhouse at the Boulevard Site have also been dated to the Late Bronze Age/Early Iron Age (Newman *et al.* 2010).

Early - Middle Iron Age

Comparatively limited Iron Age activity has been recorded within the immediate Addenbrooke's environs although a possible structure was identified at the LMB Site (Collins 2009), whilst the enclosure recorded by Cra'ster in 1967 during the construction of Addenbrooke's dates to the Middle/later Iron Age and appears to have been a significant site. Addenbrooke's does, however, lie on the edge of an area of Early and Middle Iron Age settlement spreading from Clay Farm (Phillips and Mortimer 2012) westwards and including a major site at Trumpington Park and Ride and Trumpington Meadows (Hinman 2004; Patten 2012). At both Clay Farm and Trumpington settlement features including structures and storage pits (of which there were over 700 at Trumpington Meadows) were recorded with a progression from open settlement in the Early Iron Age to enclosed settlement in the Middle Iron Age; a pattern that is familiar across the East Midlands and East Anglia. Slightly further afield, the Iron Age ringforts of War Ditches and Wandlebury lie within 4km of the AstraZeneca NCS to the east and south-east respectively.

Late Iron Age - Roman

The southern fringe of Cambridge was a densely settled Late Iron Age/Roman landscape, which is discussed at length in the *Borderlands* publication (Evans *et al.* 2008). Major settlement remains, dating to the Late Iron Age, Conquest period and (to a lesser extent) the Early Roman period, have been excavated at the Hutchison Site (*ibid.*) as well as more recently at Clay Farm where features include two rich Conquest period cremations (Evans *et al.* 2008; Phillips and Mortimer 2012).

Most relevant to the AstraZeneca NCS site, however, are the Late Iron Age/Conquest period and Roman settlement remains recorded during the 2004 evaluation within Cambridge Biomedical Campus (Evans and Mackay 2005). Here, two relatively discrete settlement sites were recorded. Firstly, on the site of the AstraZeneca NCS North Plot and the area immediately to the south, ditches, gullies, pits and postholes appear to represent a settlement dating to between the 1st and 4th centuries AD (predominantly the 2nd-3rd centuries). Evaluation trenching in this area was limited due to the deep overburden deposit covering the area (detailed above) and consequently the extent and character of the site was difficult to determine. The area to the south of the North Plot has since been excavated by Oxford Archaeology East and has recorded extensive Early Roman remains including field systems and

settlement features (Phillips *pers comm.*). Secondly, immediately to the south-east of the AstraZeneca NCS South Plot, a Late Iron Age/Conquest period settlement was identified and has subsequently been partially excavated at the Boulevard Site (Newman *et al*. 2010) and the Addenbrookes Energy Centre Site (Collins 2014). The site comprised a sequence of settlement enclosures with the remains of at least two structures, a number of wells and a midden within a dense zone of settlement features (*ibid.*).

Evidence recovered from across the Addenbrooke's environs suggests that these settlements were relatively well defined with areas of field systems/paddocks in between.

Anglo-Saxon

Limited evidence of Early-Middle Saxon settlement was encountered at the Hutchison Site (Evans *et al.* 2008) and immediately to the west during the excavation of a water main at Long Road College (Timberlake 2007a). Also, in the north of the Cambridge Biomedical Campus an Early Saxon Sunken Floored Building (SFB) was excavated along with two wells at the LMB Site (Collins 2009). In the south of the Biomedical Campus and across the Clay Farm landscape, however, little evidence of Anglo-Saxon activity has been recorded. Indeed, there appears to be something of a 'blank' between Addenbrooke's and the Anglo-Saxon site at Trumpington Meadows where recorded remains included four SFBs and four burials including a bed burial (Patten 2012).

Medieval to present

For the most part, the medieval and post-medieval history of the Addenbrooke's landscape is unremarkable and the site appears to have been agricultural land throughout. It is important to note, however, that the landscape generally is littered with features associated with the WWII Defence of Britain; the GHQ line is located just to the west of Addenbrooke's, for example (see Evans *et al.* 2008), while the remains of anti-aircraft searchlight batteries were recorded at Clay Farm (Phillips and Mortimer 2012). Clay Farm was also the site of the Royal Agricultural Show on a number of occasions during the 20th century while Addenbrooke's Hospital moved to its present site in the early 1960s.

METHODOLOGY

Both the South and North Plot excavation areas were stripped of topsoil and sub-soil/overburden using a 360° tracked excavator fitted with a toothless bucket operating under the supervision of an experienced archaeologist. On the North Plot, where deep overburden deposits up to 2.5m thick sealed the archaeological horizon, this was done in two phases, with the bulk of the overburden being removed prior to the 'archaeological strip' of the lower 0.5m. The edges of the North Plot excavation area were left with a 1 in 2 batter in order to ensure they remained stable and provided a safe working environment.

The site was located using an advanced Global Positioning System (GPS) with Ordnance Datum (OD) heights obtained. Potential archaeological features were digitally planned following the stripping of the site using a total station. Potential features were all initially hand excavated and slots digitally planned. All archaeological finds were retained for analysis, with the exception of the large quantity of burnt stone recovered from the South Plot excavation, which was quantified and recorded before being discarded on site. Environmental bulk soil samples were taken from selected features and where appropriate monolith samples were taken for soil micromorphology and pollen analysis. A written record of archaeological features and *in situ* buried deposits was created using the CAU extensive recording system and sections were drawn at an appropriate scale. Finally, a digital photographic record of the excavation was maintained throughout; aerial photographs were taken using an unmanned drone operating with full permission from Addenbrooke's Hospital and the relevant authorities.

A metal detector survey was undertaken on both sites. On the South Plot this comprised metal detecting of all exposed features as well as a 10m wide E-W transect of subsoil across the centre of the Middle Bronze Age enclosures, prior to its removal. On the North Plot, given the truncation and disturbance, survey was not undertaken until machine stripping was complete; at this point all exposed features were metal detected.

Following hand excavation of archaeological features a second phase of machine stripping/excavation was undertaken on both the South and the North Plot. The reasons for this were twofold; firstly a number of deep archaeological features on both plots – largely wells – required machine stepping in order to safely proceed in excavating to their full depth; secondly areas of colluvium situated in hollows were found to mask archaeology beneath in a number of areas and required removal. In addition, portions of the Middle Bronze Age enclosure ditch were 100% excavated by machine in order to fully determine its character and identify and excavate any further significant deposits/archaeological finds.

RESEARCH AIMS

A series of specific research priorities have been identified within the Addenbrookes landscape (Dickens 2014):

- Assessing the later prehistoric landscape usage: flint recovery/scatters identifying potential sites during the Mesolithic and early to middle Neolithic.

- Determining Neolithic and Early Bronze Age clearance – identifying the shift to agriculture, woodland clearance, adoption and adaptation of animal husbandry/domestication.

- Establishing the relationship of the Middle Bronze Age field system recently found at Clay Farm (Phillips and Mortimer 2012) to the Middle Bronze Age multi-ditched enclosure.

- Defining the nature, date and function of the Middle Bronze Age multi-ditched enclosure – clearly denoting a significant place in the landscape, is this enclosure defensive in nature, a high status settlement/centre or farmstead, and in which phase of the Middle Bronze Age was this enclosure constructed?

- How unique is the Middle Bronze Age multi-ditched enclosure and does it have similarities/affinities to the enclosure at Loft's Farm, Essex (Brown *et al.* 1988) and or the Newark Road, Fengate (Pryor 1996) settlement enclosure?

- Extending or confirming the limits of the Bronze Age field system in this landscape.

- Establishing the nature, rite and density of Bronze Age funerary activity and local and regional variation between rites witnessed in the Addenbrooke's environs versus the Ouse Valley and Fens.

- Water sourcing during the later Bronze Age of a presumed agricultural landscape; were wells constructed and utilized in this landscape? The discovery of such features will provide possible waterlogged deposits ideally suited to palaeo-environmental, pollen and radiocarbon dating analysis.

- Determining and establishing the extent and density of Late Pre-Roman Iron Age settlement and cemetery activity across the landscape and their continuity into the Roman Conquest Period. Does such activity represent the northern limit of the Aylesford-Swarling Late Iron Age tradition?

- Defining the extent of Conquest Period settlement, notably the relationship and intervals between settlement and industrial activity during this period and the impact of the Roman conquest on landscape organisation. Is this a significant Conquest Period landscape (see Evans et al. 2008)?

- Assessing the nature and extent of Roman settlement activity between the Hutchison site, Bell Language School and the scheduled villa site less than 1km southwest of AZ South. Does the landscape reorganisation identified during earlier fieldwork relate to the construction of the 2nd century AD villa?

SOUTH PLOT: RESULTS

Machine stripping of the AstraZeneca NCS South Plot exposed features ranging in date from the Early Neolithic to the medieval period, with the majority of activity dating to two main phases of occupation during the Middle Bronze Age and Middle Iron Age. A total of 456 interventions were excavated with 361 features recorded; Feature descriptions and intervention records can be found in Appendix B in Volume II of this report, which also includes additional specialists' tables. A site plan with excavated slots/interventions is shown in Figure 3 while more detailed plans for both the South and North Plots showing Feature and Intervention numbers is provided in PDF format on CD. The main archaeological phases are detailed in Figure 4.

Earlier prehistoric (pre-*c.*1400 BC)

The earliest archaeological feature within the excavation area comprised a single pit dated to the Early Neolithic (*c.*4000-3000 BC). The sub-circular pit (F.1096) measured 0.94m in diameter by 0.2m deep and yielded a small assemblage of Mildenhall style pottery (10 sherds; 36g), along with four pieces of worked flint and a very small fragment of unidentifiable animal bone. A second pit (F.1092) located just to the north-east of pit F.1096 produced a single flint tertiary flake and may well be contemporary.

Other pre-Middle Bronze Age evidence was limited to residual finds in later features but includes four small fragments (3g) of Beaker pottery and 47 fragments (165g) of Early Bronze Age pottery. In addition a small assemblage of residual worked flint was recovered comprising Late Mesolithic/Early Neolithic and Late Neolithic/Early Bronze Age material and including a fine Early Bronze Age barbed and tanged arrowhead recovered from enclosure ditch F.1062 (see Beadsmoore, below).

Middle Bronze Age (*c.*1400-1000 BC)

Three separate major phases of Middle Bronze Age activity have been identified, these comprise i) an 'early' field system ii) a series of ditched enclosures associated with settlement activity and iii) two 'late' boundary ditches in the south of the excavation area. Of these, the second phase (MBA II) incorporates at least three sub-phases; features will be assigned to sub-phases, which are provisionally outlined in the South Plot discussion (below), during the site's full analysis.

MBA Phase I – The field system

A total of nine linear boundary ditches have been attributed to a primary phase of field system. The dimension and orientations of the individual ditches are detailed in Table 2.

Ditch	Re-cuts	Orientation	Width (m)	Depth (m)	Finds
F.1348	Fs. 1349, 1350	E-W	0.75	0.35	-
F.1351	-	E-W	0.5	0.25	-
F.1352	-	E-W	0.4	0.25	-
F.1155	-	NE-SW	0.25-0.35	0.06-0.1	-
F.1156	-	NE-SW	0.2-0.5	0.08-0.25	-
F.1199	-	NE-SW	0.95-1.43	0.1-0.32	Flint, animal bone
F.1208	-	NE-SW/ NW-SE	0.48-0.84	0.24-0.28	Pottery, animal bone
F.1103/1110		NW-SE/ NE-SW	0.68-1.05	0.37-0.48	
F.1301	-	NW-SE	0.32	0.09-0.16	-

Table 2: Middle Bronze Age field system ditches

The ditches contained very few finds with only four sherds of pottery recovered; a residual Early Bronze Age sherd from F.1142 and three Middle Bronze Age sherds from F.1208 (see Knight and Sealey, below). Consequently, as individual features the ditches are not well dated, but given that together they form a coherent field system layout and that elements are truncated by the MBA II enclosures, they can be attributed to an early Middle Bronze Age phase.

A number of the ditches were clearly multiple versions of the same boundary; ditch F.1348 was re-cut twice whilst ditches F.1351 and F.1352 represent a slight northward shift in what is in effect the same boundary. The same applies to ditches F.1155, F.1156 and F.1199, which all followed the same curving alignment and were located only a few metres apart. Two of the ditches (F.1208 and F.1301) are also completely truncated/re-cut by later MBA II features in some areas and it has to be assumed that they originally continued along the line of the latter.

The ditches appear to have effectively formed two droveways or 'funnels' – one originating to the north-east and one to the south-east – which met within the excavation area. It is the point at which they met that then became the focus for the later MBA II enclosures and settlement. No clearly defined fields *per se* occurred within the excavation, although F.1103/1110 may have defined two sides of a small paddock or field extending off the north-eastern droveway. The phasing of this feature does, however, remain somewhat ambiguous given that whilst it terminated adjacent (and therefore respected) droveway ditch F.1208, it also appeared to respect the outer ditch of MBA II Enclosure A. This suggests that F.1208 may have continued to function as a boundary (perhaps a fence line) into MBA II and that F.1103/1110 could actually be a later feature.

MBA Phase II – Enclosures

MBA II is marked by the establishment of a series of enclosures located at the junction between the two MBA I droveways. As detailed above, three enclosures had previously been identified through aerial photography, geophysics and trial trenching. Of the three, the eastern multi-ditched enclosure (A) fell entirely within the excavation area whilst the central enclosure (B) was also largely within the excavation area but extended beyond its edge to the south-west. Only the very north-eastern corner of the western enclosure (C), which lies largely under and to the west of the railway line, was exposed.

Of the enclosures, Enclosure A was the most complex with its three 'concentric' ditches and numerous re-cuts (see Figure 5); Enclosure B also showed evidence of multiple re-cuts/phases but did not display the same complexity or formality as Enclosure A. It was relatively clear, however, that the two were at least partially contemporary. The form of Enclosure C and its relationship to Enclosures A and B is harder to establish given that such a small part of it was exposed. The details and Feature numbers of the Enclosures are shown in Table 3, below.

Enclosure	Ditch	Feature Nos.	Width (m)	Depth (m)	No. of identified re-cuts	Finds
A	Inner	1078, 1086, 1088, 1104, 1137, 1162, 1164, 1180	1 - 2.3	0.29 - 0.81	1?	Pottery, animal bone, flint, burnt stone/flint particularly within midden-like upper fills
	Middle	1113, 1205, 1206, 1210, 1216, 1217, 1234, 1266	1.34 - 5	0.33 - 1.35	2	Pottery, animal bone, human bone (inc. artic.), flint, burnt stone/flint, worked stone, bronze awls/pins
	Outer*	1183, 1226	1.1 - 4	0.5 - 1.45	-	Pottery, animal bone, human bone (disartic.) flint, burnt stone/flint, amber bead
B**	-	1057, 1062	0.75 - 2.4	0.3 - 0.62	-	Pottery, animal bone, burnt stone/flint, flint, worked bone pin (x3)
C	-	1128	2.67	0.93	-	Pottery, animal bone (inc. artic.), flint burnt stone, bronze spearhead

Table 3: Middle Bronze Age enclosures (*not including 'outer gully' F.1214 on southern side, **not including the northern middle/outer ditches formed by continuations of Enclosure A ditches)

Enclosure A

The 'triple-ditch' enclosure had internal dimensions of 41m by 62m (external dimensions: 60m by 91 m) and an internal area of 2424m^2. Aligned on a north-east to south-west axis (determined by the preceding field system), the enclosure was sub-rectangular in shape and was defined by three ditches on the north-east, south-east and south-west sides and by two ditches on the north-west side (where it bordered Enclosure B). Separate feature numbers were given to clear episodes of re-cutting in each ditch, and in the cases of the inner and middle ditches, individual numbers were allocated for each 'arm' of the enclosure given that it quickly became apparent that they comprised separate 'cuts', which had originally terminated rather than 'turned' at each corner. The multiple re-cuts and the recorded stratigraphic and spatial relationships indicate that the enclosure's development was relatively complex and it is anticipated that at least three sub-phases can be identified as part of the site's full analysis (as discussed further, below). No *in situ* banks were recorded although ditch fills representing probably in-washed bank deposits were recorded and suggest each ditch had a bank on its 'outside' (see Allen, below).

The Inner Enclosure Ditch (Figure 6)

The inner ditch of Enclosure A was between 1m and 2.3m wide and a maximum of 0.81m deep. The enclosure had three entrances or 'causeways'; to the NE, SE and to the NW (the latter into Enclosure B). The entrances were all *c.*3.76-4.20 m wide and notable in that they were located on the same approach as the preceding droveways suggesting the continued use of existing route ways. The NW entrance differed slightly from the other two in that on its southern side a short segment of ditch (F.1086) separated it from a further narrow causeway just to the south; the function/reason for this feature is unclear.

Initial hand excavation of 2m slots through Enclosure A's inner ditch quickly established that along its NE side it was dug in segments. Consequently, following completion of the hand excavation phase, a machine was brought in to 100% excavate the ditch's NE side and parts of a SE and NW sides (Figure 7). The ditch (F.1162) was found to comprise ten individual segments along its NE side whilst the northern part of the SE side (F.1088) was found to have been excavated in two segments; the NW side appears to have comprised one continuous feature (F.1078). The segmentation was only visible in the base of the ditch suggesting segments silted up relatively quickly and for most of its life the ditch would have appeared as one continuous feature, which was certainly cleaned out/'re-cut' on at least one occasion. Clear evidence of re-cutting, however, was restricted to the NW corner of the inner enclosure ditch where a previous ditch cut (F.1180) was seen to turn to the NW and effectively form the NE side of Enclosure B.

The primary fills of the inner ditch were relatively consistent and comprised thin deposits of washed-in/initial silting deposits of silty clay. The upper fills were less consistent but generally comprised clay silt deposits with varying amounts of charcoal. Within these upper fills, discrete deposits of charcoal-rich soils with large quantities of burnt stone/flint were recorded especially along the south-western side. Such deposits appear likely to have derived from nearby surface middens and burnt stone/flint surface spreads, which were dumped within the ditch, although better establishing the character of these deposits will form part of the site's full analysis. Similar deposits were also recorded – albeit to a lesser degree – along the north-eastern and south-western sides, but interestingly not within the NW ditch.

The Middle Enclosure Ditch (Figures 5 and 6)

The width of the middle ditch was variable but was on average 2.5m (reaching its maximum width of 5m at the NE corner); it was a maximum of 1.35m deep. To the NE and SE the ditch comprised a continuous feature extending from the enclosure's SE entrance (which it respected) to its NW corner. Interestingly, there was no causeway in the middle ditch to match the inner enclosure ditch's NE entrance suggesting either that the middle enclosure ditch blocked this entrance or the entrance was accessed by a bridge. To the SW the middle enclosure ditch extended from the SE entrance and terminated at the enclosure's SW corner, at this juncture the ditch was also truncated by later MBA Phase III ditch F.1116, which erased any trace of a possible continuation of the ditch. To the NW the equivalent of the middle enclosure ditch was formed by Enclosure B's SE boundary.

As with the inner enclosure ditch machine excavation of the middle ditch revealed that along its NE side (F.1234) it was dug in ten segments. Once again, the same degree of segmentation was not recorded along the SE and NW sides although the former appeared to have been dug in at least two segments. The NE and SE 'arms' of the enclosure ditch were more substantial than those to the SW and NW and comprised at least three separate cuts. Ditch F.1206/1216 was potentially the earliest of these (although its relationship with the main ditch cut F.1205/1234 was unclear) and comprised a relatively small shallow ditch (maximum depth 0.20 m) on the 'outside' of the main ditch. The main, and most substantial, ditch cut around the NE and SE edge was F.1210/1234, which was re-cut following multiple silting/in-filling episodes, by F.1210/1217. This latest ditch phase was consistently visible as a cut through the upper fills of the ditch around the NE and SE sides of the enclosure. The SW enclosure ditch (F.1113) was rather diminutive in comparison to the NE and SE ditches (maximum 1.50 m wide by 0.60 m deep) although evidence of at least two phases of re-cutting were recorded at its SE corner. The later phase (F.1207) potentially marks a significant change in the layout/use of the enclosure whereby the instead of forming a continuous ditch around the enclosure's SW side, ditch F.1207 turns to the SE and links with the SE 'droveway' ditch (as discussed further below)

The fills of the middle enclosure ditch were relatively consistent along its NE and SE side and comprised lower silting fills, along with slumping/washed-in deposits potentially from a former bank. These basal fills were overlain by the in-fill of re-cut F.1210/1217, which on the whole comprised much darker, more charcoal rich deposits, with more frequent burnt stone/flint.

The Outer Enclosure Ditch (Figure 6)

The outer ditch comprised one continuous ditch cut (F.1183) around the NE and SE sides of the enclosure whilst to the SW a truncated gully/ditch (F.1214; maximum depth 0.20 m) appears to mark

the line of the outer circuit. No corresponding outer ditch was present on the NW side of the enclosure where it abutted Enclosure B. Around the NE and SE sides the ditch (F.1183) was substantial (2.10- 4 m across and up to 1.50 m deep) and to the NW it continued beyond Enclosure A and formed the northern side of Enclosure B; to the south it was truncated by the terminus MBA Phase III ditch F.1116 but appears likely to have itself terminated to respect Enclosure A's SE entrance.

The fills of the outer ditch (NE and SE sides) comprised silting deposits as well as evidence of in-washed/slumped bank deposits. Significantly there was little evidence of 'midden-derived' deposits, such as those recorded in the top of the inner and middle ditches; finds quantities were nevertheless relatively high. To the SW the fill of truncated ditch gully F.1214 was sterile and produced no finds. No clear evidence of re-cutting or segmentation was recorded in the outer ditch.

The ditches of Enclosure A produced significant finds assemblages largely comprising Middle Bronze Age pottery and animal bone (see Table 4). Also of note was the presence of a poorly preserved skeleton of an adult female in a terminus of the middle ditch (F.1225; see Figure 4), as well as seven disarticulated fragments from the inner and outer ditch (see Dodwell, below). The Middle Bronze Age attribution of the skeleton is somewhat tentative given the Middle Iron Age activity in the vicinity, regional parallels (Newark Road; Pryor 1996) suggest it may well be Bronze Age in date.

Enclosure Ditch	Fills/cut	Pottery (Qty.)	Animal bone (Qty.)	Flint (Qty.)	Other* (Qty.)	Total	Combined total
Inner	-	63 (414g)	892 (9889g)	8 (58g)	1 (157g)	964 (10518g)	**964 (10518g)**
Middle	Upper	195 (2154g)	1648 (21330g)	12 (75g)	12 (44g)	1867 (23603g)	**4075 (48481g)**
	Lower	94 (644g)	1101 (21843g)	6 (41g)	8 (2350g)	2208 (24878g)	
Outer	Upper	36 (118g)	470 (3580g)	-	-	506 (3698g)	**1120 (12911g)**
	Lower	41 (282g)	559 (8792g)	-	14 (139g)	614 (9213g)	
Total	**-**	**429 (3612g)**	**5670 (66706g)**	**26 (174g)**	**34 (1418g)**	**6159 (71910g)**	**6159 (71910g)**

Table 4: Enclosure A assemblage breakdown (Middle ditch finds totals do not include F.1062 and F1057, which are attributed to Enclosure B, below; *=human bone (articulated skeleton counted as one), burnt clay, shell, metalwork, worked stone)

The pottery (see Knight and Sealey, below) was largely of the Deverel Rimbury tradition whilst the animal bone assemblage was dominated by cattle although other domesticates and wild fauna were also recorded (see Rajkovača, below). Full distributional analysis of the artefacts and ecofacts will form part of the publication phase of post-excavation analysis although as Table 4 shows it is immediately clear that the middle ditch yielded the largest finds assemblage and around four times the amount of finds recovered from the inner ditch and the outer ditch. Perhaps unsurprisingly, the middle ditch (F.1210/1217) also yielded quantities of charred grains and plant macrofossils, which were otherwise largely absent from Middle Bronze Age features (see Fryer, below). In terms of the burnt stone assemblage it is

also clear that the middle ditch recovered the greatest quantities, although the inner ditch produced a large proportion of the assemblage as well (see Table 5, below.)

Enclosure Ditch	Fills/cut	Total burnt stone	Combined total
Inner		406 (119.2kg)	**406 (119.2kg)**
Middle	Upper	472 (82.6kg)	**609 (113kg)**
	Lower	137 (30.4kg)	
Outer	Upper	89 (11.7kg)	**195 (26.9kg)**
	Lower	106 (15.2kg)	
Total	**-**	**1210 (259.1kg)**	**1210 (259.1kg)**

Table 5: Enclosure A burnt stone

To some extent, that the middle ditch yielded the large majority of the finds and the majority of the burnt stone is not surprising given its larger capacity compared to the inner ditch, and its proximity to the settlement activity on the enclosure's interior compared to the outer ditch. However, the size of each ditch's finds assemblage and the character of its fills is also undoubtedly a reflection of the enclosure's use and chronology:

- the smaller size of the inner ditch finds assemblage – especially given its proximity to the settlement – suggests that it was perhaps open for a shorter period of time and may have been deliberately back-filled (which could account for the occasional large dumps of burnt stone within its fill).

- the outer ditch appears not to have been substantially re-cut and the lack of midden-derived material in its fill and within its finds assemblage suggest it was left open and silted up naturally following the abandonment of the settlement. It seems likely therefore that it was chronologically the latest of the three ditches.

- the middle ditch was re-cut on multiple occasions, yielded by far the largest finds assemblage and appears likely to have been 'open' for the longest duration receiving the majority of the settlement-related material. The large amounts of midden derived material in its upper fill may also represent eventual deliberate back-filling.

It could be suggested, based on these differing characteristics, that the inner ditch was deliberately back-filled during the lifetime of the settlement – hence the large amount of burnt stone within its fill – probably to enlarge the interior of the enclosure; potentially at the same time the outer ditch was added in order to maintain a double-ditch boundary. It can be argued therefore, that the enclosure was only ever double- rather than triple-ditched. To a large extent, however, interpretation of the enclosure's chronology and development is a matter of conjecture rather than clear evidence and is included within this report's discussion, below.

Enclosure B

To the west of Enclosure A, Enclosure B was more pentagonal than rectangular in form as a result of a pronounced 'kink' in its northern boundary. Although the south-western corner of the enclosure did not fall within the excavation area it was still possible to determine its internal dimensions (48m by 63m). The northern boundary of the enclosure was formed by a continuation of the northern outer ditch of Enclosure A (F.1183), with which it also shared its eastern double-ditched boundary (F.1057/1062 and F.1078/1084/1104). This together with the fact that the enclosure's south-east facing entrance corresponds directly with Enclosure A's north-west entrance confirm their contemporaneity and show that they were linked. Enclosure B's southern boundary comprised the same triple-ditch arrangement as Enclosure A's southern boundary, indeed the middle and outer ditches of each (F.1115 and F.1132 respectively) appear to have been continuous features, again indicating the enclosures' contemporaneity; the inner ditch was a continuation of F.1057. Finally, the enclosure's western side lies largely beneath the railway tracks to the west however it appears to have shared its boundary with Enclosure C.

Assessing the finds assemblages recovered from Enclosure B is complicated by the fact that it shared its boundaries with Enclosure's A and C. As such only the finds from its 'inner ditch' (F.1062/1057) are attributed to the Enclosure B; it was nevertheless a substantial assemblage largely recovered from F.1062 (effectively part of the western 'shared' boundary with Enclosure A). The finds assemblage comprised 83 sherds (1204g) of Middle Bronze Age pottery, including decorated 'Ardleigh type' wares, 333 fragments (3740g) of animal bone, 14.6kg of burnt stone and six flints, including a residual barbed and tanged arrowhead (see above). In addition, three worked bone pins/needles, the only artefacts of this type recovered from the site, were found in ditch F.1062 (see Rajkovača, below).

Enclosure C

Only a very small portion of Enclosure C fell within the excavation area, with its north-east corner defined by ditch F.1128. The ditch appeared to cut ditch F.1183, a continuation of the northern ditch of Enclosures A and B although the use of the three enclosures are still considered to be in part at least contemporary (as discussed further below). Although only the north-eastern corner of the enclosure was recorded, its ditch produced an impressive finds assemblage comprising 30 sherds (427g) of pottery, 1439g of animal bone, six worked flints and a Middle Bronze Age side-looped spearhead (the only artefact of this type recovered from the site; see Appleby, below). The finds include an apparently 'placed' deposit comprising the articulated remains of a small dog or fox next to a cluster of pottery sherds (see Figure 8).

Pits, postholes and other settlement features

A total of 67 pits and postholes (excluding confidently dated Iron Age features and Pit Group 2, see below) were recorded in and around Enclosures A, B and C, 43 of these were within Enclosure A. Only three of these features yielded Middle Bronze Age pottery and the majority produced no finds/dating evidence; consequently it cannot be

entirely ruled out that many of the features (including three posthole structures) could be related to the Iron Age occupation recorded in the interior of Enclosure A (detailed below). Having said that, the undated features have provisionally been assigned to the MBA II phase based on the fact that a) given the large domestic finds assemblages within Enclosure A's ditches there clearly was settlement activity on its interior and b) the character of the Middle Iron Age settlement features appears to have been slightly different – roundhouse gullies and clearly defined pit groups. Furthermore the posthole structures identified have clear local parallels in Middle Bronze Age examples from Great Shelford (Whittaker *et al* 1992) and Over (Evans and Tabor 2008).

The postholes of at least three circular structures (Structures S1-S3) were recorded within Enclosures A and B, alongside loose clusters of postholes, which represent further possible buildings, and numerous isolated postholes and pits. Structure S1 comprised six postholes (Fs.1193-1198) forming the arc of a circular structure 5.5m in diameter. Structures S2 and S3 comprised a cluster of some 21 postholes forming two possible circular structures with an overall diameter of 9m. Finds recovered from the structure were limited to two small abraded sherds of pottery provisionally identified as Early Iron Age and which are potentially intrusive; as such a Middle Bronze Age date is still favoured, however, the identification and context of the pottery requires closer attention during full analysis in order to more confidently date the structures and determined whether they are indeed Middle Bronze Age in date.

Of the three pits that contained Middle Bronze Age pottery, pits F.1184/1186 and F.1001 within Enclosure A only yielded a single sherd, which may well be residual. Pit F.1184/1186 is, however, worthy of further mention in that it was one of a cluster of four features including a pit containing an articulated cow skeleton (F.1165; see Figure 8). Pit F.1306, to the south-east of Enclosure A, contained three sherds and was truncated by Middle Bronze Age ditch F1207 meaning it is dated with confidence. Similarly pit F.1132 was truncated by Middle Bronze Age ditch F.1133, meaning it can also be attributed to this phase.

Finally, a large hollow was recorded within the centre of Enclosure A. The feature was amorphous measuring some 8 m across and although it was recorded as a cluster of individual features (F.1150 *et al.*) it is considered to be a single irregular hollow. Finds recovered from the feature comprised ten sherds of Deverel Rimbury pottery and a few scraps of animal bone.

Boundary ditches

To the south-east of Enclosure A, a series of boundary ditches potentially marked the end of a droveway-type feature, which appears to have formed a 'funnel' leading to its south-east entrance and was effectively a continuation of the MBA I 'droveway'. Three separate ditches were recorded (detailed in Table 6); ditch F.1142 formed the north-eastern side of the 'droveway', whilst ditch F.1143/1207 formed its SW side; F.1027 appeared to form a continuation of F.1143/1207 curving to the SW although, their 'junction occurred just beyond the excavation edge and this could not be confirmed.

Ditch	No. of Re-cuts	Orientation	Width (m)	Depth (m)	Finds
F.1027	1?	SW-NE	2.3	0.34	Animal bone, iron nail and Iron Age pottery (both intrusive?)
F.1142	-	NW-SE	1-2.2	0.35-0.75	Pottery, animal bone
F.1143/1207	>2	NW-SE	2.8-3.45	1.18	Pottery, flint, animal bone, burnt stone

Table 6: MBA II boundary ditches

MBA Phase III – Post-settlement activity (Ditches F.1008 and F.1116)

Two parallel ditches situated in the southern half of the excavation area, the northernmost of which clearly truncated the southern sides of Enclosures A and B, have provisionally been attributed to a later Middle Bronze Age phase of land division. The ditches (F.1116 to the north and F.1008 to the south; see Figure 9) measured a maximum of 2.2m and 4.2m wide respectively and up to 1.8m deep; both terminated towards the eastern edge of excavation. Together the ditches yielded 77 sherds of pottery, 763 (10.06kg) of animal bone, 16kg of burnt stone, two worked flints and a fragment of burnt clay. Finds were distributed fairly evenly between the two ditches and the fact that ditch F.1116, which truncated Enclosures A and B produced a relatively diminutive finds assemblage – in contrast to the large domestic assemblages recovered from the ditches of Enclosures A-C – suggests it is a post-settlement feature. The pottery recovered from ditch F.1116 comprised entirely Deverel Rimbury sherds – unsurprising given it truncated Enclosures A and B. Ditch F.1008, however, produced a mixture of Middle Bronze Age and Early Iron Age sherds, the latter being recovered from its upper fills. The presence of Early Iron Age pottery suggests that the feature was still to some extent 'open' during this period and supports the interpretation that it is late in the Middle Bronze Age sequence; equally a later Bronze Age or Early Iron Age date cannot be entirely ruled out and material from the primary fills of the feature should be radiocarbon if possible.

Early Iron Age (*c.*800-350 BC)

Early Iron Age activity was recorded in the south of the excavation area, immediately to the south of MBA III ditch F.1008. The activity was focussed around a large watering hole located at the base of a north-south slope and sealed by colluvium. The watering hole measured some 4m across, it had been re-cut multiple times and was evidently a relatively long-lived feature. The latest cut of the watering hole (**F.1029**) comprised a pit *c.*1.45 m in diameter at the surface, which narrowed to a deep shaft 0.90m in diameter. Unstable ground and the groundwater level, together with the resulting health and safety concerns, meant that it could only be excavated (with the aid of machine-dug steps) to a depth of 2m, however, it was possible to determine its full depth of 2.55m using a hand auger. F.1029 produced the majority of the finds assemblage recovered from the watering hole (detailed in Table 7), including Early Iron Age pottery and an animal bone assemblage dominated by cattle (see Knight and Sealey, and Rajkovača, below).

Feature No.	Pottery (Qty.)	Bone (Qty.)	Flint (Qty.)	Total
1029	135 (1142g)	358 (3774g)	2 (22g)	**495 (4938g)**
1030	-	32 (340g)	-	**32 (340g)**
1308	-	13 (690g)	-	**13 (690g)**
Total	**135 (1142g)**	**403 (4804g)**	**2 (22g)**	**540 (5968g)**

Table 7: Watering hole F.1029/1030/1308 assemblage breakdown

In total six earlier phases or 'cuts' of the watering hole were recorded. F.1030 was effectively an earlier version of F.1029, which evidently silted up and was re-excavated to create the latter feature. In contrast, F.1308, just to the east of and cut by F.1029/1030, was effectively a separate watering hole/well and comprised a shaft 1.05m in diameter by 2m deep. Fs.1036, 1066, 1066 and F.1067 were all very truncated by later features and represent earlier possible watering holes/wells.

In the area immediately around the watering hole, a total of eleven pits (Fs.1013, 1020, 1032-33, 1039-40, 1050, 1324, 1325-26, 1333 and F.1336) ranging in size from 0.27 m to 1.80 m in diameter and from 0.19 m to 1.05 m deep were recorded, together with a loose cluster of five postholes (Fs. 1045, 1331, 1334-35 and F.1337). Many of the pits and postholes were sealed beneath a relatively extensive layer of colluvium, deposited at the base of the north-south slope, which also preserved a deposit of material (F.1031) containing noticeably higher quantities of charcoal and burnt stone than the surrounding soils. The higher densities of burnt stone and charcoal appear to be have arisen from activity related to three of the aforementioned pits (Fs.1032, 1033 and F.1039), which were sealed, and partially in-filled, by deposit F.1031. The activity also seems likely to be related to the main watering hole given its proximity. The pits, postholes and burnt stone spread produced little in the way of artefacts; five sherds of Early Iron Age pottery (from F.1031 and F.1040) and seven fragments of animal bone.

Middle Iron Age (*c.*350-50 BC)

Evidence of Middle Iron Age activity was recorded across the South Plot excavation area and comprised pits, postholes, at least one roundhouse gully and a series of linear boundary ditches. The features are characteristic of Middle Iron Age settlement and although widespread, a group of features within and around Middle Bronze Age Enclosure A suggest that this earlier feature particularly was a deliberate focus for settlement.

The main Middle Iron Age evidence derives from a total of 64 pits recorded across site, some of which yielded significant finds assemblages. The pits generally occurred in clusters – or in one case an alignment following the course of Middle Bronze Age ditch F.1008 – and can be separated into seven *Pit Groups (PGs):*

PG 1 (the pit alignment)

Pit Group 1 comprised a total of 20 pits, which form an approximately east-west alignment along the northern edge of MBA III ditch F.1008 (see Figure 9). The pit group largely consists of a line of 14 single pits located an average of 1.70 m apart,

however an additional four pits formed a cluster at the western end of the alignment, with two further pits occurring just to the south. The pits' dimensions ranged from 1.02 m to 2.17 in diameter and from 0.19 m to 0.54 m in depth. Postholes were encountered in the base of four of the pits (Fs.1018, 1015, 1017 and 1034), three of which formed part of the alignment; the function of these was not clear but they potentially represent some kind of marker post. A relatively substantial finds assemblage dominated by Middle Iron Age pottery and animal bone was recovered from the pit group (see Table 8; Knight and Sealey, and Rajkovača, below).

Pit	Pottery (Qty.)	Animal bone (Qty.)	Other** (Qty.)	Total
F.1002	-	23 (25g)	7 (114g)	**30 (139g)**
F.1004	23 (97g)	23 (97g)	1 (2g)	**32 (118g)**
F.1005	9 (12g)	35 (15g)	-	**44 (27g)**
F.1007	5 (52g)	40 (106g)	-	**45 (158g)**
F.1009	2 (5g)	-	-	**2 (5g)**
F.1011	1 (2g)	15 (50g)	1 (4g)	**17 (56g)**
F.1012	2 (18g)	3 (98g)	-	**5 (116g)**
F.1015	4 (83g)	39 (259g)	3 (44g)	**46 (386g)**
F.1018*	83 (1954g)	209 (1005g)	86 (3233g)	**378 (6192g)**
F.1025	2 (45g)	21 (372g)	-	**23 (417g)**
F.1026	26 (188g)	154 (254g)	2 (8g)	**182 (450g)**
F.1028	19 (374g)	351 (1124g)	1 (24g)	**371 (1522g)**
F.1035	3 (16g)	42 (195g)	4 (40g)	**49 (251g)**
F.1043	5 (4g)	16 (5g)	-	**21 (9g)**
F.1047	2 (6g)	1 (1g)	1 (1g)	**4 (8g)**
F.1051	29 (34g)	21 (75g)	4 (6g)	**55 (115g)**
Total	**215 (2890g)**	**993 (3681g)**	**110 (3476g)**	**1318 (10047g)**

Table 8: Pit Group 1 assemblage breakdown (*finds from posthole F.1017 are included in F.1018; pits with no finds= Fs.1003, 1010, 1016, 1052; **Other= burnt flint, flint, baked/burnt clay and 1x copper alloy object)

The large majority of the finds assemblage was recovered from the western end of the alignment/cluster, indeed almost 90% by weight came from just five of pits in this area. One pit (F.1018) was particularly rich in finds and produced pottery (including sherds with incised decoration), animal bone and two triangular clay loomweights, one partial and one complete (Figure 9; Timberlake, below). The alignment of Pit Group 1 with ditch F.1008 is significant and although two of the pits cut the earlier ditch, which had clearly silted up by the Middle Iron Age, it is clear that it continued as a boundary into this period. It seems likely that an up-cast bank on the northern side of ditch F.1008, survived as an earthwork and boundary that became the focus of the Middle Iron Age pit alignment. This would also explain why the pits, having apparently been dug through an upstanding bank, which has since been truncated, were all relatively shallow in their surviving form.

PG 2 (and features within Middle Bronze Age Enclosures A and B)

Pit Group 2 comprised seven pits located on the eastern side of the interior of Middle Bronze Age Enclosure A. The pits ranged from 0.46 to 1.90 m in diameter by 0.10 m to 0.38 m in depth and yielded markedly fewer finds than Pit Group 1 (see Table 9). As seen in Pit Group 1, postholes were recorded in the base of two of the pits (Fs. 1126 and 1139).

Pit	Pottery (Qty.)	Animal bone (Qty.)	Burnt /baked clay (Qty)	Total
F.1126	26 (400g)	21 (88g)	5 (26g)	**52 (514g)**
F.1130	4 (109g)	20 (1036g)	-	**24 (1145g)**
F.1135	-	26 (59g)	-	**26 (59g)**
F.1136	-	1 (7g)	-	**1 (7g)**
F.1302	1 (2g)	6 (42g)	-	**7 (44g)**
Total	**31 (511g)**	**74 (1232g)**	**5 (26g)**	**110 (1769g)**

Table 9: Pit Group 2 assemblage breakdown (pits with no finds = Fs.1139 and 1147)

A further eight features within MBA II Enclosures A and B yielded Middle Iron Age pottery and seem likely to be broadly contemporary with Pit Group 2. These comprised two pits (Fs. 1192 and 1293), two postholes (Fs. 1209 and 1291) and a short linear gully (F.1170), which yielded animal bone as well as comparatively large quantities of burnt/vitrified clay (see Timberlake, below). In addition an inter-cutting cluster of three pits (Fs. 1089, 1121 and F.1129), one of which yielded three sherds of Middle Iron Age pottery, cut the southern terminus of MBA II inner enclosure ditch F. 1088.

As previously discussed there were a total of 43 features within Enclosures A and B, which cannot be confidently dated (including Structure S1-3) and it is possible that a high proportion of these belong to the Middle Iron Age settlement phase. In addition a short linear gully (F.1181) of unknown function contained a small sherd of Early Iron Age pottery but is considered more likely to be Middle Iron Age. One further possible structure is represented by an arcing gully (F.1269), which may represent part of a truncated roundhouse gully; the gully is located immediately to the east of Pit Group 2 but produced no finds or dating evidence.

PG 3

Pit Group 3 was located in the area between the outer and middle ditches of MBA II Enclosure A. Comprising eight pits, the relatively shallow surviving depth of the features suggests that they were truncated and were originally dug through an upstanding bank that existed between the two enclosure ditches. In addition, the fact that none of the pits truncated either of the ditches indicates that the latter were certainly still clearly visible during the Middle Iron Age. The pits ranged in diameter from 0.5 m to 2.05 m by up to 0.45 m in depth. As with Pit Group 2, the pits produced

comparatively few finds (detailed in Table 10), with animal bone forming the larger part of the assemblage and only eight sherds of pottery recovered.

Pit	Pottery (Qty.)	Animal bone (Qty.)	Flint (Qty.)	Total
F.1215	1 (9g)	3 (6g)	-	**4 (15g)**
F.1221	-	106 (663g)	-	**106 (663g)**
F.1228	1 (5g)	1 (10g)	-	**2 (15g)**
F.1229	4 (76g)	50 (332g)	-	**54 (408g)**
F.1230	-	5 (154g)	-	**5 (154g)**
F.1231	2 (71g)	25 (215g)	1 (11g)	**28 (297g)**
Total	**8 (161g)**	**190 (1380g)**	**1 (11g)**	**199 (1552g)**

Table 10: Pit Group 3 assemblage breakdown (pits with no finds = F.1223 and F.1232)

PG 4

A small cluster of four pits (0.82-1.70 m diameter; 0.09 m-0.16 m depth), Pit Group 4 was located just to the north of Enclosure A. Four sherds of Middle Iron Age pottery provided a date for the pit cluster, however, only a small assemblage of finds – again largely animal bone – was recovered (see Table 11).

Pit	Pottery (Qty.)	Animal bone (Qty.)	Total
F.1094	1 (33g)	-	**1 (33g)**
F.1095	3 (94g)	26 (198g)	**29 (292g)**
F.1102	-	38 (102g)	**38 (102g)**
Total	**4 (127g)**	**64 (300g)**	**68 (427g)**

Table 11: Pit Group 4 assemblage breakdown (pit with no finds = F.1101)

PG 5

Pit Group 5 comprised five pits (0.50-2.10 m diameter; 0.10 m-0.30 m depth). The pit group was located to the north of Enclosures A and B and *c.* 9.50-16m to the west of the roundhouse gully of Structure S4. Just two small fragments of Middle Iron Age pottery were found amongst a small finds assemblage recovered from the pit group (see Table 12).

Pit	Pottery (Qty.)	Animal bone (Qty.)	Other* (Qty)	Total
F.1093	-	-	1 (53g)	**1 (53g)**
F.1098	2 (1g)	1 (5g)	-	**3 (6g)**
F.1100	-	14 (55g)	6 (31g)	**20 (86g)**
Total	**2 (1g)**	**15 (60g)**	**10 (96g)**	**24 (145g)**

Table 12: Pit Group 5 assemblage breakdown (*Other=slag, shell, flint; pits with no finds = F.1097 and F.1099)

PG 6 and Structure S4

In the north-east of the South Plot excavation area a curvilinear gully (F.1284) and a small group of inter-cutting pits was encountered. The curvilinear gully measured 10.5m in diameter, was extremely truncated (maximum depth = 0.10 m) and produced no finds, however, it clearly represented a roundhouse gully (Structure S4). Located on what appears likely to be the northern side of an east facing entrance – although this cannot be confirmed given the discontinuous, truncated form of the roundhouse gully – a cluster of five inter-cutting pits (0.50-1.30m diameter; 0.12m–0.75m depth) was recorded (Fs.1339-3143). Only one of these pits (F.1339) produced a small finds assemblage comprising a single sherd of Middle Iron Age pottery and twelve fragments of animal bone.

PG 7

Pit Group 7 was markedly different in character from the other Middle Iron Age pit groups and was located immediately to the south of Pit Group 1 and MBA III ditch F.1008, partially truncating the latter's southern edge. A total of 14 pits were recorded ranging in diameter from 0.8m to 4.2m and from 0.2m to 1m in depth. The pits formed an inter-cutting mass of features, which represents the cutting and re-cutting of multiple pits at this location probably over a relatively prolonged period. The largest and probably the latest of these pits (F.1056) produced a comparatively large finds assemblage including 157 sherds of Middle Iron Age pottery and almost 5kg of animal bone, largely cattle. Five of the remaining 13 pits produced finds, which are detailed in Table 13, below. The function of the pits was not immediately clear, however, whilst not as deep, or 'shaft-like' as the Early Iron Age watering hole(s) just to the south-east, the pits are considered most likely to be pit-wells/watering holes.

Feature No.	Pottery (Qty.)	Bone (Qty.)	Burnt/baked clay (Qty.)	Total
1056	157 (744g)	353 (4836g)	12 (693g)	**522 (6273g)**
1055	15 (53g)	24 (217g)	-	**39 (270g)**
1309	4 (23g)	6 (7g)	-	**10 (30g)**
1310	2 (21g)	3 (47g)	-	**5 (68g)**
1315	-	13 (140g)	-	**13 (140g)**
1322	7 (32g)	49 (535g)	-	**56 (567g)**
Total	**185 (873g)**	**448 (5782g)**	**12 (693g)**	**645 (7348g)**

Table 13: Pit Group 7 assemblage breakdown (pits with no finds = Fs.1053-54, F.s1316-21)

Ditches

Two parallel ditch lines, effectively forming a double-ditch boundary occupying the same north-west by south-east alignment as Pit Group 1 were recorded close to the eastern edge of the south plot. The ditch lines were each formed by ditch segments, with gaps or 'causeways' between, and extended beyond the edge of the excavation to the east beyond which they have previously been recorded at the CBC Boulevard Site (Newman *et al*. 2010). The northern ditch line comprised two segments, F.1122 and

F.1123, the latter truncating the latest phase of MBA II enclosure A. The southern ditch line comprised three segments; F.1125, F.1131 and F.1134. Eight sherds of pottery recovered from three of the ditch segments indicate a Middle Iron Age date; other finds comprised a small assemblage of worked flint (9 pieces) and a single fragment of animal bone. Two iron nails cast some doubt on the boundary's Middle Iron Age attribution, as they seem likely to be Roman at the earliest, however, these artefacts could well be intrusive or deposited in the top of the partially silted-up Iron Age ditch during the Roman period.

Late Iron Age/Roman (*c.*50 BC-410 AD)

Surprisingly little evidence of Late Iron Age and Roman activity was recorded within the South Plot excavation area, especially given the proximity of Roman settlement sites to the north-east at the AstraZeneca NCS North Plot (see below) and immediately to the east at the CBC Boulevard and Energy Centre Sites (Newman *et al.* 2010; Collins 2014). Two ditches yielded Late Iron Age/Roman finds and can be dated broadly to this period. One very truncated linear ditch (F.1279) bisected the excavation area and cut the ditches of the Middle Bronze Age enclosures. Aligned north-west to south-east the ditch yielded eleven sherds of Late Iron Age/1st century pottery (see Perrin, below) as well as two residual sherds of Early Iron Age pottery. In addition a Late Iron Age/Roman brooch was recovered from directly above the ditch following metal detecting of the subsoil during machine stripping of the site (see Appleby, below). In the south-eastern corner of the excavation area and extending beyond its eastern edge, north/south aligned ditch also yielded 1st century century pottery and evidently marks the edge of the Late Iron Age/Conquest period settlement to the east at the Boulevard and Energy Centre site (Newman 2010; Collins 2014).

Four pits (Fs.1060, 1063, 1064 and F.1072) located just to the south of the Middle Bronze Age enclosures have also been tentatively identified as Roman quarry pits given their irregular form. Only one of the pits (F.1064) can be assigned to this phase with any confidence due to the presence of two sherds of pottery within its backfill. The remaining pits produced only Iron Age pottery (eleven sherds), however, whilst this cast some doubt on their date for the features, their similarity in form and proximity to F.1064 means they have been included in the Roman phase.

Medieval

Five plough furrows representing the remnants of medieval ridge and furrow were recorded in the north-west of the South Plot excavation area. The furrows, which were aligned approximately east-west, were *c.*1.70m wide by a *c.*0.30m deep and were spaced around 13m apart.

Unphased

Of the undated or poorly dated features excavated, the majority have been included within the Bronze Age or Iron Age phases detailed above. A number of features, however, remain unphased and can only be very broadly dated.

A pair of pits in the far north of the excavation area (F.1353 and F.1354) contained small fragments of burnt flint/stone within their fills as well as very small (unrecoverable) fragments of heavily degraded pottery, suggesting a prehistoric date. Close to the southern edge of the excavation area an undated pit-well (F.1000) was recorded. Measuring 1.58m in diameter by 1.52m deep, the pit-well produced no finds and could have been associated with either the Early/Middle Iron Age activity close by, or be an 'outlying' Middle Bronze Age feature. Some 51.31 m to the east of the pit F.1000, a 'pair' of pits (F.1058/1059) together comprised a 'cooking pit' the feature is characteristically prehistoric and based on local parallels is perhaps most likely to be Middle Bronze Age (see Timberlake, below).

Finally, two undated shallow linear features (possible ditches F. 1019 and F.1044) were recorded on a north-west/south-east alignment in the south of the excavation area alongside an undated north-east/south-west aligned linear ditch (F.1021/F.1091), which truncated Roman ditch F.1061.

SOUTH PLOT: DISCUSSION

Earlier prehistoric

On the whole, the limited evidence of earlier prehistoric activity – two Early Neolithic pits and residual flint and pottery within Enclosure A-Cs' ditches is consistent with the dispersed activity recorded across the Addenbrooke's landscape during this period (see eg. the similar flint assemblages recovered from tree throws at the LMB site immediately to the north of t he South Plot; Collins 2009). Whilst there was clearly an earlier prehistoric presence in the landscape, the evidence suggests activity was not on a significant scale.

Middle Bronze Age

Field system and enclosure development

As detailed above, the earliest Middle Bronze Age activity comprised the MBA I field system, which is characterised by a series of relatively diminutive linear ditches forming two droveway-type features extending beyond the edge of excavation to the north-east and south-east respectively (see Figure 10). A series of east-west boundary ditches on the northern edge of the excavation area and a potential paddock (F1103/1110) form other elements of the contemporary landscape, however, the droveways are the dominant feature(s). No evidence of settlement contemporary with this phase was encountered – very few finds were recovered from the MBA I ditches – and it would appear that during this period management, and particularly the movement, of livestock, was the primary concern.

The MBA I field system is potentially part of a much more extensive field system extending as far as Clay Farm some 600m to the west, where an early Middle Bronze Age 'strip' field system was recorded (Phillips and Mortimer 2012). To the east, elements of a Middle Bronze Age field system have been recorded at the new

Papworth Hospital site (Oxford East forthcoming) whilst possible 'pre-Roman' boundary ditches were also recorded at the MSCP site (Tabor 2013). In being the point where two droveways met, it would therefore appear that the South Plot site was a focal point within a much more extensive field system and an important place in terms of moving and possibly corralling livestock.

The site's role as a 'central' place within the local landscape was strengthened by the establishment of Enclosures A, B and C during the MBA II. There was significant change in the site layout during this phase with the northern droveway' effectively being blocked and potentially the boundaries to the north of the enclosure falling out of use; to the south, however, the southern droveway was clearly maintained throughout MBA Phase II and formed the approach to Enclosure A's south-eastern entrance.

The MBA II phase clearly marks the peak of Middle Bronze Age occupation at the site; three radiocarbon dates previously attained for the enclosure ditches provide date ranges of *c.*1600-1400 cal. BC and *c.*1400-1200 cal. BC for this activity (see Evans 2008 *et al*, 152). As discussed above, the development of Enclosures A-C and particularly the concentric triple-ditch form of Enclosure A was a complex process of relatively frequent alteration and enlargement. Multiple ditch cuts are evident within the enclosure ditches and in a number of instances particularly in the north-west corner of Enclosure A, sections of the enclosure ditch were completely back-filled in apparent phases of re-design. Add to this the fact that the northern arms of the inner and middle ditches of Enclosure A were originally dug as a series of segments and it is clear that the multi-ditch enclosure was the result of a complex sequence of development. Although stratigraphic relationships between enclosure ditches were recorded, the degree to which ditches/parts of the enclosure were on the one hand significantly altered/re-cut whilst on the other displayed no evidence of re-cutting at all, make creating a definitive and cohesive model of enclosure development challenging.

A provisional model for the development of Enclosures A-C is shown in Figure 10. It has been assumed that the discrepancy in the number of times enclosure ditches were re-cut is the result of some ditches simply being 'cleaned out' rather than formally re-cut (making multiple phases archaeologically 'invisible'), while in some cases it has also been necessary to amalgamate some of the more subtle 'sub-phases'. As such the model offers a relatively basic three phase sequence of development starting with a simple single-ditch phase of Enclosures A and B, which developed – potentially quite rapidly – into its double-ditch form. As detailed in the results section it is open to debate as to whether the enclosure was ever actually triple-ditch given the evidence for the deliberate back-filling of the inner ditch and it is possible that broadly speaking the enclosure chronology can be divided into an 'early' and a 'later', slightly enlarged, double-ditch form. Given that the middle ditch also appears to have been deliberately back-filled with midden-derived material it can also be argued that the enclosure in its final form comprised only the outer ditch, however, the fact that the extent of Middle Iron Age Pit Group 3 is clearly defined by the middle and outer Enclosure A ditches suggests they were both still clearly visible as boundaries during the Iron Age.

Enclosure B is interpreted as being paired with Enclosure A and throughout the duration of their use the two seem to have effectively formed two compounds within a larger double-enclosure. Their relationship with Enclosure C and the where the latter fits in to the sequence is more difficult to determine given that the majority of the enclosure falls outside the excavation area. The fact that Enclosure C's ditch was recorded as truncating Enclosure B's northern ditch is also slightly problematic, and bearing in mind that the relationship rests on the interpretation of a single section, the stratigraphy here clearly requires further consideration given that the most satisfactory interpretation, certainly in terms of spatial relationships, is that Enclosure C was contemporary with A and B and was the third element of a triple-enclosure. With this in mind it will be important to incorporate the results of the Green Corridor evaluation (Slater and Dickens 2008), where parts of Enclosure C's were also encountered, into the full analysis of the AstraZeneca NCS site. The evaluation revealed a series of ditches of similar character to the South Plot enclosure ditches, which yielded an assemblage of 33 sherds of Deverel Rimbury pottery; two articulated animal skeletons within pits – cow and red deer – were also recorded along with a number of burnt flint-filled pits (*ibid.*).

Finally, the two curving MBA III ditches represent a final Bronze Age phase of land division, established following the abandonment of Enclosures A-C and the in-filling of their south-western ditches. Although unspectacular in terms of their finds assemblages – reinforcing their attribution as post enclosure/settlement features– the ditches represent a marked change in landscape organisation and are potentially significant. A substantial Middle Bronze Age ditch recorded during excavation of the new Papworth Hospital site (Oxford East forthcoming) appears to be a continuation of the southern MBA III ditch and together they represent a major feature within the 'post-enclosure' landscape.

Site function and economy

The layout of the early droveways strongly suggests that during the MBA I phase the site's primary role was concerned with livestock management and movement. With no evidence for contemporary settlement anywhere within the vicinity during this period it seems that this was a purely agricultural landscape zone. Given that the South Plot is the place to which both droveways appear to have led, the site can be interpreted as an important place within this landscape; potentially livestock was herded along the droveways and corralled at the site (although no definitively 'early' paddocks/enclosures that may relate to this were recorded). It seems likely that the site continued to be used in such away into MBA Phase II and it may be that stock control and management was the initial reason for the establishment of Enclosures A-C. The fact that Enclosures A and B (and possibly C?) were inter-connected by entrances, which aligned with the south-east droveway suggests a possible 'stockyard' role for the enclosures and that separation, sorting and, in all likelihood, protection of livestock may have been undertaken at the site (see eg. Pryor 1996).

However, whether or not livestock management was the initial function of the enclosures, it is also clear that during MBA Phase II there was significant settlement activity within them. As discussed above, apart from three potentially Middle Bronze Age posthole structures, all of the evidence for settlement came from material

deposited within the enclosure ditch fills and is potentially derived from surface middens, although further work including fragmentation analysis of the pottery assemblage and soil micromorphology is required to better establish the character of these deposits. Large quantities of burnt stone (presumably waste from cooking activities), pottery and animal bone suggests relatively intensive domestic activity within the enclosure, whilst the burnt clay/daub recovered probably derives from structures on the site.

Cattle were the main food species – and presumably also the main livestock species – although sheep/goat and pig as well as wild species such as red and roe deer were also present within the faunal assemblage. The mollusc assemblage provides further evidence for pastoral landuse, however, charred cereal remains were recovered from the bulk environmental samples and arable probably also played a role in the site's economy. Evidence for craft activities undertaken at the site was scarce although copper alloy artefacts including three chisels and an awl, as well as three worked bone pins were recovered from the enclosure ditch fills – perhaps significantly all three of the bone pins were recovered from the eastern ditch of Enclosure B. The metalwork assemblage also included a side looped bronze spearhead, as well as a fragment of a second spearhead – finds, which are not common in a settlement context and could be considered artefacts associated with some degree of status. Finally, the small assemblage of Middle Bronze Age flint (see Beadsmoore, below), suggests that flint was not worked or used to any great extent; this is in marked contrast to Clay Farm where relatively extensive flint working and use appears to have taken place (Bishop in Phillips and Mortimer 2012).

In summary, the evidence suggests that relatively quickly during the MBA II phase the enclosures became an important settlement foci; whether or not they continued to have a function in livestock management is unclear. Whether Enclosure A was ever truly triple-ditched is also unclear but either way the enclosures are impressive features, whose layout has a formality and structure, which is unusual in Middle Bronze Age settlements (cf. the much less formal Clay Farm enclosures; Phillips and Mortimer 2012). In this regard it is tempting to assign some special status to the enclosure although in truth, evidence of ceremonial, ritual or high status activity is scarce; articulated animal skeletons were encountered in two instances, whilst disarticulated human bone was recovered from the ditches along with an articulated skeleton in a terminus of Enclosure A's middle ditch, however, none of these are particularly out of place in later prehistoric settlement contexts. Perhaps, therefore, the major double or triple-ditch boundaries of the NE and SE sides of the enclosure had significance beyond that of a settlement boundary and represent the edge of a more extensive zone of Middle Bronze Age settlement and field systems incorporating Clay Farm (Phillips and Mortimer 2012).

Local and regional context

Considering the site within its regional Middle Bronze Age context will be a major part of the full analysis stage of work. Most important locally are the Middle Bronze Age remains excavated at Clay Farm some 600m to the west of the AstraZeneca NCS South Plot (Phillips and Mortimer 2012). Here a similar process of early field system replaced by enclosed settlement has also been recorded and the two sites almost

certainly inhabited the same contemporary landscape. The excavations at Clay Farm covered a much larger area than the South Plot and the Middle Bronze Age remains were consequently more extensive, however, when the site is broken down into individual settlements (eg. *Settlement 1* and associated enclosures; ibid.) the two sites are clearly comparable. *Settlement 1* produced similar quantities of animal bone to that recovered from the South Plot enclosures, and the pottery assemblages are also comparable in terms of type, style and, broadly speaking, quantity (of the latter, an exceptionally well preserved deposit within one part of an enclosure ditch, potentially explains Clay Farm's higher pottery count). Finds from Clay Farm such as amber beads, worked bone pins and copper alloy awls and chisels are also clearly reminiscent of the South Plot Enclosure A-C's finds assemblage (ibid.). Having said that the sites are also in many ways different, the more structured and formal enclosure layout evident at the AstraZeneca NCS South Plot compared to the Clay Farm enclosure system, for example. Given that Middle Bronze Age settlement sites are uncommon (Medleycott 2011, p20), and that settlement associated with sizeable pottery and animal bone assemblages are particularly rare, the sites form part of an important Bronze Age landscape, which has great potential in furthering our understanding of Middle Bronze Age settlement on a regional and national scale

Beyond the immediate locale, whilst not common, the South Plot enclosures can be added to a growing corpus of Middle Bronze Age enclosures identified in the East of England. Newark Road compound at Fengate Peterborough, with its multi-enclosure, double ditch form offers perhaps the closest parallel (Pryor 1996); a roundhouse within one of the enclosures and a human burial within a ditch terminus at an entranceway also closely mirror aspects of Enclosures A-C. The compound has been interpreted as some kind of 'community stockyard' by Pryor (1996) with a secondary settlement use although this interpretation has more recently been challenged by Evans *et al* (2009) with the suggestion that settlement, which could feasibly be regarded as higher status and/or defended, could have been the compound's primary function. An enclosure recently excavated at Orsmby St. Michael, Norfolk, along with numerous others in the county identified from aerial photographs (Gilmour *et al* 2014), is also comparable in form if not necessarily function. Finally, particularly given the Ardleigh Ware affinities recognised within the pottery assemblage (see Knight and Sealey, below), the South Plot's enclosures should certainly be considered alongside the Bronze Age enclosures of Essex, particularly the sub-square settlement enclosure at Loft's Farm (Brown *et al.* 1988). Although the Essex enclosures are Late Bronze Age in date – with pottery more comparable with the Early Iron Age assemblage from the South Plot – Enclosures A-C need to be considered in relation to these type-sites.

Iron Age

The Early and Middle Iron Age settlement remains encountered on the South Plot were something of a surprise given that they were not identified during evaluation – although initially thought to be Iron Age, Enclosures A-C were relatively quickly proven to be Bronze Age (Slater and Dickens 2008) – and contemporary remains in the extensively excavated surrounding area are scarce. Dealing first with the Early Iron Age watering hole (F.1029) and its associated remnant 'burnt stone spread' and pits; whilst self-evidently being a place where water was procured, cooking or else

heating of water with 'hot rocks' was also probably undertaken at the site and pottery and animal bone within F.1029 suggests settlement activity close by, albeit on a small scale. Potentially, this could have been an outlying feature of the open settlement at Clay Farm where features including post-built structures, pits and a number of large pits similar to F.1029, one of which produced some 29kg of pottery, were encountered within the earlier Middle Bronze Age enclosure system (Phillips and Mortimer 2012). Slightly further afield, a significant Early Iron Age site comprising some 721 pits and sixteen four post structures situated along a major boundary ditch has been excavated at Trumpington Meadows (Patten 2012), whilst Wandlebury hillfort to the south-east of Addenbrooke's originated as an Early Iron Age open settlement (French 2004). As such, it is clear that although not greatly significant in itself, the activity at the South Plot took place within an extensively settled and utilised landscape.

The Middle Iron Age features appear to represent more extensive settlement activity, although on the whole rates of finds recovery were low. The one exception to this was the pit alignment/cluster (Pit Group 1), which was orientated on MBA III ditch F.1008. Within this pit group F.1018 produced the sites only significant Middle Iron Age finds assemblage – including 83 sherds of pottery, animal bone and a complete clay loomweight – and the only convincing evidence of Middle Iron Age settlement-related activity on any scale. Pit Group 1, loosely described here as a pit alignment, has an unusual form and is in fact different in character to most contemporary pit alignments, which appear to have functioned as boundaries and contain few finds. The way in which the pit alignment appears to have developed into a cluster at its western end, from where most of the finds were recovered is also unusual and contrasts with the more inflexible linear forms of many 'classic' pit alignments. Pit Group 1 is perhaps, therefore, more comparable to the large Early Iron Age pit groups at Trumpington Meadows (Patten 2012) or the more contemporary Middle Iron Age pit groups at Broom, Bedfordshire (Tabor 2014); in both instances pits occurred in clusters along linear boundaries and produced significant 'domestic' assemblages. While providing the most convincing evidence of settlement within the South Plot, no other settlement features were recorded within the immediate vicinity of Pit Group 1 and pit F.1018 and instead, the location of any settlement appears more likely to have been within MBA II Enclosure A and immediately to its north.

Within Enclosure A, vitrified clay from gully F.1170 is almost certainly derived from a building in the vicinity, whilst part of a possible roundhouse gully was also recorded; in addition, that many of the numerous postholes in this area of the site could be related to Iron Age settlement cannot be discounted. To the north of Enclosure A, the roundhouse setting represents clear evidence of a structure although no finds were recovered from its gully and only a single pottery sherd was found within its associated pit group (PG 6). The general lack of finds in any significant quantities from the area around these structures suggests that potentially off-site surface middens - perhaps including one in the vicinity of Pit Group 1 - were utilised by their inhabitants with little domestic refuse finding its way in to nearby settlement features.

It is clear from the way that Pit Group 3 respects its ditches that MBA Enclosure A was still visible as a feature during the Middle Iron Age and that it was deliberately chosen as a site for settlement. There is no evidence for any settlement continuity, and within the bounds of Enclosure A, a settlement hiatus of up to a millennia seems

likely. Together with the fact that Pit Group 1 was clearly aligned on MBA III boundary F.1008, the Middle Iron Age settlement within Enclosure A is clear evidence of the re-use of 'fossilised' landscape features, although the extent to which the Middle Bronze Age features continued to function as boundaries through the Late Bronze Age and Early Iron Age is unclear.

In terms of the Iron Age economy, cattle were once again the prevalent livestock species although the Middle Iron Age saw an increase in the number of sheep (see Rajkovača, below). The plant remains also suggest that the economy was largely pastoral with only scarce evidence of cereals (see Fryer, below).

Within a local context the Middle Iron Age features on the South Plot appear to be part of a relatively dispersed pattern of 'open' settlement – evidently sometimes utilising existing earthworks – that is also recorded at Clay Farm (Phillips and Mortimer 2012) as well as at Glebe Farm to the west (see eg. Collins 2011). Whilst more significant contemporary sites are recorded in the surrounding landscape, not least the 'hillfort' at War Ditches (see Evans *et al.* 2008), within the immediate locale this appears to represent potentially less agglomerated and smaller scale settlement than in the preceding Early Iron Age.

Roman - present

Evidence of post-Middle Iron Age activity within the boundaries of the South Plot is scarce, which is surprising given the Late Iron Age and Roman activity immediately to the east and north-east (see eg. Collins 2014 and the Roman site at the AstraZeneca NCS North Plot). Roman features were limited to three ditches (two of which are located on the periphery of the Energy Centre/Boulevard site (Newman *et al* 2010) and a series of possible quarry pits; evidently the South Plot represented a relatively 'little-used' part of the Late Iron Age/Roman landscape and lay on the western edge of the main settlement zone. Medieval activity was limited to the ridge and furrow recorded in the north-west of the site, and represents low level agricultural activity that conforms to our current understanding of the contemporary landscape.

NORTH PLOT: RESULTS

A total of 804 features were recorded on the AstraZeneca NCS North Plot – although as discussed below, many ditches have unavoidably been given multiple numbers – and 1020 interventions excavated. As already mentioned, the site was covered by a substantial layer of overburden (over 2.5m thick in places) dumped on the site in the 1960s during the construction of hospital buildings at Addenbrooke's and derived from the excavation of its foundations and basements. Removal of this deposit revealed that the site had been largely stripped of topsoil prior to this material being dumped. It was also clear that machinery, most likely dumpers, had driven across this stripped surface resulting in compaction of the surface and archaeology in some places and more seriously 'rutting' of the surface in 'softer' areas of the site. However, whilst this had clearly damaged or obscured archaeology in some limited areas, preservation and survival of the archaeology was surprisingly good, if a little truncated. Remarkably the burials (cremations and inhumations) in two cemeteries

survived and an inhumation cemetery particularly appeared to have suffered little as a result of this 20th century activity.

The archaeology recorded on the North Plot comprised a dense pattern of Roman boundary ditches and enclosures interspersed with Roman settlement features including structural remains, wells and pits alongside two small cemeteries (see Figures 11 and 12). The pottery recovered indicates that activity occurred at the site from the mid-1st century through to the 4th century AD (see Perrin, below), whilst the quantity of material dating to the 2nd and 3rd centuries suggests it was most intense during this period. It is clear from the site plan that during this period the site was constantly evolving and changing and that although an approximate NNE-SSE alignment was being adhered to, the layout of the site and its fields, paddocks and enclosures was constantly changing. The settlement layout was evidently not formalised to a high degree with boundaries regularly being shifted and enclosures/paddocks redefined. The resulting complexity has made detailed phasing of the site extremely challenging; a problem that has been exacerbated by a number of factors: i) there was little change in the alignment of the settlement layout over time (phases cannot therefore be separated based on this) ii) the majority of features produced little pottery and when recovered the majority of the pottery is not closely dateable or comprised 'mixed' assemblages iii) relationships between features were not clearly distinguishable in plan or section. It was also evident that many ditches had been re-cut on multiple occasions (see Figure 13) and the difficulty in tracing one individual enclosure or boundary ditch from one archaeological intervention to the next, meant that in many instances multiple feature numbers had to be allocated.

Phasing of the site is therefore ongoing and further work is required in order to more closely define individual episodes of occupation/use (as has been done on the South Plot). Consequently for the purposes of this assessment provisional phasing of the site is included in the North Plot's discussion and the following results section adopts more of a 'gazetteer' format, detailing the site by feature type; full phasing of the site will be undertaken as part of the analysis phase of work. Likewise, the North Plot specialist reports do not attempt to split the various Roman finds assemblages into sub-phases – again this will be done during full analysis – but rather assess them as one single Roman assemblage.

Pre-Roman

Clear evidence of prehistoric activity was limited to residual finds of flint, Late Mesolithic/Early Neolithic and Neolithic in date and including a laurel leaf (see Beadsmoore below), which attest to background activity within the landscape. In addition sherds provisionally identified as Early to Middle Iron Age occur amongst the pottery assemblage.

Roman (1st-4th century AD)

Land division and enclosures

It is clear from the site plan that there is a dominant NNE-SSE axis on which the various field and enclosure systems were laid out. However, it is also apparent that, not only were established boundaries re-cut, they were often shifted and their alignment slightly changed over time, probably in quite an *ad hoc* fashion. As discussed, the resulting grid of boundary ditches is, therefore, difficult to closely phase, however, based on overall site stratigraphy a general distinction can be made between an early system of boundaries and a later system of enclosures.

'Early' ditches

The 'early' system is characterised by an extensive grid pattern of ditches generally measuring less than 1.5m wide and a maximum of 0.5m deep. Indeed the dimensions of many were significantly less and although many were undoubtedly truncated it is clear that these were never substantial boundary features. The vast majority yielded few or no finds and where finds were recovered assemblages were characterised by small abraded pot sherds – broadly dated to the 1st-3rd centuries – and small bone fragments; this particularly applies to ditches in the north and west of the site, which were clearly located away from any settlement foci.

On the whole the ditches appear to define relatively large fields/paddocks although with other ditches potentially representing 'internal' sub-divisions. Only one clearly defined enclosure (Enclosure I, see Table 14) appears to belong to this early phase potentially situated in the corner of a larger field.

'Later' enclosures

The 'later' settlement layout is characterised by a series of sub-square and sub-rectangular enclosures, of which 14 (excluding the potentially early Enclosure I) were recorded (Figure 14). Of these, Enclosure XV appears likely to be late in the sequence given that it cut one of the 3rd-4th century graves in inhumation Cemetery B and could indeed be Anglo-Saxon (see below). The remainder (Enclosures II-XIV), given the pottery spot dates obtained, all appear to date broadly to the 2nd-4th centuries. The enclosures are detailed in Table 14.

The majority of the enclosures contained comparatively large assemblages of pottery and animal bone as well as finds such as oyster shell, fragments of iron objects/nails and tile (detailed in the specialist reports, below), suggesting they were located in close proximity to settlement and that the function of many may have been to define building plots or domestic compounds. This certainly appears to be the case with Enclosure VIII, which encloses aisled building Structure S7. Clear exceptions to this were Enclosures II and III – located in the north-west of the site evidently away from the main settlement zones – as well as Enclosures VII and Enclosure XV. These enclosures contained few finds, appear not to be settlement-related, and may have functioned as small paddocks.

Enclosure No.	Feature Nos.	Enclosure dimensions (LxW)	Ditch dimensions (Max. WxD)	No. of phases/ re-cuts	Pottery (Qty.)	Animal Bone (Qty.)	Other finds	Pottery spot dates	Notes
I	1887-88, 1890-91	21.20m x 19.20m	1.7m x 0.51m	1	5 (16g)	10 (18g)	Fe	2nd C.	
II	1739, 1933	24m x 18.55m	1.15m x 0.55m	2	7 (389g)	5 (103g)	Sh	2nd-3rd C.	Possible addiitonal phase represented by ditch F.1740?
III	1789, 2026	26.40m x 23.10m	2.3m x 0.6m	1	16 (437g)	48 (616g)	Fe, Sh	3rd-4th C.	Northern side of enclosure formed by E-W boundary ditch F.1969/79
IV	2031-32, 1879-80, 1919, 2057, 2193, 2210	23.60m x 22.45m	3.3m x 1.15m	3	69 (1094g)	291 (3953g)	Fe, Sh, BC, BS, Gl, WS, Tl	2nd-3rd C./ 3rd-4th C.	-
V	1668-69, 1702	32.83m x 18.60m	2.1m x 0.72m	2	52 (809g)	126 (2896g)	Sh, BC	2nd-3rd C./ 3rd-4th C.	Western boundary formed by boundary ditch F.1748 etc.
VI	1660, 1665-66, 1674, 1703, 2135	25.60m x 17.20m	1.4m x 0.36m	2	32 (706g)	123 (1513g)	Fe, Sh, Tl	3rd C./ 3rd-4th C.	-
VII	1560	21.30m x 21m	1.4m x 0.48m	1	9 (160g)	117 (92g)	Sh, Tl	2nd-3rd C.	Northern side of enclosure formed by Enclosure VI
VIII	1523, 1526, 1624, 1635, 1761	24.70m x 19.70m	1.2m x 0.45m	2	69 (1146g)	119 (1190g)	Fe, BS, Tl	2nd-3rd C./ 3rd C./ 2nd-4th C./ 3rd-4th C.	Encloses aisled building Structure 3
IX	1681-82, 1756-57, 1828-30, 1841, 1874	23.43m x 17.10m	2.25m x 0.9m	3-4	39 (440g)	128 (832g)	Fe, Sh, BC, BS, Gl, Tl	2nd C./ 2nd-3rd C./ 3rd-4th C.	-
X	2288	14.20m x 10m	1.9m x 0.68m	1	-	-	No finds	-	Only NW corner within excavation area
XI	1551, 2214, 2230, 2254	25.10m x 19.30m	1.8m x 0.44m	2-3	53 (872g)	74 (2334g)	Sh, BS, Tl	2nd C./ 3rd-4th C.	Only NE half (?) in excavation area
XII	2216, 2219	17.30m x 24m	2.2m x 0.8m	1-2	29 (756g)	247 (4657g)	Fe, Sh, Gl, Tl	2nd-3rd C./ 3rd-4th C.	Only NW corner within excavation area
XIII	1512, 1640	5.80m x 5.50m	1.42m x 0.53m	2	18 (622g)	28 (160g)	Sh, Tl	2nd C./ 2nd-3rd C.	-
XIV	1925, 1929	11.65m x 9.70m	0.7 x 0.29m	2	37 (808g)	33 (363g)		2nd C./3rd C./ 3rd-4th C.	-
XV	1807	21.35m x 15.65m	0.7m x 0.25m	1	4 (6g)	31 (59g)	Fe	2nd-3rd C.	Difficult to discern southern side amongst multiple ditched boundaries

Table 14: Roman Enclosures. (Key: Sh=Shell, Fe= Iron fragment, BC=Burnt Clay, BS=Burnt Stone, Gl=Glass, WS=Worked Stone, Tl=Tile)

The enclosures were all aligned on boundary ditches, which although based on the same NNE-SSW axis, appear to have replaced the 'early' system. As with the latter, multiple phases of enclosure are evident – for example, Enclosure VI clearly cut earlier Enclosure V – whilst many of the enclosure ditches were themselves re-cut on multiple occasions (see Table 14).

Finally, two enclosures (XIII and XIV) were of a slightly different character to the rest and on a much smaller scale. Firstly, Enclosure XIII comprised a small sub-square enclosure measuring just 5.8m by 5.5m. Two phases of enclosure ditch were recorded, one of which had an east facing entrance. In being far too small to be a paddock or building plot the enclosure presumably had some sort of specialist function although there is nothing within the artefactual or environmental assemblages to hint at what this may have been. Secondly, sub-oval Enclosure XIV, which measured 11.7m by 9.7m was located centrally within the excavation area. The 'enclosure' was in fact open-sided to the east and comprised two separate gullies, its function is also unknown although it could potentially have functioned as a drainage gully for a structure or animal pen

Structures

Three structures along with a further three possible structures have been identified within the 1st-4th century settlement (Figure 15). Of these, two were represented by roundhouse gullies (Structures S5 and S6), one by the post-pads of an aisled building (Structure S7), one by a possible construction slot/gully (Structure S8) and two by apparent stone foundation slots within earlier ditches (Structure S9 and S10).

Structure S5 (Figure 16)

Structure S5 comprised a pennanular roundhouse gully measuring 10.4m in diameter. Two phases of roundhouse gully were recorded (F.1787 and F.1790), with the feature having been re-cut on at least one occasion. The gullies measured between 0.35m and 1m in width by a maximum of 0.35m deep and yielded a small finds assemblage comprising 27 sherds of 2nd-3rd century pottery and small quantities of animal bone, shell and baked/burnt clay. No internal postholes or clearly associated features were recorded.

Structure S6

Located some 4m to the south, a roundhouse gully (Structure S6) appears likely to represent an ancillary building to Structure S5. Also pennanular in form, it was smaller (diameter: 8.03 m) and was defined by a single gully (F.2012/2013) 0.2-0.67m wide by a maximum of 0.3m deep. No finds were recovered from the roundhouse gully, which was cut by a number of later ditches including that of Enclosure III.

Structure S7 (Figure 16)

Located on the interior of Enclosure VIII and probably contemporary with its earlier phase, Structure S7 comprised six postholes/post pads (Fs.1601, 1602, 1605, 1606, 1615 and 1619) along with a possible seventh disturbed posthole (F.1604). The postholes (Width: 0.5-0.81m, Depth: 0.09-0.22m) were generally packed with small stones or flint nodules evidently to provide a solid base for relatively substantial posts. The postholes formed a rectangular arrangement that measured 11.5 m by 7.5 m although assuming that the postholes represent aisle posts, the dimensions of the building would have been somewhat larger. Finds were limited to two sherds of 2nd century pottery, which do not closely date the building and are potentially residual.

Structure 8

In the south of the excavation area, a shallow gully (width: 0.5-0.81m, depth: 0.09-0.22m) marked the possible foundation/beam slot of a small sub-square building (F.1594; Structure S8). The structure measured 7.6m in length, whilst its southern side was truncated by ditch F.2227; nevertheless its width can be estimated at *c.*4 m. At its eastern end a gully terminus, within which was a posthole (F.2218), appeared to represent one side of an entrance (the other side having been truncated by ditch F.2227). Seven sherds of 2nd-3rd century pottery were recovered from gully F.1594, with one further 2nd century sherd from posthole F.2218.

Structure S9

Just to the east of Structure S8, a narrow gully/trench forming a right angle was cut into two earlier ditches at the northern corner of Enclosure XI. The trench (F.1608) was 0.7-0.8m wide by a maximum of 0.34m deep and was packed with medium-sized unworked cobbles/stones. The feature was recorded for an overall length of 3.5m and appears to have functioned as part of the foundation for a small structure. It would appear that only the SW and NW walls the structure required foundations of this sort as they were situated on the 'soft' ground of an old ditch; the NE and SE walls – no trace of which remained – appear likely to have been constructed, probably on sill beams, directly on the firmer undisturbed ground. No finds were recovered from the foundation trench although it would appear to have been relatively late in the Roman occupation sequence given that it cut two enclosure ditches.

Structure S10

A second stone-packed foundation (F.1848) trench was recorded cut in to ditch F.1541 some 46.35 m to the north-east of Structure S9. Once again it appears that only the northern wall foundation was constructed in such a way with the structure's other walls (of which there was no trace) presumably built directly upon the undisturbed ground to the south. No finds were recovered from the gully/trench although given its construction method it may well be broadly contemporary with Structure 5.

In addition to the more clearly defined structures, four groups of pits/postholes potentially represented the locations of further buildings (see Figure 15). However, no clear form was discernible within the posthole arrangements and they have therefore been recorded as Feature Groups (FGs) marking possible building locations.

FG 1

A cluster of five postholes (Fs.1585-88 and F.1591), four pits **(**Fs.1589-90, F.1593 and F.1897) and an elongated oval pit/gully (F.1592) were located in the west of the excavation area adjacent to Enclosure III. The pits/postholes contained only six sherds of 2nd century pottery between them although pit F.1589 did contain a roughly-shaped clunch block and two large cobbles, which probably represent building materials from a nearby structure. Approximately 5m to the south-east a further three small pits/postholes were recorded one of which yielded ten sherds of 3rd-4th century pottery along with a few small fragments of animal bone and oyster shell. It is not clear if this group is associated with the main posthole group although if it is then the pottery from the latter must be residual and the feature group comparatively late in the sequence.

FG 2

Six postholes (Fs.1778, 1852 and Fs.2006-9) and a cluster of three inter-cutting pits (Fs. 1803-5) were located just to the east of Enclosure II. Although no overall form was discernible three postholes formed a relatively convincing corner of a possible structure. Four sherds of 2nd-3rd century pottery were recovered from the postholes along with a few small fragments of animal bone and a fragment of iron; the pits produced a slightly larger finds assemblage comprising 28 sherds of 2nd-3rd century pottery along with 180g of animal bone. A further seven pits/postholes were located within a *c.*12m radius of FG2 although it is unclear whether they may have been related.

FG 3

A group of seven postholes (Fs.1515-1520 and F.1628) and two pits (Fs. 1623 and F.1513/14) were located immediately to the south-east of Enclosure XIII. With the exception of pit F.1513/14, from which three large fragments of millstone – all probably from the same millstone – were recovered, none of the features produced any finds. The possible structure is, however, located just to the south of pit F.1613 (see below), which yielded the biggest single assemblage of pottery from the site.

FG 4

A loose cluster of nine pits/postholes (Fs.1527-34 and F.1561) was located on the southern edge of the excavation area to the south of Enclosure IX. The features produced only nine sherds of pottery dating from the 1st-2nd centuries AD – as well as a single sherd of presumably residual Iron Age pottery – alongside a few fragments of animal bone and oyster shell.

Wells

A total of 12 wells or probable pit-wells were recorded within the excavation area (detailed in Table 15, below). Well type varied from shaft to pit-like features – the latter being more tentatively identified as wells *per se* – although all were one metre or greater in depth and were well-defined steep-sided features. All of the wells that can be securely dated appear to date to the 2nd-4th century, although one (F.2290) could potentially be slightly earlier.

Feature No.	Feature type	Length (m)	Width/ Diameter (m)	Depth (m)	Pottery spot date	Finds
1636	Pit-well	-	1.86	1.15	-	A. bone (104g); Waterlogged wood fragments (unworked)
1649	Pit-well	-	2.8	1.18	2nd-4th C.	A. Bone (1320g); Pottery (590g); Brick/tile x3; Fe object x1; Oyster shell x1
1758	Well (shaft)	-	4.25	> 2**	2nd-3rd C.	A. Bone (791g); Pottery (18g) Brick/tile x3; Wooden pole ladder (frags.)
1767	Well (shaft)	1.9	1.9	>1**	-	A. Bone (334g); Oyster shell x1
1894	Well (shaft)	1.45	1.45	1.35*	2nd-3rd C.	A. Bone (526g); Pottery (88g); Oyster shell x1; Brick/tile x1
1907	Well (shaft)	1.60	0.6	1.57*	-	-
2080	Pit-well	2.6	2.6	1	-	A. Bone (899g)
2242	Pit-well	-	2.56	1.35	2nd-3rd C.	A. Bone (313g); Pottery (173g); Millstone frag x1
2290	Pit-well	1	1.7	1.55	1st-2nd C.	A. Bone (251g); Pottery (425g)
2305	Pit/well?	1.9	1	1.9	2nd C.	A. Bone (718g); Pottery (70g)
2306	Pit/well?	1.45	0.75	1.15	-	A. Bone (268g)
2311	Pit-well	1.2	1.2	1.5	2nd C.	A. Bone (344g); Pottery (57g)

Table 15: Roman wells (*=augered depth, **= not bottomed due to unstable/saturated deposits, depth and resulting health and safety concerns).

The most convincing well-shafts were F. 1758, F.1767, F.1894 and F.1907. All were comparatively deep features and despite the use of a machine to reduce the ground level by 1m in a large area around the features in order to facilitate further/deeper excavation, none of the features could be 'bottomed'; such was the instability of the

sediments and the rate of influx of groundwater that safe excavation was impossible. It was, however, possible to determine the depth of F.1894 and F.1907 using a hand auger. Well F.1758 was without doubt the most significant of the wells given the presence of well-preserved organic fills (which were sampled for plant remains and pollen, see Boreham and Fryer, below) and the waterlogged remains of a wooden pole ladder (see Robinson, below and Figure 17). The form of the well comprised a wide 'step' or ledge 4.25m across leading to a lower shaft 1.05m in diameter. The ladder appeared to be *in situ* within the lower fills of the well-shaft but unfortunately due to health and safety concerns could only be partially recovered.

The location of the wells is shown in Figure 15; a clear concentration of nine wells is present in the south-east of the excavation area in an area of (probably later) quarrying. It is worth noting that in this area it has been difficult to differentiate between possible pit-wells and quarry pits and some of the deeper pits may have functioned as wells but have not yet been identified as such. Three of the wells (F.2242, F.2080 and F.1649) occurred outside this concentration; in the south of the excavation area, F.1649 would appear to be associated with Enclosure XI while F.2242 could be associated with the small Enclosure XIV. Undated well F.2080 sits in isolation further to the west and seems likely to have been more agricultural than settlement related.

Pits

A total of 245 pits (as well as a further 23 pit/postholes not included in the above Structures/Feature Groups) were recorded within the excavation area. Few produced finds assemblages of any size and many seem likely to be quarry pits or 'cuts' within them especially those within the main 'quarrying zone' in the east of the excavation area (see below). However, a small number of pits contained significant finds assemblages and appear more likely to relate to domestic/settlement activity (see Figure 14).

Pit F.1613, which produced by far the largest pottery assemblage of any single feature on the site, and pit F.1504, which produced the second largest assemblage, were situated adjacent to each other to the south-east of Enclosure VIII:

F.1613 (Figure 18)

A sub-rectangular 'tank-like' feature, F.1613 measured 3.4m by 2m by 0.96m deep. It contained a sequence of nine fills, including burnt deposits containing relatively high quantities of burnt cereal remains (see Fryer, below). The pit yielded some 360 sherds of 2nd-3rd century pottery, including Samian ware and mortaria, large assemblages of animal bone and oyster shell, two fragments of glass and iron finds including four knife blades. In addition, a number of rough clunch blocks were noted within the fill, which could represent discarded building material.

F.1504

Sub-square pit F.1504 measured 6.10 m by 2.62m by 0.32m deep. It contained two fills, which yielded 186 sherds of pottery dating from the late 1st- 2nd century AD and including sherds of Samian ware and amphora. A comparatively large assemblage of oyster shell was also recovered along with a smaller assemblage of animal bone.

A second 'tank-like' pit (F.1914) was recorded on the interior of Enclosure IV.

F.1914

Measuring 5m by 1.7m by 1.6m in depth, F.1914 was a deep elongated sub-oval pit, which contained a significant finds assemblage and could potentially be contemporary with the use of Enclosure IV. It contained a sequence of ten fills, which yielded 36 sherds of 3rd-4th century pottery and 5kg of animal bone, largely found within the basal fills. Small quantities of shell, tile and fragments of ironwork were also recovered.

Situated either side of Enclosure XI's northern ditch and potentially related to the enclosure, pits F.1582 and F.1698 also produced relatively large quantities of pottery along with other 'domestic' assemblages:

F.1582
A large sub-oval pit measuring 3.54m in diameter by 0.65m deep, pit contained a single fill, which yielded 79 sherds of late 1st-3rd century pottery as well as quantities of animal bone, oyster shell, two iron nails and a large fragment of quernstone.

F.1698
Pit F.1698 was part of a cluster of inter-cutting pits in the north-western corner of Enclosure XI, which was truncated by well F.1649. In its truncated form the pit measured 0.8m across by 0.27m deep. Finds recovered comprised 70 sherds of 2nd-3rd century pottery, oyster shell and animal bone.

Somewhat removed from the main settlement area in the north of the site – and therefore perhaps less likely to be directly settlement-related – pits F.1966 and F.1986 nevertheless produced pottery assemblages of note:

F.1966
Sub-oval pit F.1966 measured 1.7m by 1.35m by 0.5m deep and truncated ditch F.1923. It contained 2 fills, which yielded 72 sherds of 2nd-3rd century pottery – many from the same vessel – as well as a small assemblage of animal bone.

F.1986
Also truncating an earlier ditched boundary (F.1701), pit F.1986 was sub-oval and measured 1.4m across by 0.62m deep. It contained two fills, from which 40 sherds of 3rd-4th century pottery were recovered suggesting this pit is potentially relatively late in the Roman settlement sequence. Other finds comprised a small assemblage of animal bone and a single oyster shell fragment.

Quarry pits

As previously mentioned, many of the pits recorded on the site appear likely to be quarry pits excavated in order to extract the underlying clay/marl deposits, which could have been used for a variety of purposes including as building material (eg. daub/cob) and perhaps, given the known presence of pottery kilns in the area, even for pottery production (see eg. Evans *et al.* 2008).

An area of intense quarrying was located in the east of the excavation area between Enclosures IV and VIII. Here over 50 pits covering an area of some 27.5 square metres appear to be the result of quarrying. The majority of the pits were inter-cutting and each one was recorded as an individual 'feature', but in reality it seems likely that each pit represents an episode of digging within a larger quarry; in this sense each inter-cutting pit cluster can be interpreted as a quarry.

The quarry pits (as individual features) on the whole were sub-oval features, which measured 0.60-11.30m wide by 0.25m - 2m deep. Few contained finds assemblages of note although there are were a few exceptions including pit F.1768, which produced 53 sherds of pottery – largely dating to the 3rd-4th centuries – and 1.3kg of animal bone; distinct charcoal-rich layers were also noted within its fills. Two especially large quarries (F.1915 and F.2074) of which only limited excavation was possible due to unstable sediments and flooding apparently operated on a larger scale to the majority of the quarry pits. F.1915 was also noticeable for its large finds assemblage suggesting it had been used to dump domestic refuse as well as potential small-scale industrial waste comprising slag and cullet/furnace waste:

F.1915
Also including cuts F.1792 and F.1824, quarry F.1915 measured some 19.30m by 11.30m in its entirety and was 1.1m at its deepest point. Some 147 sherds of pottery ranging in date from the 2nd-4th centuries were recovered from the quarry along with 2.9kg of animal bone, 75 fragments of shell and a small quantity of slag. In addition a small collection of cullet – fragments of glass and a fragment of molten furnace waste – suggest possible glass working in the vicinity (see Herring, below).

F.2074
Immediately to the north-west of F.1915 measured 8.77m by 7.50m with a truncated depth of 0.25m (this area of site having been machine-reduced in order to better define archaeological features). Eleven sherds of 2nd-3rd century pottery and 574g of animal bone were recovered from the feature along with small quantities of oyster shell and tile.

Cemetery A

Cemetery A contained three cremations held within pots (see Dodwell, below; Figure 19) as well as three relatively intact pottery vessels containing no cremated remains; it was located close to the western edge of the excavation area, indeed two of the vessels were recorded within the excavation area section and as such there is a strong likelihood that further cremations lie to the west. The cremations (F.2271, F.2272 and F.2298) along with the 'empty' vessels – two of which were placed immediately adjacent to each other (F.2273) – were recorded within a subsoil layer, which had survived the truncation and subsequent landscaping of the site in the 1960s. No cuts were observed although it must be assumed that the cremations were placed into shallow pits. The pots and the cremations within were all crushed/damaged, presumably at least in part during the 1960s, whilst further damage was caused to F.2272 and F.2273 during machining (an unavoidable consequence of the features being located within a subsoil layer above the level of the archaeological strip).

F.2271
A cremation held in a 2nd century pottery vessel, within which were two further small ancillary vessels (see Figure 19). The cremated human remains were that of an adult; sexing was not possible.

F.2272
The cremated remain of an unsexed adult held within a 2nd century pottery vessel.

F.2273
An urn excavated from within the excavation area section (see Figure 19), with a small ancillary vessel placed immediately to the south. No cremated remains were found within either vessel.

F.2298
The cremated remains of a young adult held within a 2nd century urn. A small ancillary cup was recovered from the subsoil just to the south of F.2298.

Cemetery B

Cemetery B comprised five inhumations (Fs.1752, 1753, 1806, 2018 and F.2255) grouped together in the far eastern part of the site; four were adjacent and parallel to a multiply re-cut ditched boundary, with the fifth at a right angle to the boundary (Figures 20 and 21). All were in a supine, extended position; four were mature adults (two male and two female), whilst the fifth was a young female (see Dodwell, below).

Numerous iron nails/fittings were recovered from around the skeletons within two of the graves (F.1753 and F.2255) providing evidence that they were held within coffins, whilst hobnails were founds around the feet of skeletons F.1753 and F.2255 (see Appleby, below). Grave goods were found with two of the burials; Skeleton F.1752 had a small pot (spot dated to the 4th century) placed between the legs whilst burial F.2255 contained a small indented beaker (4th century) and a glass unguent bottle within the coffin. The unguent bottle (see Herring, below and Figure 21) is a rare find and it is remarkable that such a delicate object survived.

Other features

Cultivation trenches

In the south-west corner a series of cultivation trenches or 'planting beds' were recorded within a field defined to the north by ditch F.2275/76. The features (Fs.2323-24, 2318, 2320-21, 2274 and F.2277) were a maximum of 0.89m wide by 0.32m deep and were aligned NNE-SSW. Such features occurred extensively on the new Papworth Hospital site to the south (Phillips *pers comm.*) and are all apparently part of the same cultivation system.

Metalled/cobbled surfaces

Very few cobbled or metalled surfaces survived within the excavation area, no doubt a result, not only of truncation through ploughing/agriculture, but also of truncation resulting from the 'dumping' activity associated with the construction of Addenbrooke's buildings in the 1960s. Remnants of cobbled/metalled surfaces were, however, recorded in two areas. Firstly, one small irregular spread of gravel was recorded within Enclosure VIII and potentially represented a patch of surviving metalled surface. Secondly, layers of rounded cobbles in the upper fills of pits F.2305/2390 and pit F.1837, are relatively convincing evidence of part of a formerly more extensive cobbled surface having sunk into the top of the features and therefore, being preserved. Alternatively, they may represent an attempt to consolidate the 'soft ground' of the in-filled features.

Culvert F.2086

In the east of the excavation area a clunch-lined culvert (F.2086) was recorded amongst a series of inter-cutting WNW-ESE aligned boundary/drainage ditches (see Figure 13). The culvert was recorded in only one intervention and was not recorded in

further interventions either to the east or west, suggesting it was of limited length. The culvert measured 0.75m wide by 0.26m deep and was lined with rough clunch blocks an average of 0.1m x 0.2m in size and contained no finds. Such clunch/stone-lined features are not common within a rural Roman context and the feature is an interesting example of a formal drainage feature (as opposed to the more usual drainage ditches).

The Roman coins

A total of 79 Roman coins dating from the second half of the 1st century AD through to the late 4th century AD were recovered from the North Plot (see Marsden, below). Most of the coins were recovered from the metal detecting survey of the site following removal of overburden deposits, although a small number were found during excavation of features. As such the large majority of the coins were recovered from the upper most fills of ditches and pits. A distribution plot of the coins is shown in Figure 22.

A large number of the coins date to the 4th century AD and were found clustered around Enclosure IV. This is significant – the coin assemblage offering more chronological definition than the broad date spans of the pottery assemblages – and suggests that occupation of the site, and certainly the use of Enclosure IV, continued well into the 4th century AD.

Late Roman/Anglo-Saxon

A final phase of activity certainly dates to no earlier than the later 4th century but could potentially be Early or Middle Anglo-Saxon, especially considering that features dating to this period (5th-9th century) should be expected given the levels of activity recorded in the surrounding area (see Evans *et al.* 2009 and Collins 2009). The major feature of this phase is a sinuous boundary, comprising two ditch cuts F.1853 and F.1871, running approximately north to south down the eastern side of the excavation area. The feature is stratigraphically late and cuts a large number of Roman features. An abraded pottery sherd provisionally identified as Iron Age as well as a small quantity of 2nd century pottery was recovered from the ditches although these seem likely to be residual (although the possibility that the putative Iron Age sherd is Saxon needs to be ruled out). It is also worth considering that Enclosure XV is in fact Anglo-Saxon in date, given that its ditch cuts a 4th century grave in Cemetery B, which was evidently no longer in use and potentially a burial ground that was long forgotten by the time the enclosure was dug.

The only other evidence of Anglo-Saxon activity is an Alfred of Wessex, debased silver penny recovered from the top of an in-filled Roman ditch (see Allen, below), which is in itself a rare find.

NORTH PLOT: DISCUSSION

Prehistoric

That no features recorded within the North Plot excavation area were convincingly pre-Roman in origin is in many ways surprising given the proximity of significant Bronze Age and Iron Age remains recorded in the surrounding area. The absence of a Middle Bronze Age field system would be particularly surprising and consequently it is worth considering whether any undated 'early' ditches could represent prehistoric boundaries. The only candidates for this are F.2001/1750 and F.2035/1850; two parallel ditches situated *c.* 25m apart and occupying a slightly different WNW-ESE alignment to the main Roman ditch system. That said, the fact that a later well-dated Roman boundary is aligned on F.2035/1850, suggests continuity of this boundary and that although 'early' and potentially pre-Roman it is perhaps more likely to date to the Late Iron Age/Conquest period.

Aside from these possibly 'early' features the only evidence of prehistoric activity is sherds of pottery provisionally identified as Middle Iron Age, which are almost certainly residual and worked flint, which reflects 'background levels' of activity in the same vein as the residual assemblages recovered from the south site. Having said that, the context of the 'Middle Iron Age' sherds should be re-appraised as part of the site's full analysis in order to more fully interrogate the current assumption that Middle Bronze Age/prehistoric features are absent from the North Plot.

Roman

Settlement chronology and development

Having detailed the excavation results in gazetteer format, it remains to attempt provisional phasing of the North Plot's Roman settlement. As shown in Figures 23 and 24 aside from the possible 'pre-Roman' ditches described above, four broad phases of activity have thus far been identified. Firmly attributing individual features and their finds assemblages to these phases will be attempted as part of the full analysis.

Phase 1 (Mid-late 1st century/Conquest period)
The earliest phase of Roman activity currently identified appears to be associated with the Conquest period settlement located immediately to the north of the North Plot at the Hutchison Site (Evans *et al.* 2008) and comprises a trackway curving from the north to the south-west, which has been tentatively assigned to this phase based on alignment and stratigraphic relationships. Given the proximity of the Hutchison site it is surprising that further remains dating to this period were not encountered and although a distinct lack of pottery from this period in the overall site assemblage appears to confirm an overall lack of Conquest period activity, it is possible that some of the undated/poorly dated ditches currently assigned to Phase 2 may have earlier origins.

Phase 2 (Late 1st-2nd century AD)
Late 1st-2nd century pottery is much more common within the overall pottery assemblage and it is clear that more significant levels of activity occurred at the site during this period. The grid-like 'early' system of fields and paddocks has been attributed to this phase and although evidently comprising multiple sub-phases does form a cohesive pattern of land division. Interestingly, however, there are no obvious trackways visible within the phase plan, and certainly none that represent enduring routeways (all possibilities being cut by later Phase 2 features). Given the rates of finds recovery from the majority of potential Phase 2 features – largely single phase ditches – it seems that the site was largely occupied by fields and paddocks (including Enclosure I) during this period although there are a number of clearly settlement-related features. Most obvious are the two roundhouses (Structures S5 and S6), which yielded 2nd-3rd century pottery; both occur relatively early in the stratigraphic sequence and must belong to this phase. In addition, pit F.1504, produced the second largest pottery assemblage of any individual feature on the North Plot as well as indicators of domestic activity such as oyster shells, whilst well F.1758, which was cut by Phase 3 Enclosure VIII, could also potentially relate to this earlier settlement. Further indirect evidence of settlement is provided by Cemetery B (the 2nd century cremation cemetery), which clearly served a local community. As such there is little doubt that settlement was occurring on or near the site although its exact location – aside from the two roundhouses – and character is currently more difficult to determine.

Phase 3 (2nd-4th century AD)
The majority of the North Plot's enclosures and most of its settlement-related features have provisionally been attributed to Phase 3. During this period the grid-like Phase 2 system of fields and paddocks was replaced by a an agglomeration of enclosures attached to a series of major boundary ditches, some of which appear to have originated in Phase 2 and some of which were 'new'. On the whole the site layout appears to lack formality or any over-riding structure and although the Phase 2 alignment is adhered to, in many ways the Phase 3 enclosures show no regard for the boundaries of the earlier system. The majority of the enclosures and many of the boundary ditches show evidence of multiple re-cuts and it is clear that both saw frequent redefinition and alteration. As with Phase 2 there are no obvious trackways within the settlement and certainly none that were not sooner or later 'cut-off' by one of the apparently frequent changes to the site layout.

Phase 4 (Late Roman/Anglo-Saxon)
A series of boundary ditches and a possible enclosure (XV) represent a 'terminal' phase of Late Roman, or potentially Anglos-Saxon activity, as discussed further below.

The phases at this stage are unavoidably rather broad and phasing is largely based on the split between the early 'grid-like' system and the later sequence of enclosures. It may, however, be possible to divide Phases 2 and 3 into sub-phases during the full analysis phase of work. The broad date ranges for many of the locally made pottery wares do not help in this instance, however, more closely dateable forms, particularly the samian sherds and the vessels from Cemeteries A and B, are present within the assemblage. Likewise, the Roman coin assemblage offers a more nuanced dating tool. For example, the frequency of 4th century coins (as discussed by Marsden, below) together with the pots from Cemetery B suggests there was relatively significant late Roman activity at the site and that further features relating specifically to this period can be identified.

In terms of the settlement's extent, to the north and west there appears to have been little further settlement (as recorded at the Hutchison and LMB sites; Evans *et al* 2008; Collins 2009), and the bounds of the settlement appear to be within the North Plot excavation area. To the east there appears every chance that settlement remains continue beneath Robinson Way and potentially the hospital, whilst to the south the extent of the settlement remains has been determined by the Oxford East excavations at the new Papworth site, the results of which are forthcoming.

Site function and economy

A provisional distribution plot of the pottery assemblage as a whole (Figure 25) indicates that although deposition was widespread it occurred in greater numbers in the south-eastern quarter of the North Plot; the distribution of Samian ware specifically shows a 'high' in the north-east as well as in the south-south-east of the site. This suggests that throughout most of its life, domestic activity was concentrated in the south/south-east of the site, with the north/north-western areas probably occupied by fields and paddocks; the one exception to this pattern appears to be the two Phase 2 roundhouses (Structures S5 and S6). The artefactual assemblages together with the faunal and plant remains suggest that the site operated as a fairly typical rural Roman settlement from the late 1st century through to the 4th century. Pottery was largely locally produced, with imported wares in limited numbers, and whilst there are some finer items within it, the metalwork assemblage – including knives, cleavers and an axe – largely reflects a range of domestic activities. Likewise the range of rotary querns suggest relatively small scale processing of crops although having said that, the millstones, together with artefacts such as lead weights may indicate a more sophisticated local economy in the later period. Craft activities appear to have included relatively minor metalworking; the site probably had a small forge while the presence of cullet on site suggests the collection of glass for recycling and potentially working.

Within the faunal record, cattle was most prevalent, again typical for the Roman period and the plant remains suggest that although cereals were being brought to the site for storage/processing, pastoralism formed the major part of the local economy. Having said that, the extensive linear cultivation features/planting beds recorded in the south of the North Plot and across the new Papworth Hospital site (Oxford East forthcoming) do suggest that arable agriculture/horticulture played an important part. The exact function of such planting beds is not known although similar features at the North-West Cambridge site dating to the late 1st/early 2nd century have been interpreted as possibly being used for growing vines or asparagus (Cessford and Evans 2014). Interestingly, horse also made up a comparatively high proportion of the faunal assemblage – something which was also a feature of the assemblages collected locally from Roman sites at Babraham and Earith (see Rajkovača, below).

Finally, with regard to the Roman buildings, Structure 7 was clearly a relatively substantial building and potentially functioned as a barn or similar. On the whole, however, structural remains were scarce – many potentially having been of sill beam construction and leaving no trace – as was the occurrence of building materials within the finds assemblage. Of the latter, small quantities of *tegulae* and *imbrices* may derive from buildings at the site but along with the *pilae* and *tubulae* – potentially parts of a hypocaust system – are probably more likely to derive from an off-site building, perhaps even the scheduled Shelford Villa site at Shelford (SAM CAM57) *c.*1km to the south of the site.

The Roman landscape

The AstraZeneca North Plot was clearly settled for much if not all of the period spanning the late 1st-4th century. No clear evidence of earlier activity was recorded,

however, which is surprising and clearly the Late Iron Age/Conquest period settlement recorded at the Hutchison Site did not extend on to the North Plot. Conversely, the Hutchison Site had no 'late' features as to suggest 2nd-4th century activity and it seems that there was only overlap in the late 1st- early 2nd century when activity spread across both sites. Likewise, the Late Iron Age/Conquest period settlement at the Boulevard/Energy Centre to the south of the North Plot (Newman *et al.* 2010; Collins 2014) appears to have been a discrete settlement both spatially and chronologically. The reasons for these slight shifts in settlement location are presently unclear but whatever the reason it is clear that the Addenbrookes environs was a focus for settlement for over four centuries.

The settlement lies within an extensively settled Roman landscape with settlement sites occurring at frequent intervals, estimated by Evans *et al.* (2008) to be as little as every 300-500m. Consequently, as stated by Evans *et al* (*ibid.*), the landscape must be considered in terms of settlement networks rather than individual settlements. At Clay Farm less than 1km to the west of the North Plot, further Conquest/Early Roman settlement has been recorded (Phillips and Mortimer 2013) and on current evidence it appears that the 1st and 2nd centuries AD were something of a high point in terms of occupation within the landscape, something which could potentially be associated with the establishment of the putative villa site at Shelford. Later Roman settlements in the vicinity, however, appear to be scarcer with no major recorded sites that could be contemporaries with the North Plot's Phase 3 settlement. Slightly further afield the 4th century defences of Roman Cambridge have been recorded some *c.*3.5km to the north-west (Evans and Ten Harkel 2010) while significant later Roman settlement occurred at Babraham *c.* 6km to the south-east (eg. Collins 2012), however, within the immediate Addenbrooke's environs, at present the North Plot's 2nd-4th century settlement stands somewhat in isolation.

In terms of the wider landscape and the 'settlement network' it is also important to consider Roman roads and routeways. The exact route of the major *Via Devana* through the area is not currently known (see Evans *et al.* 2008), however, a relatively significant route way is recorded immediately north of the North Plot on the southern edge of the Hutchison Site (*ibid.)*. The location of the North Plot settlement on a relatively major routeway would explain certain aspects of the finds assemblage including the so-called 'military' connections suggested by some of the early coins (see Marsden, below) and the faunal assemblage (beef production and possible supply; Rajkovača, below). Given that there is little direct evidence that the site was itself 'military', a role as a roadside settlement or similar would be a reasonable interpretation.

Post-Roman activity

Whilst the attribution of a series of boundaries and possibly one enclosure (XV) to a potentially Anglo-Saxon phase is somewhat tentative, Anglo-Saxon features recorded in the wider area suggest activity dating to this period is likely within the North Plot excavation area. Particularly notable is a sinuous boundary ditch of probable Anglo-Saxon date recorded at the LMB site (Collins 2009), which appears to mirror the North Plot's sinuous N-S boundary. If contemporary and indeed Anglo-Saxon the

features appear to represent a field system to complement the settlement remains at the LMB site and Hutchison sites (*ibid.*; Evans *et al.* 2008).

ASSESSMENT OF POTENTIAL

There is a clear difference in character and date between the two AstraZeneca NCS sites consequently it is better to consider their potential separately.

AstraZeneca NCS South Plot

Artefactual and ecofactual analysis

Substantial prehistoric finds assemblages together with a small number of Roman finds were recovered from the South Plot (Table 16).

	Quantity	Weight (g)
Flint	159	11792
Prehistoric pottery	1419	13542
Roman pottery	8	28
Worked stone	3	11230
Burnt stone	-	453684
Burnt/worked clay	-	6678
Metalwork	17	132
Worked bone	4	13
Human bone	9	1546
Animal bone	13513	140818
Shell	2	100

Table 16: South Plot finds assemblage breakdown

Detailed assessment and recommendations for further work are included in the individual Specialist Studies. Below are summary statements for each:

Flint
The flint assemblage is of limited potential although more detailed analysis will allow for the earlier and later components to be separated. In many ways the interest of the assemblage lies in the lack of later prehistoric flint working compared with the probably contemporary site(s) at Clay Farm.

Prehistoric Pottery
The earlier prehistoric/Neolithic pottery is a small assemblage and although a useful addition to the local archaeological record is of limited potential. However, the Middle Bronze Age material comprises a large and important Deverel Rimbury assemblage. Its importance is increased by the potential for comparison with contemporary local assemblages from Clay Farm as well as the LMB site whilst the presence of Ardleigh Ware apparently reflects the site's geographical location close to the Essex/Suffolk border. Full analysis of the assemblage should be undertaken including examination of refitting potential and fragmentation analysis. Sherds will also be selected for illustration. In addition sherds should be examined for potential residues suitable for radiocarbon dating and submitted if appropriate. The Iron Age

pottery assemblage is also important and full analysis should be undertaken including comparison with the Clay Farm pottery and other local assemblages.

Roman Pottery
The small assemblage is of little value in itself other than as a dating tool, nevertheless it will be incorporated into the analysis of the North Plot pottery.

Worked Stone
The worked stone assemblage is much smaller than would be expected from a site of this type and, in comprising only three items – a hammerstone, a saddlequern and an amber bead – does not warrant further analysis. The amber bead does provide an interesting parallel with Clay Farm, however, and the hammerstone should be photographed and possibly drawn for publication.

Burnt Stone
The assemblage has been fully recorded, quantified and weighed and in itself does not warrant any further work. The distribution and density of burnt stone may, however, provide useful information regarding the character and specific location of settlement within Enclosures A-C particularly and burnt stone density plots will be produced.

Burnt/Worked Clay
The assemblage has been fully recorded and requires little further work; distribution/density plots of burnt clay/daub will be produced although with the exception of F.1170, quantities seem likely to be too small for meaningful patterns to emerge. The triangular loomweight is a good example of its type and should be drawn and photographed for publication.

Metalwork
Although part of a small assemblage the Bronze Age items are significant finds, which are rarely recovered from settlement features, furthermore the secure archaeological context of the finds increases their importance. Selected items should be photographed and illustrated whilst the items should be compared with other local assemblages, particularly Clay Farm.

Worked Bone
As with the metalwork although a small assemblage, the worked bone items are relatively rare finds and are potentially a further indicator of the kind of craft activities undertaken at the site. Thus far the four items have only been measured and described, following on from this they will be submitted to the relevant specialist for full recording and analysis.

Human Bone
The articulated burial has the potential to contribute to our understanding of burial practices within later prehistory and should be radiocarbon dated. Likewise the disarticulated bone has the potential to further our understanding of the treatment of human remains, particularly within settlement contexts; further analysis in order to try and understand their depositional histories should be undertaken.

Shell
The two fragments of marine shell are likely to be residual and are of no archaeological value.

Animal bone
The faunal assemblage's size alone makes it significant and worthy of full analysis, whilst the potential for comparison with other local assemblages (the LMB site and Clay Farm) increases its importance. The material has great potential in furthering our understanding of the later prehistoric environment and land use as well as changing economic and cultural preferences through time. Further analysis will include kill-off profiles for the three main livestock species as well as in-depth study of butchery and depositional practices.

In summary, the prehistoric pottery, metalwork, worked bone, human bone and animal bone warrant full analysis and reporting. For the remaining artefact groups, summary reports will be produced for the publication.

Environmental analysis

A total of 99 bulk environmental samples were collected, 42 of which have been submitted for assessment (see Fryer, below). In addition samples were taken for pollen analysis, molluscs and soil micromorphology. Whilst none of the plant remains assemblages themselves are of sufficient size to warrant further analysis or quantification, they have the potential to contribute to the broader palaeoenvironmental analysis outlined by Allen below (Section 10). Together the palaeaoenvironmental and geoarchaeological samples have the potential to further our understanding of later prehistoric environment and landuse – specifically that of Enclosure A-C – as well as to interrogate the character of the Middle Bronze Age midden deposits (including whether or not they are *in situ*) and settlement at the site.

Radiocarbon dating

Given that none of the artefact groups provide any opportunities for refining the chronology of the site (beyond broad period-based phasing), a radiocarbon dating programme will be an important part of the site's full analysis. The recorded stratigraphy of the multi-phase Middle Bronze Age Enclosures A-C also suggests that Bayesian modelling of sample results may be possible potentially providing further insight into the chronology and duration of the site. Animal bone (particularly articulated animal skeletons), human bone and pottery residues all provide possible dating material whilst carefully selected charred plant remains should also provide suitable samples.

Statement of potential

The Middle Bronze Age enclosures and settlement remains at the South Plot represent an important archaeological site, which when considered alongside other contemporary sites in the area (eg. Clay Farm and the LMB Site) form part of an

important prehistoric landscape. The site has great potential in furthering our understanding of Bronze Age settlement, land use and environment as well as the social dynamics at work within the wider landscape. The development of the site/landscape from field system to enclosures and the development, function and status of Enclosures A-C are of particular importance. Of the individual artefact/ecofact assemblages the Middle Bronze Age pottery and animal bone are substantial assemblages for the period and in themselves are significant in terms of prehistoric pottery and animal bone studies.

The potential and significance of the Iron Age archaeology of the South Plot cannot be measured on the same scale as the Middle Bronze Age remains; Iron Age settlement evidence is much more widespread in the region and beyond while the finds assemblages recovered can be considered typical. Nevertheless, given the scale of excavation undertaken across the southern fringe of Cambridge (including sites such as Trumpington Meadows and Clay Farm) and within the Cambridge Biomedical Campus itself, it forms part of an important body of work. As such it has the potential to further our understanding of settlement and land use within the wider landscape.

Finally, the earlier prehistoric and Roman archaeology of the South Plot has little archaeological potential although the Early Neolithic pits are a useful addition to the local archaeological record.

AstraZeneca NCS North Plot

Artefactual and ecofactual analysis

The North Plot produced significant finds assemblages representing activity spanning the 1st-4th century AD. The finds are summarised in Table 17, below.

	Quantity	Weight (g)
Flint	92	742
Roman pottery	5092	79570
Worked stone/ building stone	30	82400
Burnt stone	-	24430
Slag	29	950
Burnt/worked clay	-	474
Metalwork	322	5437
Coins	80	-
Glass	37	-
Tile	132	15680
Wood	5	-
Human bone	9	9496
Animal bone	7269	92256
Shell	7269	12286

Table 17: North Plot finds assemblage breakdown

Once again, detailed assessment and recommendations for further work are included in the individual Specialist Studies. Below are summary statements for each:

Flint
The flint assemblage, which is small and largely chronologically non-diagnostic and residual, is of no real potential and no further work is warranted.

Roman pottery
The large assemblage of Roman pottery spans the 1st-4th century and includes a wide range of vessel types, dates and provenance. The assemblage is of significant potential in terms of characterising the occupation at the North Plot site and how it developed through time and in comparing the site to other known local sites this will further our knowledge of Roman Cambridge and its pottery supply. Full analysis of the assemblage is warranted and should include detailed study of a number of substantial pottery groups, research into the sources of both local and non-local wares and specialist examination of the stamped and decorated samian ware sherds. Sherds will also be selected for illustration. There is also significant potential, when combined with the phasing and stratigraphy of the Roman settlement, that the dating of much of the assemblage can be refined.

Worked stone/building stone
Although not particularly large, the worked stone assemblage represents an interesting group with the abundance of millstones compared to handmills a relatively unusual characteristic. The material warrants further analysis including full description and photography and illustration of selected pieces, in addition the typology and provenance of the querns requires full discussion. The building stone requires minimal further work although the pedestal should be drawn and its source investigated.

Burnt Stone
The burnt stone is likely to be almost entirely residual and represent 'background' prehistoric activity. The assemblage warrants no further work.

Slag
The metalworking remains are relatively typical for Roman sites of this period and represent small scale secondary iron smithing; there is no evidence for smelting or production. As such the assemblage does not warrant further analysis; the two crucible fragments may represent bronze working and although not a high priority, could be analysed using PXRF to confirm this.

Burnt/Worked Clay
The assemblage is relatively small and of little further interpretative value. It has been fully assessed and characterised and does not warrant further study.

Metalwork
The metalwork assemblage is small especially compared to other sites in the Addenbrooke's environs such as the Hutchison Site and the LMB site. Nevertheless, aspects of it, particularly some of the ironwork, have the potential to provide insight into the day to day activities undertaken on or near the site. Consequently selected items within the ironwork should be x-rayed to aid further identification and interpretation. A number of the finer iron and copper alloy items should also be illustrated for publication. Aside from these the remainder of the assemblage has already been analysed to a sufficient level.

Coins
The coins have been fully recorded and catalogued at the assessment stage and little further work is required. Further analysis of their distribution does, however, have the potential to help refine the site phasing sequence. The Alfred the Great silver penny is in itself a very significant find; it has been added to the Fitzwilliam Museum's coin catalogue and is an important addition to the archaeological record in terms of the study of contemporary coinage.

Glass
The small assemblage of glass is on the whole not worthy of further analysis, although the potential evidence of glass working/recycling provides an interesting insight into the kinds of activity undertaken at the site. The glass unguent bottle is a more significant and rare find, especially in its undamaged state; such bottles generally contained perfumed oils and in addition to full recording and illustration of the vessel, the apparent residues on the vessel's interior should be analysed in the hope of identifying its contents.

Roman Tile
The assemblage is small and probably derives from buildings such as the scheduled Roman villa site at Shelford. As such it has little potential in terms of furthering our understanding of North Plot site and does not warrant further analysis.

Wood

The partial nature of the pole ladder recovered from well F.1758 limit its potential and the wood does not require conservation. Having said that, it is an important addition to the list of comparatively few pole ladders recorded in Britain and a wider literature search will enable it to be put in context in terms of typology and manufacturing techniques. Wood species identification of the ladder rungs (the uprights already having been identified as oak) would also be useful.

Human bone
The two cemeteries have good potential in terms of furthering our understanding of Roman burial practices, and their development through time, within the local landscape. Analysis of the human remains has been undertaken as part of the assessment

Animal Bone
The large animal bone assemblage has considerable potential to advance our understanding of the site's economy, food provision and animal-human relations. Full analysis is warranted particularly in terms of butchery patterns, species ratios and bone deposition. It will be important to consider the site within the context of the known Roman archaeology of the Addenbrooke's environs as well as integrate them with the relevant results of the North Plot's other specialist studies.

Shell
The marine shell assemblage is relatively large in terms of other local Roman sites and although no feature assemblages are statistically viable for full analysis, further

analysis of the assemblage in order to identify potential sources and evidence of processing would be worthwhile.

In summary, the Roman pottery, animal bone and human bone assemblages warrant full analysis along with elements of the metalwork, worked stone, wood and marine shell assemblage. For the remaining artefact groups summary reports will be produced for the publication.

Environmental analysis

A total 107 bulk environmental samples were collected from the North Plot, of which 25 have so far been assessed. The assessment results indicate that the assemblage is of limited potential with only two individual feature assemblages being of sufficient density for quantification. Given this and the fact that these may not accurately reflect on-site activities *per se*, no further work is currently recommended, although if it becomes apparent over the course of the site's full analysis that further samples require processing and assessment then this will be carried out. The pollen samples show more potential for reconstructing the contemporary environment and full analysis is recommended. Having said that, the character and significance of the North Plot's archaeology means that an integrated palaeoenvironmental and geoarchaeological programme of work such as that proposed for the South Plot is not warranted.

Radiocarbon dating

Radiocarbon dating will do little to refine the chronology of the site and is not warranted for the archaeology of the North Plot

Statement of potential

The site plan of the North Plot is in some ways misleading in that the finds assemblages suggest that the number of features and the complexity of the site plan does not necessarily equate to high density settlement; the settlement at the North Plot was probably at any one time relatively small scale. However, although in many ways a typical Roman rural settlement, the significance of the North Plot lies in being part of an extensively investigated Roman landscape and in its place within a broader multi-period settlement network. In conjunction with the other Late Iron Age/Roman sites excavated within the Biomedical Campus and Addenbrooke's environs, the site has the potential to advance our understanding of the Roman landscape on a local and regional level in terms of settlement, burial practices, land use and economy, and environment. The lifespan of the settlement from the late 1st to the 4th century AD also provides the opportunity to see how this developed over time. In establishing the site's character it may also be possible to consider the site's position in terms of communications networks/roads as well as the organisational structure of the wider landscape.

The potential pre-Roman and Anglo-Saxon phases need to be further investigated, however, if proved to be genuine they would be of only local significance albeit providing further evidence of the character of landscape activity over time.

REVISED RESEARCH AIMS

The excavation results allow a number of the research priorities outlined for the Addenbrooke's landscape (Dickens 2014), as well as in the revised regional research framework for the East of England (Medleycott 2011), to be addressed. As a result of the post-excavation assessment the following revised key research aims have been identified:

- to refine the chronology and development model for the Middle Bronze Age field system, enclosures and associated settlement and to determine its duration; a programme of radiocarbon dating and Bayesian modelling will be required. Establishing an accurate date and chronology for the site will in turn contribute to regional Bronze Age chronologies.

- to determine how the Middle Bronze Age archaeology recorded on adjacent sites relates to the archaeology of the South Plot; to effectively trace features across the landscape and in doing so to reconstruct a more 'complete' plan/layout of the MBA I field system, the MBA II Enclosures A-C and the MBA III ditches in the area. Incorporating the results of the Green Corridor evaluation, its finds assemblage and radiocarbon dates is of particular importance.

- to place the Middle Bronze Age enclosures in their local and regional context and to investigate potential regional settlement patterns. Is there for example a difference in character between the field systems and settlement of the Fens to the north of Cambridge compared to the enclosed settlements on the southern fringe; does the South Plot settlement site show more affinity to the slightly later enclosed settlements of Essex, especially given the presence of Ardleigh Ware?

- to establish the function and status of the Middle Bronze Age settlement and potentially its relationship to the Clay Farm settlement enclosures.

- to investigate depositional practices within the Middle Bronze Age settlement firstly in terms of potential 'middening' associated with domestic activity and secondly in terms of 'placed' deposits such as the articulated animal skeletons, the human remains and the metalwork, which potentially are more 'ritual' in character.

- to establish the character of the Iron Age settlement and how it developed over time. To what extent do the Early Iron Age features potentially represent 'off-site' activity relating to the more substantial settlement at Clay Farm or Trumpington Meadows and to what extent is the Middle Iron Age settlement part of a dispersed settlement pattern which occurs across this part of the landscape?

- to investigate the dynamics of Late Iron Age and Roman settlement. Excavations within the Addenbrooke's landscape and beyond have identified a series of apparently discrete settlement sites, some multi-period and some period-specific. How did this network of settlements relate to each other and how did they develop over time; to what extent can 'Romanisation' and associated changes in settlement layout and character be detected?

- to determine the character, scale and status of the North Plot's Roman settlement as well as refine its chronology and duration. It is anticipated that it will be possible to identify a number of 'sub-phases' within the broader Phases 1 and 2 currently identified. This will largely be done through refining the dating of the pottery assemblage following assessment of the site's stratigraphy and phasing.

- to identify areas of Roman settlement activity and potential further building plots within the settlement layout and to determine whether any zones associated with specific activities may have existed.

- to fully analyse and characterise the Roman settlement's two cemeteries and consider their burial practises in a local and regional context.

- to determine the extent to which the archaeology of the North Plot relates to that of the Hutchison site to the north and the New Papworth site to the south, presumably in part at least they represent the same settlement.

- to place the Roman settlement in its local and regional context and consider how it fits in to regional settlement patterns. Furthermore to investigate its relationship to Roman Cambridge and whether the sites within the Addenbrooke's environs could be considered to be part of a relatively substantial settlement in their own right.

- to characterise the development of the local economy, land use and environment over time from later prehistory through to the Early Saxon period; the AstraZeneca NCS sites in combination with the other Cambridge Biomedical Campus sites can potentially provide data from a broad range of sites dating to multiple periods.

PUBLICATION AND DISSEMINATION

The later prehistoric archaeology of the South Plot and the Roman archaeology of the North Plot warrant full publication and it is anticipated that the sites will be included within a monograph covering as many of the various Cambridge Biomedical Campus sites as is possible. The CAU excavated sites within the Cambridge Biomedical Campus (or '2020 landscape' as it was previously known) are listed below.

The Laboratory for Molecular Biology (excavated 2008; Collins 2009)

The Boulevard (excavated 2009; Newman, 2010)

The Energy Centre (excavated 2014; Collins 2014)

The Addenbrooke's Multi Storey Car Park (excavated 2013; Tabor 2013)

In addition the excavations of a further two, possibly three, plots within the Campus, which are yet to be undertaken, are also planned for inclusion. Given this, a firm timetable for publication is yet to be established. However, if there is any significant delay in the programme (which would prevent publication of the AstraZeneca NCS site within two years) this will be officially sanctioned by Andy Thomas of the Cambridgeshire Historic Environment Team. The exact format and layout of the monograph is also dependent on negotiations with the various interested parties, which will be undertaken as soon as is reasonably possible following the release of this report.

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SPECIALIST STUDIES: SOUTH PLOT

Flint – *Emma Beadsmoore*

A total of 2159 ((≥ 11792g) flints were recovered from the south site; 95 (≥614g) were unburnt and worked, 9 (≥83g) burnt and worked, whilst 2055 (≥11095g) were just burnt. The flints are listed by type and feature in Tables 18 & 19.

Results

The earliest feature identified on the site, a pit (F. 1096) containing Mildenhall pottery, also yielded earlier Neolithic flint; two blades, a flake and an edge used flake that were the products of systematic flake/blade production/core reduction strategies.

However, the majority of the material was recovered from the Middle Bronze features, predominantly the enclosure ditches. The flint comprised a broad chronological range of material, dating from the Late Mesolithic/Early Neolithic through to material comparable with later prehistoric assemblages and including evidence for the Late Neolithic/Early Bronze Age. The earlier material was all residual, not surprising considering the scale of the enclosure ditches, and yielded evidence for systematic flake/blade production/core reduction; including core rejuvenation flakes, blades and a core. Evidence for other tasks alongside flint working were provided by potentially Neolithic utilised flakes and a scraper, two biface thinning/sharpening flakes (likely to be from Neolithic axes) and a Beaker/Early Bronze Age barbed and tanged arrowhead. Material that was potentially broadly contemporary with the Middle Bronze Age features comprises crudely produced flint, largely working waste, with one identifiable tool, an end scraper.

The remaining material was recovered from Early Iron Age features, undated features and a Roman ditch and again comprises a mixture of systematically produced earlier, residual material alongside crudely manufactured flint working waste more compatible with later prehistoric assemblages and potentially broadly contemporary with the Iron Age features. Residual evidence for Neolithic activity is provided by working waste, (eg an opposed platform core, flakes and blades), as well as some tools (eg scrapers), whilst a potentially Late Neolithic/Early Bronze Age flake knife was also recovered. The potentially later material comprises flint working waste.

Recommendations

The assemblage, whilst limited, provides evidence for earlier landscape use, as well as potentially material that was broadly contemporary with the later prehistoric phases of activity. A more detailed analysis of the assemblage may allow the earlier and later components to be articulated more fully as well as defining areas of earlier activity, even if the material was residual in later features.

Feature	secondary flake	tertiary flake	thinning flake	secondary blade	tertiary blade	flake knife	single platform core	opoosed platform core	core fragment	core rejuvenation flake	end scraper	end and side scraper	edge used flake	miscellaneous retouched flake	barbed and tanged arrowhead	chip	chunk	burnt chunk	unworked burnt chunk/chip	Totals
1001		1																		1
1002																		1	2	3
1004	1																			1
1011						1														1
1015																			1	1
1018	1	1									1								1	4
1026	1																			1
1028									1											1
1029	2																		1	3
1031								1									1		3	5
1035	2																		2	4
1057	1				1															2
1062	3				1										1					5
1063		1																		1
1078	1																			1
1082																			5	5
1088																1			2	3
1092		1																		1
1096	1			1	1								1							4
1106	1		1		2												1			5
1113	1	2																		3
1116																2				2
1121		1											1							2
1124	1											1								2
1128	2	2	1			1														6
1129					1															1
1131																1				1
1143		2		1	1							1				1				6
1161																			2	2
1162		1					1													2
1164														1						1
1165	1				1															2
1166	1				1					1										3
1168	1																			1
1170	4									1									1	6
1172	1																			1
1179		1																		1
1183	1										1								3	5
1188																			1	1
1190	1	1											1			1				4
Sub totals	28	14	2	2	9	2	1	1	1	2	2	2	3	1	1	6	2	1	24	104

Table 18: Flints listed by features and type

Feature	secondary flake	tertiary flake	secondary blade	core rejuvenation flake	end scraper	chip	chunk	unworked burnt chunk/chip	Totals
1191		1							1
1192						1		1	2
1193	1								1
1194	1								1
1195							1		1
1197	1								1
1201						1		2	3
1207				1					1
1210								5	5
1214								4	4
1217	1	2							3
1225	4	1						12	17
1231	1					2	1		4
1233					1				1
1270			1						1
1277								1	1
1279	1							2	3
1295								2	2
1333								1	1
1339								1	1
1354		1							1
Sub totals	10	5	1	1	1	4	2	31	55

Table 19: Flints listed by features and type

Prehistoric Pottery – *Mark Knight and Paul Sealey*

A total of 1419 sherds (13542g) of prehistoric pottery were recovered from the excavations at AstraZeneca (South), with a mean sherd weight of 9.5g. The material dates from the Early Neolithic through to the Middle Iron Age, although the vast majority of the assemblage is of Middle Bronze Age (37.8% by number and 43.6% by weight) or Middle Iron Age origin (40.0% and 42.2%; Table 20, Appendix Table C1).

The condition of the material varied between period and context, but generally was good to very good. The assemblage comprised large, medium and small sherds and included fresh fragments alongside abraded, weathered and burnt pieces. The earliest assemblages (Early Neolithic and Early Bronze Age) consisted chiefly of small pieces whereas the later collections (Middle Bronze Age, Early Iron Age and Middle Iron Age) incorporated large fragments as well as occasional semi-complete profiles. Initial analysis of the fabric series identified four major groups: flint-rich (predominantly Early Iron Age but also including Early Neolithic and some Early Bronze Age forms), grog-rich (Early Bronze Age), shell-rich (Middle Bronze Age) and sand-rich (Middle Iron Age). A hard compact fabric with quartz inclusions was also identified and this corresponded with a few finely burnished Middle Bronze Age Globular Urn fragments.

Period	Types	Date Range	Number	Weight	% No./ Wgt.
Early Neolithic	*Plain Mildenhall*	*c.* 3800-3500 BC	10	36g	0.7/0.3
Early Bronze Age	*Beaker & Collared Urn*	*c.* 2400-1500 BC	51	168g	3.6/1.2
Middle Bronze Age	*Deverel-Rimbury & Globular Urn*	*c.* 1500-1100 BC	537	5908g	37.8/43.6
Early Iron Age	*Post-Deverel-Rimbury & Darmsden-Linton*	*c.* 800-350 BC	255	1715g	18.0/12.7
Middle Iron Age	*Incl. Scored Ware*	*c.* 350-50 BC	566	5715g	40.0/42.2
Total			***1419***	***13542g***	

Table 20: Assemblage breakdown by period and (where appropriate) type.

Early Neolithic & Early Bronze Age

The Early Neolithic assemblage (F.1096) involved ten (poorly sorted) flint-tempered sherds, including a simple rounded rim belonging to a medium diameter simple bowl characteristic of the plain Mildenhall range. Three diminutive Beaker sherds (incised and thin-walled) were present in F.1266, whilst F.1008, F.1183, F.1197, F.1142 and F.1290 contained possible collar fragments and/or singular pieces made of fabrics typical of Early Bronze Age forms (especially Collared Urn).

Middle Bronze Age

With the exception of a couple of sherds of Globular Urn, fragments belonging to Deverel-Rimbury wares made-up the vast majority of the Middle Bronze Age material. The Deverel-Rimbury assemblage comprised remnants of medium to large-sized vessels with straight or barrel-sided profiles with simple flattened rims, and sometimes decorated with single horizontal cordons of fingertip impressions. At the same time, Ardleigh-like decoration (random round-toothed comb-impressions; Brown 1999, 78) occurred on large body sherds in F.1062 alongside more familiar Deverel-Rimbury types. Smaller, jar-like profiles (sometimes with slight shoulders) were also present and these tended to have thinner walls.

Feature	Number	Weight	MSW
1062	80	1247g	15.6g
1113	67	695g	10.4g
1116	39	489g	12.5g
1128	34	486g	14.3g
1137	34	227g	6.8g
1166	21	216g	10.3g
1183	33	300g	9.1g
1206	12	284g	23.7g
1207	21	183g	8.7g
1210	28	378g	13.5g
1217	36	628g	17.4g
Total:	*405*	*5133g*	*12.7g*

Table 21: Large Deverel-Rimbury assemblages by feature.

Shell represented the predominant opening material, and in general the Deverel-Rimbury fabric was medium hard with frequent to abundant crushed shell. In comparison, the Globular Urn pieces (F.1116) were made of an extremely hard fabric with common flint/quartz inclusions and these also retained well smoothed burnished surfaces. Eleven features contained over 150g of Middle Bronze Age pottery and together these held most of the Deverel-Rimbury collection (75.4% by number and 86.9% by weight; Table 21).

As a group the Middle Bronze Age pottery bears a strong resemblance to the adjacent Clay Farm assemblage (Table 22), in that it too yielded typical 'Cambridgeshire' Deverel-Rimbury forms alongside less familiar forms such as the Ardleigh-type and Globular Urn pieces (Knight in Phillips & Mortimer 2011, 77-85). This particular attribute could be indicative of the sites' southernmost Cambridgeshire position and therefore its relative proximity to Essex/Suffolk border where the latter forms are more common.

	Number	Weight	MSW
AstraZeneca (South Plot)	*537*	*5908g*	*11.0g*
Clay Farm (Area B)	831	5307g	6.4g
Clay Farm (Area E)	845	4655g	5.2g

Table 22: Significant South Cambridge Deverel-Rimbury assemblages.

Compositionally, as well as contextually, the Clay Farm group contained at least two separate Deverel-Rimbury assemblages: one composed of mostly thin-walled, jar-like forms (Area B), the other, of mostly thick-walled, bucket-like vessels (Area E). At the same time, the Area B assemblage had the attributes of an assemblage buried relatively rapidly and wholesale whereas the Area E assemblage was much more fragmentary and dispersed (ibid, 81). At first sight, the AstraZeneca group would appear to be closer in character to the Area E assemblage as, it too, was made up predominantly of thick-walled vessels albeit in less fragmentary condition. Closer examination of the assemblage (including sherd size, wall thickness, and refitting analysis) would allow for better comparison.

Early and Middle Iron Age

The Iron Age pottery from the AstraZeneca site is dominated by wares of Middle Iron Age type. Diagnostic features include:

- Vessels inspired by the incised decoration on the East Midlands scored ware found further north in Cambridgeshire.
- High-shouldered bowls and jars with un-emphatic necks and everted or upright rims
- Rims decorated with straight incisions or finger-tip impressions, and
- Vessels with flat bases.

This ceramic tradition ran from the 4th century BC until – in some cases – the Roman conquest. On other sites the ware is found alongside wheel-thrown pottery of Aylesford-Swarling type from the end of the 1st century BC. There are also sites where Aylesford-Swarling completely displaces Middle Iron Age pottery by AD 43. There is some reason to think that the AstraZeneca site pottery is earlier, rather than later in the Middle Iron Age. As a rule, in south Cambridgeshire Middle Iron Age pottery is dominated by sand-tempered fabrics. But at the AstraZeneca site there are significant quantities of sherds tempered with crushed burnt flint, a feature of early groups in the county. Indeed there is material from the AstraZeneca site that harks back to the Early Iron Age Darmsden-Linton pottery style zone dated *c*. 600-350 BC. A few rim sherds came from vessels with much thinner walls than is usual in Middle Iron Age contexts and which suggest fine ware bowls of Darmsden-Linton type. Very few vessels also have the carinated shoulders typical of the Darmsden-Linton repertoire. A handle sherd with oval cross-section and flexed profile in a sand-tempered fabric should also belong here. Other early material includes a large shoulder sherd with thumb (not finger-tip) impressions.

In terms of chronology it seems reasonable to envisage the Iron Age pottery from the AstraZeneca site running from the very end of the Darmsden-Linton phase to a point somewhere in the Middle Iron Age. There is no hint of late Iron Age pottery of Aylesford-Swarling type and it is quite possible the ware does not extend beyond the 2nd century BC. Pending further study of the pottery, it can be provisionally dated *c*. 400-100 BC. In terms of its regional context, the AstraZeneca site pottery resonates with the much smaller assemblage of pottery transitional between early and middle Iron Age from Arbury Camp at Cambridge (Webley 2008).

Roman Pottery – *Rob Perrin*

Only eight sherds weighing 28 grams were recovered from two ditches (F.1061 and F.1279) in the South Plot dating to the 1st and 2nd centuries AD respectively. Given the absence of any other Roman features on the South Plot these sherds have been included in the assessment and considered as part of the North Plot assemblage (see Perrin, below).

Worked Stone – *Simon Timberlake*

A total of 11.23 kg of worked stone was recovered from this site, from three different features. The hammerstone from F.1116 may be Middle Bronze Age or earlier in date, and the large saddlequern from F.1128 Middle Bronze Age.

Hammerstone

<822> F.1116 [1773.01] A round quartzite pebble (c.70mm diameter; weight 192g) originally used as a hand-held hammerstone on two of its corners (with small pounding facets present <20mm), subsequently used as burnt stone material, and following quenching shattered longitudinally into half.

Saddlequern

<836> F.1128 [1874.2]. A large flat slab-type saddlequern made of quartzitic sandstone (sarsen erratic boulder), used on both opposing longitudinal faces. Size: 350mm x 185mm, weight 11 kg. The underside is perfectly flat and smooth (grind area 340mm x 185mm) and the topside flat to very slightly concave (grind area 280mm x 130mm) and very slightly rougher (pock-marked in places). Typical saddlequern type of the pre-Iron Age and post-Neolithic – almost certainly Middle Bronze Age in date.

Fine worked stone (Amber)

<517> F.1183 [1765.02]. x4 small fragments of weathered and fragmented fossil resin – most likely the parts of a round amber bead with a minimum original diameter of at least 20mm (weight < 1g). No trace of any perforation for the threading of this bead was detected, although the pieces recovered were probably far too small and too limited to the circumference of the bead for any trace of this to be detected.

The context of this find within the fill of this Middle Bronze Age ditch (part of the triple-ditched enclosure) suggests that it was probably deposited along with domestic refuse, therefore it may already have been lost or discarded following damage. Considerable amounts of burnt stone were also recovered from this feature, yet there is no evidence at all that these fragments were burnt or otherwise heat-affected.

Recommendations

The saddlequern should be photographed and potentially drawn for publication. The assemblage does not warrant further analysis.

Burnt Stone – *Simon Timberlake*

Burnt stone weighing a total of 453.684kg was recovered from 74 different features; most of this coming from F.1172 (47.1 kg), F.1190 (40.9 kg), F.1183 (31.6 kg), F.1166 (24.6kg), F.1113 (23 kg), F.1058/1059 (23.65 kg), F.1137 (22 kg) and F.1259 (20.2 kg). Most of the stone came from ditch slots associated with the large triple-ditched Middle Bronze Age enclosure (some of the largest assemblages came from the corners of these ditches). Most of the remainder of the assemblage is probably approximately the same age, but came from un-associated ditches (eg. F.1137 and F.1259) and primary burnt stone contexts such as the twinned cooking pit(s) F.1058/1059. A full catalogue of the burnt stone is included in Appendix C (Table C2).

It seems likely that we are dealing with a general background level of prehistoric (Middle Bronze Age) domestic activity, the residual remains of which have ended up within the fills of some of the largest features, the ditches associated with the major central enclosure. However, most of the original sources of this burnt stone, which

likely includes cooking pits, seem to have been lost to the widespread truncation of the shallowest features. As a result, only two such intercut pits were recognized from this site (F.1058/1059) along with a possible second more truncated example (F.1013), which shared many of the same characteristics. This situation is not unusual as regards Middle Bronze Age burnt stone, with much of this being dispersed across domestic features and in later fills; a quite different scenario to what we find on Earlier Bronze Age sites where this material tends to be associated with spreads, mounds and pits, and usually close to where it was produced.

The fire and quench-cracked cobbles composed predominantly of burnt sandstone conform to the typical assemblages we expect of the Middle Bronze Age, with most of the un-fractured cobles ranging from between 100-150mm diameter, and collected from the local gravels. Given the rate of fragmentation (which in some cases relates to the rate of re-cycling and burning) we are looking at an average size for the discarded material of around 60-80mm. There also seems to be a strong emphasis on the collection of quartzitic sandstones and quartzites, but equally some of the harder and rarer erratic rocks such as dolerite and porphyry are present in the assemblage (although given the low incidence of the latter it is difficult to know how much of this is in fact deliberate selection). Certainly flint is generally being avoided here as standard burning material.

The complete excavation of a probably Middle Bronze Age burnt stone 'cooking pit' (F.1058/ 1059) in the south-east corner of this site is only the second confirmed example of such a feature to have been found and examined within the wider Addenbrooke's landscape (see Timberlake 2007b regarding the example from the Addenbrooke's Link Road Site 3). Indeed, such twin-pit features interpreted here as being stone-burning firepits linked with basins for boiling or cooking food (and specifically a Middle Bronze Age development) are not otherwise, to my knowledge, recorded in the literature. As such this occurrence is worthy of a published note.

Conclusion and recommendations

The analysis of almost half a ton of collected burnt stone was made that much easier and cost-effective through its examination and recording on site. The recording of these considerably more complete assemblages of burnt stone recovered from feature slots is almost certainly a more robust way to properly characterize the scale and composition of burnt stone, given that some collection of burnt stone from some sites is regarded simply as being 'token sampling', a method of collection which is meaningless when trying to assess abundance and relative incidence of this alongside other finds categories.

The recorded assemblage from the South Plot seems quite typical of Middle Bronze Age domestic use of burnt stone, with the dominance of quartzitic sandstone cobbles collected from the local gravels, but little or no incidence of burnt (calcined) flint, nor for the re-use of discarded worked stone, a feature which is much more typical of the Early-Middle Iron Age. Similarly, the accumulation of much of this burnt stone within the fills of large-ditched enclosures is also quite characteristic of what we find elsewhere within the Addenbrooke's landscape (see Timberlake 2007b; Evans *et al.* 2008; Collins 2009; Mortimer 2012; Patten, Lucy & Timberlake *forthcoming*),

illustrating the ubiquity of this material as well as its dispersion/distribution (or 'reach') from the (now missing) domestic hearths in which it was created.

Prior to full publication of this site it would be a useful exercise to plot the densities of burnt stone per slot. Along with other evidence this might help to suggest a foci for the dwellings or 'dwelling areas' associated with this settlement, the physical traces of which for the most part appear lost.

Burnt/worked clay and vitrified clay (fuel ash slag) – *Simon Timberlake*

Some 3.622 kg of burnt clay was recovered from this site, whilst another 3.056kg of vitrified clay (originally labelled as 'slag') probably had a similar origin. Vitrified clay in this instance appears to be the product of the high temperature fusing of daub with 'fuel ash' formed as a result of the intentional or accidental burning of thatch-roofed wood and daub structures (Bayley et. al 2001, 21), most likely dwellings or granaries. To be more correct therefore, the true total amount of burnt and worked clay recovered from this site is 6.678kg. This figure also includes 3.272kg of worked clay; all of it probably loomweight. Some 3.028 kg of this loomweight material comes from just one feature (F.1018). A full catalogue of burnt/worked clay and vitrified clay, as well as the fabric series, is included in Appendix C (Tables C3, C4 and C5).

Burnt and vitrified clay (daub)

Just 0.3 kg of the burnt clay could not be identified as loomweight, which together with the highly fired (vitrified) clay, gives us something in the order 3.346 kg of likely daub (walling) material recovered from these excavated slots. Between 5-8 different clay fabrics were recognized amongst this (see Appendix C, Table C5), with some 3-4 examples where voids from burnt-out upright wooden stakes or roundwood woven wattle (including hazel) were provisionally identified. The occurrence of some of these impressions within what must have been (originally) semi-molten vitrified clay lump closely resembles the larger vitrified clay assemblage from North-West Cambridge 13 Site II East (see Timberlake in Evans *et al*. forthcoming).

Whitewashed painted daub

A single lump of chalky daub painted on its exterior concave surface with a whitewash coat was recovered from F.1183 (0.212 kg) If indeed this is Middle Bronze Age in date, it is a relatively rare find, most such daub with whitewash being associated in this country with Late Iron Age – Romano British dwellings.

Worked clay (loomweight)

From several contexts within F.1018 and F.1133 came probable loomweight fragments composed mostly of Fabric 4 (but with smaller amounts of Fabrics 1, 3, 5 and possibly 2), although few of these were particularly diagnostic. However, within context [1666.03] F.1018 was found c.2.5 kg of identifiable loomweight pieces.

Loomweight 1 was a triangular-equilateral ('Iron Age type') loomweight which possessed a thick rounded rectangular x-section (160mm x 160mm x 65mm thick). This almost complete example weighing just short of 2 kg appears to have two (basal) perforations of about 10-13mm and a narrower (possibly top?) perforation of <10mm. From the same context came fragments of a second (approx.1/3 of) a loomweight which was smaller (therefore probably lighter) and only 50mm thick. Both these loomweights had been made from the same burnt clay fabric (i.e. Fabric 4 with some Fabric type 1) and were carefully moulded with round and smooth edges and corners. Interestingly there appeared to be very little 'thread ware' visible upon the edges of these perforations, which is either suggestive of little or no warp thread movement during the use of this weight upon the loom (perhaps on account of the 'looped' configuration of thread passed through all 3 holes), or alternatively a short use-life prior to breakage. However, another explanation for this has been suggested; namely that these moulded perforated 'loomweights' might in fact be several different sorts of objects, perhaps with a variety of different use functions represented (Wild 2003, 3). In volume 6 of Cunliffe's Danebury series, Poole demonstrated reasonable doubt as to the function of these triangular, pierced clay objects (Poole in Cunliffe 1995, 285-6), and provided the results of research (based on a number of large assemblages throughout the south west of England) which suggested a tendency for these objects to be associated with oven structure, daub and clay rather than with other textile-related material culture. In fact Poole made a distinction between chalk and clay triangular objects; use wear of a sort consistent with that expected on a loom weight is often observed on the former, but rarely on the latter.

Conclusions

Assuming that we are looking at triangular loomweights for these moulded worked clay objects, the type(s) recovered are recognisably Iron Age in form, which accords with the pottery recovered from F.1018. However, the long currency (hence conservative nature) of loomweight typologies is well known, and most Iron Age forms appear to have origins at least in the Late Bronze Age, and may even extend into the very Late Iron Age – Romano British period.

The vitrified clay from this site (particularly from F.1170) is most likely the product of the accidental or intentional burning of a thatch-roofed wooden and daub building. A very similar assemblage to this came from Site II East in NW Cambridge, which was excavated in 2013.

Recommendations

Loomweight 1 from F.1018 should be photographed and drawn prior to publication.

Metalwork – *Grahame Appleby*

Seventeen pieces of metalwork, weighing 132g, were recovered from archaeological features and as surface finds from the site. The assemblage consisted of 13 pieces of copper alloy (112g), 2 iron nails (total weight 10g; not described), a fragment of iron

sheet (2g; not described) and a lead musket or pistol ball (8g). Recommendations for illustration and any further work are included in bold after each catalogue entry.

Copper Alloy

<803> F.1026 [1526.01]. Small fragment of thin copper alloy strip or ring. The surface patina suggests this is Bronze Age in origin. Length 11mm, width 5mm, thickness 1.3mm, weight <1g.

<805> F.1060 [1563.1]. Large well preserved and well-made split ring with one arm bent and missing its tip. Length 70mm, width 3.6mm, weight 5g. Post-Medieval?

<808> F.1128 l1646.02] SF129. Heavily corroded Middle Bronze Age side-looped spearhead. The blades of the head have seen considerable metal loss and are delaminating towards the central keel; however, the blades survive intact towards the socket – max, width 28.1mm. Both side loops are small (*c*. 16.5mm long) and blocked. The socket is substantially complete, diam. 17.66mm, with some metal loss; a casting seam is visible on both sides. The keel transits from the socket to form a lozenge-shape cross-section towards the tip. It is probable that the spearhead has been exposed to a high temperature due to the condition and appearance of its surface, but this was not sufficiently high enough to melt the metal. Length 135mm, weight 53g. **Photograph and illustrate.**

<809> F.1190 SF132. Small fragment from the tip of a Middle or Late Bronze Age stepped spearhead with lozenge-shaped cross-section. Length 16.4mm, weight 1g.

<810> F.1190 [1719.01] SF130. Very well preserved, narrow copper alloy awl; the tip is slightly triangular, indicating damage or wear. The working end is square in cross-section, the much shorter hafting end circular. Length 58.8mm, width 5.2mm, blade width *c*. 2.75mm, weight 4g. Later Bronze Age. **Photograph and illustrate.**

<811> F.1270 SF133. Small sub-rectangular piece of copper alloy with a dark green pitted patina on one side, paler on the other. The shape of this piece may indicate it comes from the tip of a small chisel as its thickness tapers slightly. Width 16.7mm, weight 2g. Bronze Age?

<813> SF121. Fragment from the working end of a copper alloy chisel. The surface is pitted and the chisel has snapped/shattered with a transverse break towards the blade. Width 20mm, weight 8g. Bronze Age? **Photograph.**

<814> SF122. Fragment of a copper alloy Langton Down type brooch consisting of a straight-sided bow with a flat cross-section, straight head and cylindrical spring cover. The bow has four parallel ridges; the foot-plate is missing with only traces of its union with the bow present (cf Haselgrove 2008, 77, cat. no. 7). The surface has a pale green powdery patina. Length 37.3mm, weight 5g. Late Iron Age/Roman.

<815> SF123. Well preserved, very small copper alloy bead with relatively large perforation. External diameter 9.8mm, internal diameter 4mm, weight 1g.

<816> SF126. Well preserved copper alloy awl or small chisel similar to cat. no. 810. The working end is rectangular in cross-section, the hafting end circular. The blade is chipped and has some metal loss. Length 57.6mm, width 5mm, blade width 4.45mm, weight 4g. Later Bronze Age. **Photograph and illustrate.**

<817> SF135. Reasonably well preserved thin flat ring with d-shaped cross-section. The surface is dusty and pale green. External diameter 21mm, internal diameter 16.7mm, weight 1g. Prehistoric or Roman. **Photograph and illustrate.**

<818> SF136. Corner piece of a larger copper alloy mount or plate, possibly utilitarian in nature. One edge has a much steeper face than the shorter edge. The surface has a dark brown/green patina with areas of exposed dark red copper alloy. Dimensions: 35mm x 26mm, weight 2g. Post-Medieval?

<819> Reasonably well preserved Bronze Age copper alloy chisel, with slightly raised/flanged edges creating a slightly concave surface on the planar faces; rectangular cross-section. The blade widens

slightly towards the tip. The surface is pitted and corroded with dusty pale green patches in places. Length 60mm, width 10.3mm, thickness (head) 7.7mm, blade width 11.6mm, weight 819. Later Bronze Age.

Lead

<812> SF120. Small roughly round lead pistol or musket ball, flat on one side. Diameter 12.6-13.4mm, weight 10g. Post-Medieval.

Although the assemblage is small, it is notable for the recovery of the Middle Bronze Age side-looped spearhead, the tip of a second spearhead, the Bronze Age chisel and the probable Bronze Age awls. The date of these items is in marked contrast to the assemblage found on the North Plot, where no securely identified Bronze Age items were retrieved during excavations. It is also important to note that the recovery of weapons or tools from British Bronze Age settlement features is relatively rare, although the number of items being recovered from secure archaeological contexts has increased in recent years. Of particular relevance is a side-looped spearhead recovered from the Clay Farm excavations (Phillips and Mortimer 2012) with which the South Plot example should be compared as part of the full analysis.

Worked bone – *Vida Rajkovača*

Four fragments of worked bone and a single worked antler element were recorded from the assemblage.

<242> [1596.1] F.1062
A working end of a bone pin survived, though the surface of the bone is heavily eroded. The surviving length is 8.79mm and the width 3mm.

<246> [1596.2] F.1062
The object represents a bone pin fashioned from a pig fibula. The head is flat and rounded with a perforation in the centre, measuring 3mm. The surviving length is 59.9mm, and the working end is missing. This does not seem to be the same object as <242>.

<310> [1565.1] F.1062
Similar to <242>, this is a working end of a heavily eroded bone pin, with the surviving length of 48.57mm and width of 3mm.

<645> [1754.1] F.1217
A cattle-sized limb bone shaft fragment was split axially, then polished and probably turned into a gauge. The working end is missing, but the surviving length is 36.33mm and width 20.92mm.

Assessment has so far been limited to description and measurement; full analysis and characterisation is required.

Human bone – *Natasha Dodwell*

Eight fragments of disarticulated human bone were recovered from three features on the South Plot: a small, undated pit/well (F.1000) and in both the outer and middle ditches of the triple-ditch Middle Bronze Age enclosure (F.1183 and F.1190). In addition, a single very poorly preserved skeleton, which had originally been identified in the evaluation phase (Evans and Mckay 2005) was fully excavated (F. 1225).

Methodology

The disarticulated material was examined with 10x hand magnification and recorded using the zonation method devised by Knüsel and Outrum (2004). The skeleton was analysed using standard methods for aging and sexing. Sex was determined by the diagnostic traits on the skull and pelvis (Buikstra and Ubelaker 1994, 16-20) and age by the degree of epiphyseal union, dental eruption and wear and the appearance of the auricular surface (ibid. 21- 44 and Brothwell 1981, 72 fig.3.9) The following broad age categories were used;

Young adult	18-24years
Middle adult	25-44 years
Mature adult	45yr+

Preservation of the material

The surface preservation of the disarticulated elements is generally better than the bone recovered from the North Plot (see below); grades 1-3 (McKinley 2004a). Animal puncture marks were recorded on several bones. The inhumation was extremely poorly preserved; less than 50% of the skeleton survived, and all of the elements are fragmentary with very few joint surfaces surviving. The maxilla is missing as are most of the extremities and torso.

Results

Osteological information regarding the disarticulated elements is presented in tabular form below (Table 23). All are adult or adult-sized. The duplication of elements (specifically the right femur) suggests that they represent a *minimum* of two adults (one from the undated pit/well and one from the enclosure ditches). Given the proximity of the elements within the ditch fill the possibility of them representing a disturbed burial should be considered. Animal puncture marks suggest that at least some of the elements were lying on the surface before being incorporated into the ditches.

Of particular interest is the right femur shaft recovered from the undated well/pit, F.1000. The distal end of the mid shaft has been modified – a blow/chop has been struck axially, partially splitting the shaft and the distal point of the bone appears to have small areas of polishing suggestive of use-wear. Similar modified human bones have recently been recovered from Iron Age contexts at Trumpington Meadows (Patten and Lucy forthcoming).

Feature	Context	Feature type	Element	Age	Comment	Surface preservation	Weight
1000	1500.1	Small pit/well	right mid femur shaft	adult	Butchered & possible use-wear on point. Additional fragment with fresh break	grade 2	83g
1183	1710.2	Outer of 3 ditches forming the main MBA enclosure	Fragment of frontal with partial orbit (plus other small frag of frontal) & u/s fibula shaft	adult		grade 2	19g
	1710.3		u/s tibia mid shaft	adult		grade 1	8g
	1751.1		right distal femur	adult	Animal puncture marks	grade 3	44g
	1752.3		l. proximal & mid shaft of left tibia	adult	Animal puncture marks	grade 2	115g
1190	1719.1	Middle of 3 ditches forming the main MBA enclosure	l. ulna (proximal & mid shaft)	adult		grade 2-3	5g

Table 23: Disarticulated human bone from the South Plot

The poorly preserved, articulated skeleton, F.1225, is an adult female who had been placed in the top of an in-filled terminus of the middle ditch of the triple ditched enclosure. The preservation of the skeleton meant that it was difficult to determine the true position of the body but it would seem that she was in a semi prone position with her head in the south-west; hands beside her head. When it was first identified in the evaluation it was thought to be two individuals, an adult and a child, but on further analysis it was found to be a single adult female (the 'immature' tooth that was identified with the mandible was in fact a fox/dog molar (M2) ,Vida Rajkovača pers. com). A pig's tooth, which may or may not be intrusive was recovered from the 'grave fill'.

Recommendations

It is recommended that a programme of C14 dating is undertaken; the inhumation, the modified bone and at least one fragment of disarticulated bone from the enclosure ditches should be dated. The modified femur needs to be examined under greater magnification, including SEM to confirm the use-wear patterns and attempt to determine what this 'tool' would have been used for. Similarly those bones with animal puncture marks need to be recorded in more detail. Having recorded which

zones of the disarticulated elements survive these need to be compared to the faunal disarticulated remains in order that comparisons can be made. Finally, all of the material will need to be discussed with reference to other sites in the region.

Shell – *Christopher Boulton*

All shell was quantified (fragment count) and weighed by feature. The results are shown in Table 24, below.

	Total	Weight (g)	% Total	% Weight
Oyster	2	8	1.2	6.9
Snail	159	107	98.1	93

Table 24: Shell from the South Plot

The two single fragments of oyster came from Middle Bronze Age ditch F.1088 and Middle Iron Age pit F.1100 respectively and are considered most likely to be intrusive. The majority of the assemblage was snail shell (98.1% by quantity and 93% by weight), which should be incorporated into the mollusc shell assemblage (see Fryer and Allen, below) and any necessary further analysis undertaken as part of that.

Faunal Remains – *Vida Rajkovača*

The main aim of the assessment is to establish how much data is present by phase and area, both in terms of the physical quantification of faunal data and its interpretative potential (in accordance with Historic England Animal Bone and Archaeology Guidelines for Best Practice 2014). The assemblage's research value will be viewed in the light of site-specific patterns, research questions, its cumulative value and the current state of understanding of animal-human relations during prehistory. A list of recommendations for future work will be offered at the end of the assessment.

The zooarchaeological investigation followed the system implemented by Bournemouth University with all identifiable elements recorded (NISP: Number of Identifiable Specimens) and diagnostic zoning (amended from Dobney & Reilly 1988) used to calculate MNE (Minimum Number of Elements) from which MNI (Minimum Number of Individuals) was derived. Identification of the assemblage was undertaken with the aid of Schmid (1972), and reference material from the Cambridge Archaeological Unit. Most, but not all, caprine bones are difficult to identify to species however, it was possible to identify a selective set of elements as sheep or goat from the assemblage, using the criteria of Boessneck (1969) and Halstead (Halstead et al. 2002).

Preservation was assessed on a scale of 1 to 5, with reference to Behrensmeyer (1978), where '1' denotes a bone surface with no cracking or flaking and '5' indicates that the fragment is disintegrating into splinters. Refitting fragments were counted as one specimen.

Age at death was estimated for the main species using epiphyseal fusion (Silver 1969) and mandibular tooth wear (Grant 1982, Payne 1973).

Where possible, the measurements have been taken (Von den Driesch 1976). Sexing was only undertaken for pig canines, based on the bases of their size, shape and root morphology (Schmid 1972: 80). Withers height calculations follow the conversion factors published by Von den Driesch and Boessneck 1974.

Taphonomic criteria including indications of butchery, pathology, gnawing activity and surface modifications as a result of weathering were also recorded when evident. Butchery marks were located by zone, position of the cut and direction of the mark, multiple occurrence, depth and the implement type, and the function of the mark was assessed. Undiagnostic fragments were assigned to a size category.

A small number of bones were retrieved from sieving of the environmental bulk soil samples. Small taxa were almost absent, however, and the sieved bones did not provide a great deal of additional data on the main domestic species.

Archaeological features ranging in date from the Early Neolithic through to the medieval period, dominated by settlement remains dating to the Middle Bronze Age, were revealed on the South Plot. The excavation generated a significant faunal assemblage with a raw fragment count of 13513 bones and a total weight of 140818g. This figure does not include the faunal remains recovered as heavy residues following the processing of environmental bulk soil samples. Following the zooarchaeological analysis, some 3475 assessable specimens were recorded. Of this figure, 1589 (45.7%) were possible to assign to species.

Preservation, fragmentation and taphonomy

The assemblage demonstrated an overall quite good level of preservation with a small number of specimens showing signs of severe surface exfoliation, erosion and weathering (59 fragments/ 1.6% of the assemblage). In addition to the poor surface preservation, the assemblage was heavily processed and highly fragmented with only eight complete specimens being recorded for all species. An insignificant portion of the assemblage was recorded with gnawing marks (64 specimens/ 1.8%); all were canine marks and the small percentage implies quick deposition of the material. Butchery marks were also quite rare and were recorded on 40 specimens or 1.2% of the assemblage.

Provenance, character and the chronology of the material

The bulk of the material (*c.*77% of the assemblage by NISP) came from the enclosure ditches dated to the Middle Bronze Age, with three major phases of occupation being recorded. The remainder of the assemblage was made up of Iron Age material recovered from settlement features and watering holes associated with Early Iron Age activity as well as the bone from a series of pit groups dated to the Middle Iron Age period. A series of Romano-British ditches produced small amounts of animal bone.

The material is made up largely of disarticulated remains of mainly livestock species, though there were occasional finds of articulated or semi-articulated animal skeletons.

Overall representation of species

The site assemblage is dominated by the remains of domesticates, with cattle amounting to over two thirds of the identified species count (Table 25) and most prevalent within the MNI count. Cattle-sized elements also dominated the undiagnostic count. Though seemingly a relatively varied range of species, the wild fauna only seems to have made a minor contribution to the diet and the emphasis appears to have been on domestic sources of meat.

Taxon	**NISP**	**%NISP**	**MNI**
Cow	1097	*69*	69
Sheep/ goat	286	*18*	29
Sheep	8	*0.5*	2
Goat	1	*0.06*	1
Pig	125	*7.8*	10
Horse	37	*2.3*	3
Dog	14	*1*	2
Dog/ fox	4	*0.3*	1
Cat	1	*0.06*	1
Red deer	10	*0.6*	2
Roe deer	2	*0.12*	1
Deer *sp.*	1	*0.06*	1
Fox	3	*0.2*	1
Sub-total to species	**1589**	*100*	**.**
Cattle-sized	1185	.	.
Sheep-sized	676	.	.
Rodent-sized	2	.	.
Mammal n.f.i.	23	.	.
Total	**3475**	.	.

Table 25: Number of Identified Specimens and Minimum Number of Individuals for all species from all features – South Site; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Early Neolithic

A single feature dated to the Early Neolithic (F.1096) was recorded with a single fragment of unidentifiable mammal bone.

Middle Bronze Age

The Middle Bronze Age material was the most abundant (by weight and by count, Tables 26-28) within the South Plot's faunal assemblage. This is in contrast to most Middle Bronze Age sites in the region, which with the exception of another similarly dated assemblage recovered from the immediate vicinity (Phillips and Mortimer 2012), rarely produce quantitatively significant samples.

Typical for the period, the Middle Bronze Age sub-set was dominated by the remains of livestock species, with cattle amounting to over two thirds of the sub-set (and the overall site assemblage). Other domesticates were under-represented, though wild fauna also seems to have played some part in their diet, which is also characteristic for the period. In addition to the heavy reliance on cattle, another aspect of the Middle Bronze Age sub-set in keeping with expected regional patterns for the period is the absence of bird species.

Three major phases of occupation were recorded; the early field system, producing a negligible quantity of faunal material; the second being defined by the main settlement and the third, represented by the two parallel 'late ditches', which appear to cut the enclosure ditches from the previous phase. Of the three phases, the second generated the largest amount of faunal material or 70% of the assemblage by NISP count, with the enclosure ditches being the main receptacles for bone waste.

Taxon	**NISP**	**MNI**
Cow	2	1
Sub-total to species	**2**	**.**
Sheep-sized	1	.
Total	**3**	.

Table 26: Number of Identified Specimens and Minimum Number of Individuals for all species from the MBA Phase I.

Taxon	**NISP**	**%NISP**	**MNI**
Cow	783	*68.8*	51
Sheep/ goat	192	*16.9*	23
Sheep	8	*0.7*	2
Goat	1	*0.1*	1
Pig	110	*9.6*	10
Horse	17	*1.5*	1
Dog	13	*1.1*	2
Dog/ fox	3	*0.3*	1
Cat	1	*0.1*	1
Red deer	6	*0.5*	1
Roe deer	2	*0.2*	1
Deer *sp.*	1	*0.1*	1
Fox	1	*0.1*	1
Sub-total to species	**1138**	*100*	**.**
Cattle-sized	848	.	.
Sheep-sized	433	.	.
Rodent-sized	2	.	.
Mammal n.f.i.	16	.	.
Total	**2437**	.	.

Table 27: Number of Identified Specimens and Minimum Number of Individuals for all species from the Middle Bronze Age – sub-phase II; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Taxon	NISP	%NISP	MNI
Cow	97	*74.6*	5
Sheep/ goat	22	*17*	3
Pig	5	*3.8*	1
Horse	2	*1.5*	1
Dog/ fox	1	*0.8*	1
Red deer	3	*2.3*	1
Sub-total to species	**130**	*100*	**.**
Cattle-sized	102	.	.
Sheep-sized	19	.	.
Total	**251**	.	.

Table 28: Number of Identified Specimens and Minimum Number of Individuals for all species from the Middle Bronze Age – sub-phase III.

There were two instances of articulated remains recorded in Middle Bronze Age features. Firstly, a partial skeleton of a small dog or a fox, consisting of forelimbs, mandibles and a pelvis, recovered from F.1128. Secondly, a near complete (though with fragmented limbs) cow skeleton, which was probably 2 years old at death, and with the partial remains of a foetus *in utero*, came from F.1165. The biometrical data showed the cow had a withers height of around 109cm. In addition, a near complete but disarticulated sheep skeleton was also recovered, from F.1261. Based on two complete radii, the animal appears to have had a shoulder height of around 64cm. The right distal tibia displayed a cut mark consistent with gross disarticulation or skinning.

Early Iron Age

A number of watering holes dated to the Early Iron Age produced a small amount of animal bone, with cattle by far the most prevalent species (Table 29).

Taxon	NISP	%NISP	MNI
Cow	45	*77.6*	3
Sheep/ goat	6	*10.3*	1
Pig	5	*8.6*	1
Horse	2	*3.5*	1
Sub-total to species	**58**	*100*	**.**
Cattle-sized	47	.	.
Sheep-sized	16	.	.
Total	**121**	.	.

Table 29: Number of Identified Specimens and Minimum Number of Individuals for all species from Early Iron Age contexts.

Middle Iron Age

The Middle Iron Age activity was defined by seven pit groups, one roundhouse and a swathe of scattered pits and postholes. Not all pit groups contained animal bone, and the preliminary quantification of the assemblage show that Pit Group 1 seems to have generated the largest amount of bone (almost half of the Middle Iron Age sub-set). The Middle Iron Age material showed a very similar faunal signature to that recorded for the overall assemblage (Table 30). This phase sees an increase in the importance of sheep, in keeping with expected period patterns.

Taxon	NISP	%NISP	MNI
Cow	93	*64.1*	3
Sheep/ goat	40	*27.6*	1
Horse	11	*7.6*	1
Dog	1	*0.7*	1
Sub-total to species	**145**	*100*	**.**
Cattle-sized	110	.	.
Sheep-sized	112	.	.
Mammal n.f.i.	5	.	.
Total	**372**	.	.

Table 30: Number of Identified Specimens and Minimum Number of Individuals for all species from Middle Iron Age contexts; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Romano-British

Contexts dated to the Romano-British period contained a negligible amount of bone (Table 31), none of which was possible to assign to species mainly owing to the poor state of preservation.

Taxon	NISP
Cattle-sized	2
Sheep-sized	2
Mammal n.f.i.	1
Total	**5**

Table 31: Number of Identified Specimens and Minimum Number of Individuals for all species from Roman contexts; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Undated contexts

A number of contexts remain undated and these were considered independently. If we were to look at the faunal signature as a 'dating tool', based on the important cattle component and a few wild specimens, it could be suggested that these are Middle Bronze Age in date (Table 32)

Taxon	NISP	%NISP	MNI
Cow	77	*67*	3
Sheep/ goat	26	*22.6*	1
Pig	5	*4.3*	1
Horse	4	*3.5*	1
Red deer	1	*0.9*	1
Fox	2	*1.7*	1
Sub-total to species	**115**	*100*	**.**
Cattle-sized	76	.	.
Sheep-sized	93	.	.
Total	**284**	.	.

Table 32: Number of Identified Specimens and Minimum Number of Individuals for all species from undated contexts.

Ageing, biometrical data and pathologies

Focusing on the three main livestock species, a brief look at the total of 43 records for the mandibular tooth eruption and wear indicate a clear under-representation of younger individuals. In terms of other ageable elements, large numbers of epiphyses were recovered from the main domesticates from all phases. Cattle specimens with surviving epiphyses were the most abundant (215), followed by ovicapra (34), horse (14) and pig (11). The high fragmentation recorded throughout meant that only eight measurable specimens survived. A few cases of inflammations, changes in the appearance of mental foramina on mandibles and other non-metric traits and pathological changes were recorded and these will be considered in full at a later date.

Assessment and statement of potential

Starting with the representation of species, the overall results do not show a great deal of variation between different phases of occupation, though later phases generated significantly smaller samples compared to that dated to the Middle Bronze Age. The assemblage's size in itself warrants further study, as it is evident that the material holds great potential to add to our knowledge of not just the environment and land use, but also changing economy practices and cultural preferences through time.

Focusing on the most substantial sub-set, assemblages of Middle Bronze Age date are not rare (e.g. Daniel 2009, Pickstone and Mortimer 2011, Knight and Brudenell forthcoming), though many are quantitatively insignificant or too fragmentary to be used in any studies. The most suitable comparison would be another quantitatively significant faunal assemblage recovered from the nearby Clay Farm excavations (Faine in Phillips and Mortimer 2011).

The prevalence of older individuals within the cattle cohort is a clear indication of their utilisation for secondary products. To fully understand the character of animal use during the period, detailed kill-off profiles must be built for the three main livestock species, complemented by a more in-depth study of deposition practices and butchery patterns.

The Iron Age sub-sets, although smaller in size, are still significant and could add to our understanding of the animal husbandry and economy regimes during the later prehistory in the area.

Further work

- Further specialist analyses: Faunal remains from heavy residues are to be analysed. This will be complemented by a detailed study of butchery patterns with a view to understanding the chaîne opératoire of the bone working in its entirety.

- Reporting: It is necessary to produce a full archive report including measuring and ageing datasheets, as the foundation upon which to build a publication text.

- Spatial analyses and patterns of deposition: it is recommended to invest more analytical time in a detailed study of spatial distribution of species, skeletal elements by feature type. This will not just advance our understanding of foodways, but also community practices and everyday habits or rituals.

- Radiocarbon dating: Animal bone provides ideal opportunity to date certain enclosure or pit assemblages as it can illustrate any temporal difference between certain contexts or features like pit clusters.

- Integration: Recovery of such a rich faunal record from a thoroughly investigated and a well-researched locale coupled with a good level of understanding of regional economy patterns provide an excellent opportunity to take this research to an innovative level. This can only be achieved by integrating the results from related studies of material culture and environmental data.

Environmental Bulk Samples – *Val Fryer*

A total of 99 samples were taken from features within the South Plot for the retrieval of the plant macrofossil assemblages. A total of 42 were submitted for assessment; individual samples were selected i) in order to assess all major feature types and phases and ii) if they were deemed to have particular potential (eg. the midden deposits within the Middle Bronze Age ditches). A full breakdown of the plant and mollusc remains from each sample is included in Appendix C (Tables C6-C8).

The samples were bulk floated by CAU and the flots were collected in a 300 micron mesh sieve. Sub-samples of four waterlogged/organic deposits were also processed by the author, with the flots being stored in water prior to sorting. Both dried flots and wet retents were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed in Appendix C, Tables C6-C8. Nomenclature within the tables follows Stace (2010) for the plant macrofossils and Kerney and Cameron (1979) and Macan (1977) for the mollusc shells. Most plant remains were charred, but occasional waterlogged/de-watered macrofossils were also recorded, and these are denoted within the table by a lower case 'w' suffix. Modern roots, seeds and arthropod remains were also present within a number of the assemblages.

Results

Cereals, chaff and seeds of common weeds and wetland plants are present at varying densities within all but sixteen of the assemblages studied. Preservation is very variable; some cereals/seeds are quite well preserved, whilst others are severely puffed and distorted, probably as a result of combustion at very high temperatures. Some remains are also highly comminuted and/or abraded, possibly indicating that they were exposed to the elements for some considerable period prior to incorporation within the feature fills.

Oat (Avena sp.), barley (Hordeum sp.) and wheat (Triticum sp.) grains are recorded within fifteen assemblages, with further grains, which are too poorly preserved for close identification, also being noted. Overall, wheat occurs marginally more frequently that barley. Of the wheat grains, most are of an elongated 'drop' form typical of emmer (T. dicoccum) or spelt (*T. spelta*), although occasional rounded specimens of probable bread wheat (*T. aestivum/compactum*) type are also noted. Chaff is scarce, but occasional spelt wheat (T. spelta) glume bases are recorded.

Charred seeds of common segetal weeds and grassland herbs are recorded at a low to moderate density within sixteen assemblages. Taxa noted include brome (Bromus sp.), fat hen (Chenopodium album), small legumes (Fabaceae), black bindweed (Fallopia convolvulus), fumitory (Fumaria officinalis), corn gromwell (Lithospermum arvense), poppy (Papaver sp.), grasses (Poaceae) and dock (Rumex sp.). Charred onion couch (Arrhenatherum sp.) type tubers are also recorded. Individual nutlets of sedge (Carex sp.), a common wetland plant, are present within seven assemblages from the southern area and a single fragment of hazel (Corylus avellana) nutshell is also recorded. Charcoal/charred wood fragments are present throughout, occurring at the highest density within the middle ditches of Middle Bronze Age Enclosure A.

The fragments of black porous and tarry material, which are recorded within a number of assemblages, are mostly thought to be residues of the combustion of organic remains (including cereal grains) at very high temperatures. Other remains are scarce, but do include fragments of bone (some of which are burnt) and small pieces of coal (coal 'dust'). It is thought most likely that the latter are intrusive and probably derived from either the spreading of night soil during the later medieval or post-medieval periods or the use of steam implements on the land during the early modern era.

Shells of terrestrial and freshwater obligate molluscs are present throughout at varying densities. As some retain both good coloration and delicate surface structuring, it is currently unclear how many may be contemporary with the features from which the samples were taken. All four of Evans (1972) ecological groups of terrestrial species are represented, and occasional shells of freshwater obligate species are present with ditch F.1183 (sample 260) and water hole F.1029 (samples 209 and 281). Open country species are generally predominant, although woodland/shade loving species are common within the outer ditches of Middle Bronze Age Enclosure 1.

Middle Bronze Age Enclosure A (Table C6)
Sixteen samples were taken from fills within the inner, middle and outer ditches of Enclosure 1. With the exception of charcoal/charred wood fragments and occasional cereal grains, plant macrofossils are only present within the middle ditch fills, most particularly from features F.1210 (samples 242 and 289) and F.1217 (sample 245). The composition of the assemblages appears to indicate that the remains may be largely derived from domestic hearth/midden refuse including cereals (some possibly accidentally charred during culinary preparation), tinder/kindling and burnt bedding or thatch. Although the contemporaneity of the recovered mollusc assemblage is currently unproven, it is noted that the outer ditch fills nearly all contain specimens of woodland/shade loving species along with numerous shells of *Vallonia* sp., which is mostly commonly found within short-turfed open grassland. It would, therefore, appear that the enclosure was largely grassed, with the outer ditches at some point being overgrown, partially shaded or partly filled with leaf litter.

Other Middle Bronze Age features (Table C7)
Thirteen samples are from the fills of the ditches of enclosures B and C, from other ditches and from grave F.1225. Although cereals, chaff, seeds and charcoal/charred wood fragments are present within most assemblages, the density of material recorded is generally very low, possibly indicating that the remains are largely derived from scattered refuse or midden waste. However, it is noted that three of the five enclosure ditch assemblages include burnt mollusc shells. The reason for this is currently unclear, although all could be derived from the accidental or deliberate burning of grass or hay.

Iron Age features (Table C8)
Samples were taken from three wells/water holes of Early Iron Age date, from Middle Iron Age pits, ditches and post-holes and from two post holes of either Bronze Age or Iron Age date. Although occasional cereals, chaff elements and seeds are recorded, the assemblages are generally sparse, and the few remains which are present are quite fragmentary and abraded. It would, therefore, appear most likely that these remains are again derived from scattered refuse, much of which was probably accidentally incorporated within the feature fills. The presence of marsh and freshwater snails within waterhole F.1029 (samples 20 and 281) may indicate that this feature was at least semi-permanently water filled, whilst waterhole F.1056 (sample 284) and well F.1308 (sample 279) may only have been seasonally wet. Burnt shells of grassland molluscs are again recorded from three of the Middle Iron Age pit fills and from ring gully F.1338 (sample 293).

Conclusion and Recommendations

The assemblages from this excavation are almost invariably small (i.e. <0.1 litres in volume), and it is rarely possible to identify specific activities which may have been occurring on or near the site during the Bronze Age, Iron Age.

Much of the Bronze Age activity appears to have been centred around the middle ditches of Enclosure A. Why this should be is currently unclear, but as the assemblages appear to be largely domestic in nature, it is suggested that this may have been a particular focus of habitation.

The Iron Age assemblages are generally sparse, and there is insufficient material to indicate any specific aspect of everyday life. However, it is noted that cereal chaff is especially scarce, possibly suggesting that the occupants of the site were operating within a largely pastoral economy, with the bulk of their day to day cereal requirements being met by processed grain imported from areas which were more conducive to agriculture. Similar patterns have been noted from other contemporary sites situated on poor soils, including the heavy clay of Stansted, Essex (Murphy 1990) and the light sands of Fison Way, Thetford (Murphy 1992).

None of the assemblages contain a sufficient density of material for quantification (i.e. 100+ specimens) and no further work on the plant macro remains is recommended at this stage.

Palaeo-Environmental and Geoarchaeological Assessment – *Mike Allen*

The South Plot was visited on 13th October 2014 with a view to define specific palaeo-environmental or geoarchaeological requirements. Key features and deposits

were characterised and sampling strategies discussed. Key deposits of the triple-ditch enclosure were sampled for pollen, geoarchaeology, snails, and soil micromorphology

Site overview

The site is located on heavily weathered West Melbury Marly Chalk Formation with relict and remnant thin superficial deposits of Terrace gravels comprising small and medium flints. In terms of the palaeo-environment the site is considered a challenge as the calcareous ditch fills are unlikely to contain pollen, while the majority of deposits do not seem on visual inspection to contain molluscs. The only shells noticed, and reported by the excavators, were the large and robust species Cepaea which was present in a few of the MBA enclosure ditches (especially towards the top). Two spot samples of 1.5kg and one of nearly 1kg (from the calcareous wash 1779.07) at the base and one from the primary fills (1779.05/1779.04) of the middle MBA ditch 1779, and one from the main/secondary fills (1683.03) of the inner ditch 1683, were rapidly processed. None contained more than 3 apices in the flot. One further sample, too small of statistically viable analysis (485g) was taken scraped up from several the fills of the outer ditch – this contained 87 shells indicating presence and preservation suitable for full analysis when appropriately sized samples are taken; Full processing details and precise results will be given in the full mollusc assessment (see sampling required below).

Colluvial architecture

No Bronze Age or Iron Age colluvium had been identified, suggesting that despite the prevalent evidence for human activity in these periods, the area surround the shallow rise (hilltop), and the MBA enclosure, was under stable land-use in contrast to that of ensuing periods. This provides some hints at the nature of the land-use prior to and during the MBA – IA occupation.

Shallow footslope colluvium was present overlying Iron Age features in the south of the site, this may relate to Romano-British activity (such as that seen on the North Plot), and/or medieval periods. The examination of the relationship with the colluvium here, and the in the archive of the CBC Boulevard Site (Newman *et al.*2010) may define this and enable simple models of the development of the land-use to be proposed.

Iron Age watering hole

One Iron Age watering hole profile was described to characterise the soil development seen within this, as opposed to colluvial or dumped ditch fills elsewhere. The blocky structure here suggests *in situ* soil development and the possibility of humic vegetation rich infilling this feature.

Middle Bronze Age triple-ditch enclosure

During the examination of a number of profiles a number of basic observations were made:

- The 'midden/occupation' deposits were most prevalent in the north-west corner; corners and entrances of such enclosures often being the loci of more pronounced artefact deposition

- Examination of the 'midden/occupation' deposits suggest that these were probably dumped.

- No obvious chronological sequence of the ditches had been discerned but the 'midden/occupation' deposits were always deeper and common in the middle ditch – with none in the outer and some, occasionally, in the inner. This may imply that either the inner ditch was not present when this was dumped or that the inner ditch was completely infilled and could be readily crossed to dump material in the larger, less-infilled middle ditch

- Within the described contexts, there were clear examples of a) side collapse, and b) bank collapse. In one a soil wash from the bank interrupted the secondary infilling, and was superseded by a later bank wash resembling the parent material (natural), indicating the successive failure of the bank with the contemporaneous soil over the bank, then the bank material eroding was clear.

Three adjacent profiles were examined, described and sampled: outer, ditches F.1751; middle ditch F.1779 and inner ditch F.1683.

Sampling undertaken

The midden/occupation deposits in the middle ditch (1779 (S792) we sampled

i) M1: a 50cm long monolith from 1cm to 51cm from the top of the ditch encompassing most of the fill, and facilitating; pollen subsampling, more detailed geoarchaeological description, and subsampling for snails if appropriate

ii) K1, K2 and K3; three kubiena tins adjacent to M1 for consideration for soil micromorphology with the top of the 12cm x 8cm tins being at 10cm, 20cm and 34cm from the top of the section.

iii) spot samples for land snails from the from the calcareous wash (1779.07) at the base and one from the primary fills (1779.05/1779.04) of the middle MBA ditch 1779, and a one from the main/secondary fills (1683.03) of the inner ditch 1683.

iv) Contrary to the middle and inner ditch profiles, the outer ditch clearly contained shells; not just the large robust Cepaea species, but many specimens of Trochulus cf. hispidus and also Oxychilus. These were present particularly in the upper portion of the upper fill, but also within the main fills. Sampling from the outer ditch was undertaken as a column of contiguous bulk samples

Bulk sampling strategy and research objectives

With regard to the midden/occupation deposits; it would be useful to examine the spatial distribution of finds around the circuits within each of the ditches and this can be done through the recovered artefact assemblages. It would also be extremely useful to examine the distribution of charred plants and their varying components (charcoal; caryopses, chaff, weed seeds etc.) as defined for the assemblages.

A series of questions regarding the deposits from the MBA enclosure ditches can also be addressed by geoarchaeological description (GD), soil micromorphology (SM), land snail (LS) and pollen analysis (PA).

Midden/occupation deposits

- Is this a single dump or accumulatory fill (GD, SM)
- What does the deposit represent (SM, PA)
- What activities do the deposits represent –stratification, in situ mineralisation, stabling, animal trampling, animal defecation and urination, etc, (SM)
- What was the land-use and local lived-in environment while this accumulated (SM, PS and LS)

Ditch deposits and MBA enclosure

- What is the land-use history of the MBA enclosure (LS, PS)
- Is there evidence of any hiatus or cessation in occupation activity (LS)
- What is the local lived-in land-use of the enclosure (LS, PA)
- What is the widen setting of the enclosure (PA)
- Does the midden represent a significant change in local activities, or local land-use/economy (LS with PA and SM)

Future work

- full profiles as recorded in the field should be logged (ie 3 x middle Bronze Age ditch, 1x colluvium and 1 x water hollow), and the monolith (M1) through the midden/occupation deposits be examined in the lab and described to augment field descriptions
- the monolith (M1) should be subsampled for pollen
- full reporting of the site visit (including model of the colluvial architecture)
- if appropriate soil thin sections should be manufactured in readiness for the soil micromorphology analysis
- pollen assessment

SPECIALIST STUDIES: NORTH PLOT

Flint – *Emma Beadsmoore*

A total of 92 (≥742g) flints were recovered from the North Plot; 41 (≥196g) were unburnt and worked, 3 (20g) burnt and worked, whilst 48 (526g) were just burnt. The flints are listed by type and feature in Table 33.

	Type											
Feature	primary flake	secondary flake	tertiary flake	tertiary blade	core fragment	core rejuvenation flake	miscellaneous retouched blade	laurel leaf	chip	chunk	unworked burnt chunk/chip	**Totals**
1523									2			2
1528		1		1								2
1547		3										3
1649											2	2
1658		1									1	2
1659		1				2		1	2			6
1675	2											2
1762		3	1								4	8
1768											5	5
1782			1									1
1785		2										2
1825											11	11
1886											1	1
1925	2	2							10		2	16
1964											8	8
2011				2							2	4
2073		1										1
2216											3	3
2242											2	2
2270							1					1
2271											2	2
2272											2	2
2273											1	1
2277										2		2
2303		2										2
layer					1							1
Sub totals	**4**	16	2	3	1	2	1	1	14	2	46	92

Table 33: Flints listed by features and type

The assemblage recovered from the North Plot largely comprises flint working waste, with just a couple of tools. As with the South Plot, datable flint ranges in date from the Late Mesolithic/Early Neolithic to the later prehistoric period, although much of the material was chronologically non-diagnostic. Narrow flakes and blades – the products of systematic flake/blade production/core reduction strategies prevalent during the Late Mesolithic/Early Neolithic and Neolithic periods – provide evidence for activity predating the cut features at the site. A laurel leaf, broadly dated to the Neolithic was also recovered. All of the early material was residual in later features.

No further work is required on the limited, residual flint assemblage, the majority of which is chronologically non-diagnostic.

Roman Pottery – *Rob Perrin*

The excavation produced a large assemblage of over 5000 sherds, weighing nearly 80 kilos. The pottery was quantified by sherd number and weight per fabric; individual vessel forms were also recorded, based primarily on rims, but including other diagnostic sherds, providing a count of the minimum number of vessels.

Feature	Type	NoSh	Wt(g)
1512	ditch	10	420
1524	ditch	30	385
1526	ditch	17	541
1551	ditch	52	838
1568	ditch	17	474
1568/1631	ditch	21	640
1617	ditch	75	1229
1624	ditch	39	409
1631	ditch	30	743
1669	ditch	30	498
1814	ditch	52	1735
1886	ditch	24	1003
1969	ditch	27	771
2005	ditch	74	871
2073	ditch	52	1163
2216	ditch	42	761
1541	ditch/gully	55	945
1504	pit	186	4078
1582	pit	79	1077
1598	pit	24	432
1613	pit	360	8395
1649	pit	24	594
1698	pit	69	1370
1768	pit	53	516
1792	pit	90	1987
1966	pit	72	1200
1986	pit	40	1221
2083	pit	32	2213
1915	pit?	32	965
2298	cremation	297	1483
2271	uncertain	90	1039

Table 34: Features with substantial Roman pottery assemblages

Most of the pottery is broken but some complete or near complete vessels occur. The pottery comes from 726 different features, of which 353 are ditches, 232 pits, 33 postholes, nine pits or wells, eight spreads and three cremations. Most of the deposits contained just a few sherds, with only 10 having assemblages weighing between 500gms and a kilo and 14 having assemblages weighing over 1 kilo. Table 34 lists the features with the most pottery; a full list is given in Appendix D (Table D1).

The site is divided into two areas, north and south. Only eight sherds weighing 28 grams were recovered from two ditches (1061, 1277) in the southern area. Six of these sherds are from a jar in the CSOX fabric, one from a jar with horizontal rilling in the CSRDU fabric and one in a grog-tempered fabric (see below).

Fabrics

The fabrics were recorded following the coding used for recent Cambridge excavations (Anderson 2014), with certain amendments. Some 46 different fabrics were identified based on inclusions, source, colour, texture and surface treatment. Table 35 gives the main fabrics and their percentages of the total assemblage. Other significant fabrics represented by only a few sherds include flint-tempered, organic-tempered, shell-gritted, Oxfordshire, Cologne and Colchester colour-coated and black-burnished ware categories 1 and 2. A full list of the fabrics is given in Appendix D (Table D2)

Fabric	Description	NoSh	%	Wt(g)	%
BLKSL	Black-slipped	270	5.3	4211	5.3
CSGW	Coarse sandy grey	1460	28.7	18913	23.8
CSRDU	Coarse sandy reduced	554	10.9	7188	9
FSGW	Fine sandy grey	169	3.3	2661	3.3
CSOX	Coarse sandy oxidised	542	10.6	4566	5.7
FSOX	Fine sandy oxidised	171	3.4	1126	1.4
HORNGW	Horningsea grey	266	5.2	13582	17.1
HORNOX	Horningsea oxidised	211	4.1	5975	7.5
HADOX	Hadham oxidised	97	1.9	1613	2
NVCC	Lower Nene Valley colour-coated	240	4.7	2715	3.4
NVWW	Lower Nene Valley white	33		1355	1.7
VERWW	Verulamium white	84	1.7	1607	2
BUFF	Buff oxidised	201	4	1448	1.8
COL?VER?	Colchester?Verulamium?	3		825	1
SHELL	Shell-gritted	390	7.7	5872	7.4
Samian	Gaulish/Rhineland samian ware	137	2.7	1662	2.1
Total site		**5092**		**79570**	

Table 35: Pottery fabrics

Most of the pottery occurs in various quartz sand tempered fabrics fired under either reducing or oxidising conditions to give a range of different grey (eg CSGW, CSRDU) or white/buff/reddish yellow pottery (eg BUFF, CSOX), respectively. The quantity of sand affects the texture of the pottery with some being coarser (eg CSGW, CSOX) and some finer (FSGW, FSOX). Some pottery has a grey surface over an

oxidised core and this surface can be easily eroded by soil conditions leaving the core exposed and thus making certain fabric identification difficult. A white or, more commonly, a black slip (BLKSL) occurs on some of the pottery. The CSRDU fabric category is reserved for darker uniform grey wares, which can vary in roughness and there is another generally less sandy or rough textured grey ware which has a uniform grey colour.

Most of the pottery is likely to have been produced locally. Numerous pottery production sites are known in the vicinity of Cambridge, including Addenbrookes (Hutchison site), Cherry Hinton, Jesus Lane, Arbury Road, Milton, Harston, Horningsea and Teversham and slightly further afield at Godmanchester and Willingham. Regionally-traded wares comprise Lower Nene Valley colour-coated, grey and oxidised wares (NVCC, NVGW, NVWW), Oxfordshire colour-coated and oxidised wares (OXFRS, OXCC, OXOX, OXWW), Hadham reduced and oxidised wares (HADOX, HADRDU, HADBB), Dorset black-burnished ware category 1 (BB1), and Thames Estuary black-burnished ware category 2 (BB2), Colchester colour-coated and oxidised wares (COL, COLCC), Verulamium oxidised ware (VERWW) and, possibly, Wattisfield micaceous ware. Some later shell-gritted ware is likely to have been produced in the kilns at Harrold in Bedfordshire. Continental imports comprise Cologne colour-coated ware (KOLN), Spanish (BAET) and Gaulish amphorae and samian ware from South and Central Gaul (SGS, CGS) and Rheinzabern in Germany. One or two buff wares may also be continental imports.

The Horningsea fabrics (HORNGW and HORNOX) are reserved for certain jar forms, particularly large storage jars with splayed rims and combed decoration, though the fabric is similar to much of the other coarse sandy ware. The Godmanchester fabrics include one which is similar to both Verulamium and Oxfordshire white wares and, similarly, a reddish yellow to light red fabric may be the product of the Oxfordshire, Hadham (HADOX) or Harston kilns, all of which produced a similar ware.

Forms

A minimum of 593 vessels were recorded occurring as 12 different vessel types. Most are jars and other types represented are bowls, dishes, beakers, cups, flagons, mixing bowls, amphora, lids, a flask, 'Castor' boxes and colanders or strainers. Table 35 gives the number of main vessel types by the main fabrics. Appendix D (Table D3) has a full list of the forms recorded.

A full range of jar sizes is represented from small to large storage-type. There is also a wide range of rim types in the jars, including lid-seated and narrow-mouthed. The bowl forms include wide-mouthed, carinated, flanged and bead rimmed, together with samian ware (Dragendorff-Dr) forms 30, 37 and 38. The dishes mainly have plain or triangular rims as well as samian ware forms 15/17, 18. 18/31, 31, 36, 79 and Rheinzabern Sb. The cups only occur in samian ware, in forms 27, 33, 46 and Walters 81. The beakers include vessels with cornice rims and indented types while the flagons include ring-necked, bead-rimmed, groove-rimmed and flanged rim vessels; one unusual flagon is extremely large and is more amphora-sized. The mortaria are mostly varieties of bead and flanged-rim types but there are also some wall-sided

vessels. The miscellaneous vessels are amphora, lids, a flask, 'Castor' boxes and colanders or strainers, and those for which the type is uncertain.

Fabric/Form	J	B	B/D	D	C	BKR	F	M	Misc	Total
BLKSL	29	3	3	7					1	**43**
CSGW	88	17	5	8					4	**122**
CSRDU	47	3	2	17					2	**71**
FSGW	12	6	2	5		1				**26**
CSOX	23	3	1	3			6	1	1	**38**
FSOX	8	1	1				1		1	**12**
HORNGW	16									**16**
HORNOX	14									**14**
HADOX	13	4		1			1		2	**21**
NVCC	3	10	1	8		16	1		12	**51**
NVWW								20		**20**
VERWW	3	1					2	3	2	**11**
BUFF	1	4				1	12		2	**20**
COL?VER?								2		**2**
SHELL	28	5		1						**34**
Samian		11	4	27	13					**55**
Total site	**294**	**74**	**22**	**82**	**13**	**22**	**26**	**30**	**11**	**593**

Table 35: Pottery forms (KEY: J=Jar; B=Bowl; D=Dish; C=Cup; BKR=Beaker; F=Flagon; M=Mortarium; Misc= Miscellaneous)

The combing that occurs on most of the Horningsea vessels has already been noted, but horizontal rilling and combing in differing form and depth occurs on many other jars and on one flanged bowl. Cordons and grooves are present on many jars, occurring on the neck, shoulder or girth. A jar or bowl in flint-gritted ware has impressed indentations around the rim. A few jars, bowls and dishes have burnished surfaces. The burnishing on some of the bowls and dishes is facetted, similar to that found on BB1 vessels. One of the burnished jars also has a panel of barbotine dots and another grey ware jar has stamped horizontal chevrons. A grey ware, probably Hadham, bowl has incised diagonal lines and stamped dimples; dimples are also present on a reddish-yellow ware jar, possibly also Hadham ware. Some of the beakers have rouletted or roughcast decoration, one has overslip white painted decoration and another barbotine scale decoration. Jars, bowls and dishes and a colander occur in the black-slipped ware, while the occasional bowl, dish and jar in CSGW, bowl, flagon and jar in CSOX, and dish in FSOX is also slipped. Six of the samian ware vessels are stamped while three others have some moulded decoration.

Date

The Roman assemblage spans the whole Roman period from the mid-1st to later 4th centuries. The earliest pottery, however, is the flint-gritted ware which is probably of early-to-mid Iron Age date and the few sherds with an organic temper may be of similar date. The grog-tempered ware is likely to be of late Iron Age to 1st century date. The samian ware includes vessels which are of mid to late 1st century date and some similarly-dated forms also occur among some of the other wares. The Verulamium region products are likely to date to the late 1st-2nd century as are the flagons in the other buff and white wares, and the amphora. A lot of the samian ware belongs to the 2nd century with some perhaps dating into the 3rd century. The

Cologne and Colchester colour-coated wares date to the 2nd century and the BB2 is probably of later 2nd t3rd century date. The Nene Valley mortaria are of 3rd and 4th century date while much of the other NVCC can be dated to the 4th century, with some belonging to the 3rd century. The possible Hadham, Oxfordshire or Harston products are also 4th century, as are the Harrold shell-gritted ware vessels and the BB1. The locally-made wares are less easy to closely date, with most of the fabrics continuing in production from the later 1st-4th centuries.

The Samian Ware (by J. M. Mills)

The small collection of samian from the site comprises sherds from the main production areas of South, Central and East Gaul. Most of the samian is in very good condition. A few sherds have been burnt, presumably after deposition, and only three (from F.1895, F.1969 and F.2270) have noteworthy signs of post depositional abrasion. Two South Gaulish sherds (from F.F.2180 and F.2242) appear to have been glued – there are traces of a thick, tar-like substance on the breaks which may be (birch bark) glue (see Brown and Seager Smith 2012). No drilled holes or cut slots for 'riveted' repairs were recorded on any vessels. Sherds with use-wear were recorded, three with internal wear (from F.2005, F.1815 and F.1504), and one with wear under the foot (from F.1692), probably indicative of the vessel having been cut down and turned over for re-use. A scratch on the underside of one piece (from F.1642) may be all that remains of a graffito. The mean sherd weight of c.12g suggests that there has been some denudation of sherd size, although some of the larger pieces seem to have many fresh breaks, so it may be that excavation breakage has reduced the sherd size in some cases. There are a handful of vessels which survive as substantial portions, of these four are from pit F.1504 (see below).

The sherds from South Gaulish vessels are 1st century in date. The earliest, a Dr 15/17 dish (from F.1701) and a 27g cup (from F.1975) could be Neronian, or more likely early Flavian. The other eight vessels all appear to be Flavian, one Dr 18 [2690] has a stamp. A large section of a Dr 46 cup comes from a pit F.1504 along with two other examples of the form, a Walter's 81 cup, and two dishes. One of the Dr 46 cups has a very fine fabric which is either a Les Martres or a late 1st century La Graufesenque product: it is not always easy to assign this fabric to a production site. The interior is heavily worn around the edge of the base, and the wall may have been cut down after the rim broke. The other four vessels are from Lezoux; the Walter's 81 cup was certainly made at Les Martres (Romeuf, 1986, fig.7, top row second from left, but there labelled as Dr 38) and is a Trajanic introduction, the sloppy finish on the rim would not be out of place on a Les Martres product, but the fabric is definitely Lezoux. The group is slightly unusual with four cups, none of which are the more common forms (Dr 27 and 33) and one or two of which are clearly older than the other vessels.

The collection is dominated by samian from Lezoux; Hadrianic- early Antonine forms are more common than mid-late Antione vessels. The earlier material includes the few decorated Dr 37 vessels, form 27 cups, and the Dr 18/31 and 18/31R dishes; the two cups and two of the dishes are stamped. The Dr 27 cups both have very flat profiles indicating they are late examples of the form which ceased to be produced around AD160. The later wares include a stamped Dr 31 and two Walters 79 platters but

there are no other characteristically late forms such as mortaria, and no decorated bowls. There is a scrap from a Dr 30 but this is not datable and from its size and fabric alone I would not think that it was late Antonine. These later vessels are probably contemporary with the three vessels for East Gaulish samian, all from Rheinzabern and possibly all Antonine rather than later; they may go into the early 3rd century, but not necessarily.

No Les Martres products were definitely identified, but usually only about 10% of an assemblage will be from Les Martres and it is often not present in small groups. The main period of export to Britain was the first quarter of the 2nd century. Its absence however should not be taken to assume a hiatus in activity.

Assessment of potential

The wide range of sources, vessel types and dates will allow the nature of the occupation on the site through time to be investigated and to be compared to those from other Cambridge sites, thus adding considerably to the existing knowledge of Roman Cambridge and of its pottery supply. In addition, there are a number of substantial groups which would warrant more detailed study. Further research should allow a better understanding of which wares are the products of the known local kilns and help to identify the sources of some of the other non-local pottery.

Recommendations for further work

- Add the measurement of rim estimated vessel equivalent (EVE) for all substantial groups so as to provide data for assemblage comparison.
- Study the substantial group assemblages in more detail.
- Undertake specialist examination of the stamped and decorated samian ware sherds.
- Research into the sources of the non-local wares and forms.
- Attempt to identify the pottery from local sources in more detail.
- Select material for illustration.

Worked Stone and Building Stone – *Simon Timberlake*

A total of 82.4 kg of worked stone was recovered from the excavation of the north site, 82.25kg of which consisted of rotary quern (handmill) and 48.35 kg of millstone. In addition to this some three items of building stone (12.8 kg) were recognised, amongst which was the possible pedestal support moulding for a column (see Appendix D, Table D5).

This Romano-British 'domestic settlement type' assemblage of quern came from 15 different features, whilst a number of the larger millstones were collected as unstratified or surface finds. Old Red Sandstone (ORS) and Millstone Grit dominates this alongside imported lava quern from Mayen, Germany; together they provide a fair indication of date (i.e. 1st-2nd century AD for the Millstone Grit hand quern, grooved ORS types and German lava quern, but later for the millstones (Green (in prep.); Shaffrey 2006, 34)) as well as proximity/ connection to known trading networks. The abundance of millstones compared to handmills at this site is perhaps unusual, attesting to the overall organisational structure of this settlement, or possibly even its later date (later 1st-4th centuries AD), particularly when we compare this to the Hutchinson site (see Evans et al. 2008).

The typology of the generally flat-topped ORS querns from SW England and more abundant Southern Pennine Millstone Grit types has been included within the full catalogue (Appendix D, Table D4), but this will only be fully discussed and analysed at the post-excavation stage. However, a brief summary table quantifying this quern can be seen below (Table 36).

Rock type	Beehive	Flat-topped hand mill	Millstone	Total weight (kg)
ORS	1	5		21.92
Millstone Grit		9	5	53.64
Mayen lava		5		7.11
puddingstone	1			2.19

Table 36: Roman quern numbers and type

A single well-used whetstone or honestone weighing 174g and made from a dark Palaeozoic limestone was recovered from F.1919. It seems likely this could be provenanced to known lithological types then in use and traded in Roman Britain (see Allen 2015).

The worked stone assemblage has been assessed and characterised at this stage, and will require further analysis and description, photography, and the recommended drawing of a minimum of four selected finds for the purposes of publication.

Minimal further work will be required on the building stone although it would be useful to re-examine the stone against that of a local reference collection for confirming a likely source for the Lincolnshire Limestone pedestal, which should also be drawn.

Burnt Stone – *Simon Timberlake*

A total of 24.43kg of burnt stone (94 pieces) was collected from 36 different features, the largest amount from any one feature being 3.6kg, most consisted of large, slightly burnt cobbles, many of which show little sign of having been used as potboilers.

It is possible that some of this material made up the hearth surrounds, which is what might be expected in this Romano-British settlement context, but equally some of this

might be of re-deposited prehistoric burnt stone, such as that found on the South Plot. The lithology of the pebble/cobbles fairly closely reflects the stone glacial erratic content of the gravels, though the absence of flint suggests some selection, supporting the notion perhaps of this being re-deposited burnt stone. A full catalogue of the burnt stone is included in Appendix D (Table D6).

No further work is recommended on the burnt stone assemblage.

Slag – *Simon Timberlake*

A total of 950g (29 pieces) of slag and metalworking debris were recovered from this site, the great majority of which consisted of iron smithing slag (i.e. 26 fragments (840g)), with just two fragments of crucible and a vitrified pebble stone lid which may possibly have been linked to copper-alloy (bronze melting) metallurgy. However, the latter (crucible) fragments from F.1792 and F.2057 showed no visible indications of copper, and chemical analysis, perhaps using portable X-ray fluorescence (PXRF) would be needed to confirm this. The iron smithing debris seems to be fairly typical of secondary iron smithing activity, consisting as it does of small smithing hearth bases (SHBs) with accreted clay vitrified hearth lining (VHL) and slag smithing lumps (SSL). This association of iron smithing waste and much rarer traces of non-ferrous crucible metallurgy seems to typical of Romano-British settlements with evidence for minor metalworking, the forges (smithies) also being the workshops for the melting and casting of bronze and lead. Some 88g of natural iron concretion from this excavation would appear to be unconnected to metallurgy, there being no evidence for iron smelting or production. A full catalogue of the slag and metalworking debris is included in Appendix D (Table D7).

Prior to the publication it is recommended that the few crucible sherds and lid are tested for copper/ tin/zinc/lead contamination using a PXRF. The thick crucible rim (<2486> F.1792) should also be drawn in preparation for this.

Burnt, worked and vitrified clay – *Simon Timberlake*

Some 474g of material labelled as 'burnt clay' was recovered from this site. In addition 12g of vitrified clay (originally labelled as 'slag') probably had a similar origin. Vitrified clay in this instance appears to be the product of the high temperature fusing of daub with 'fuel ash' formed as a result of the intentional or accidental burning of thatch-roofed wood and daub structures (Bayley *et. al* 2001, 21), most likely dwellings or granaries. Thus the total amount of burnt and worked clay recovered was probably around 486g (27 pieces). A full catalogue of material is included in Appendix D (Tables D8-D19). The assemblage includes a small amount of worked clay; in this case the broken-off corner of a triangular (Romano-British or Late Iron Age?) loomweight (<2317> from F.1686) weighing some 138g, and another unidentifiable fragment of worked clay or daub (22g) from F.1841. Possibly 200g or more of the burnt clay pieces recovered were fragments of daub wall surface(s) from structures, perhaps buildings. The dominant fabric(s) encountered (Types 1 and 2, see Appendix D, Table D10) suggests the use of locally-sourced marl-rich silty clays collected from the sands and gravels close to the chalk.

The assemblage has been fully assessed and characterised, and requires little in the way of further work.

Metalwork – *Grahame Appleby*

A total of 322 pieces of metalwork, weighing 5437g, were recovered from archaeological features and as surface finds. The assemblage consists of 22 pieces of copper alloy (68g), 281 iron objects (3790g) and 28 lead items (1579g). Slightly over half of the iron by number (153 pieces, 56%), but only a third of the assemblage's weight (610g, 38.6%) was recovered from four inhumations, principally consisting of coffins nails and 20 hobnails. Recommendations for illustration or further work are given in bold after each catalogue entry.

Copper Alloy

<3386> F.1508 [2208.02]. Fragment of circular cross-sectioned copper alloy rod or bar, bent, indicating this piece is from a ring or bracelet. Length 13.9mm, weight 1g. Prehistoric or Roman.

<3390> F.1659 [2380.01]. Reasonably well preserved copper alloy pin or nail with a round head and broken shaft. The head is slightly domed on one side and the lateral edge may possess circumferential grooves. If correct, the identification of this piece as a pin is more likely. Length 14.5mm, weight <1g.

<3438> SF202. Well preserved copper alloy thin decorative strip. The decoration consists of a hachuring along the edges and a medial band of narrow parallel 'bars'. The wider end of the strip also possesses a transverse decorated band using the same style. Both ends of the strip appear to be rounded, but the decorative scheme and the narrower end appears to end abruptly, suggesting this piece was once much larger. This piece is probably a fragment from a recycled decorative appliqué. Length 41mm, weight 2g. **Illustrate**

<3469> SF233. Corroded and broken copper alloy object consisting of a flat circular central area from which two arms project. These projections and the central area possess a vertical surface/plane on each side (absent from one due to corrosion), the edge of which is rolled. This piece may be part of a lock, but it currently remains unidentified. Length 42.4mm, weight 4g.

<3501> SF267. Three fragments from a cable bracelet made from coiling together two strands of copper alloy wire. These are relatively common objects dating primarily from the 3rd century onwards, although an earlier date is possible (Crummy 1983, 38). Weight 3g.

<3503> SF269. Plain copper alloy ring with d-shaped cross-section, unequal thickness and possible evidence of wear on both inside surfaces. The ring is oval in shape, creating a 'long' axis and on which the possible wear is found. Probable harness fitting. Internal maximum width 19.2mm, minimum 16.2mm, maximum external width 23.4mm, minimum 21.9mm, weight 5g. Prehistoric or Roman.

<3518> SF284. Well preserved broken circular cross-sectioned plain copper alloy bracelet; diameter 47.1mm, tapering from a maximum thickness of 4.2mm to 3.5mm, weight 9g. 2nd – 4th century.

<3520> SF286. Well preserved Late Roman military D-shaped belt buckle decorated with parallel ridges, similar to Hawkes and Dunning Type 1a (1961); weight 7g. Originating in the 4th century, these buckles are often associated with the military and persist into the post-Roman and early Anglo-Saxon periods. **Illustrate**

<3539> SF305. Fragment of copper alloy sheet with a ring-dot impression and concentric circles for decoration. Identifying this piece is problematic due to its fragmentary nature, but a decorative appliqué or even belt fitting are distinct possibilities. Weight 1g.

<3554> F.1613 [2312.03] SF321. Very corroded and fragmentary piece of copper alloy sheet with no obvious decoration or attachment points. The sheet is relatively thick and may be from a belt-plate, vessel or other unknown object. Weight 3g.

<3571> F.1701 [2728.01]. SF342.Small strap D-shaped buckle with folded and riveted hinge strap plate; the D-shaped buckle has become detached, although the tongue is still attached and the plate is fragmented. The strap plate has a central rivet, one side possesses decorative lugs and each end is hinged. Length 16.1mm, weight 4g. Used to secure *lorica segmentata*, these fittings are 'often found on British sites from the 1st century…' (Bishop & Coulston 2006, 95 & Figure 56; cf. Webster 2002 Fig. 4.10). **Illustrate**

Iron

The ironwork assemblage consists of numerous fragments of sheet/strip, lumps and bracket fragments and is largely non-diagnostic in nature. These items are retained in the archive but are not described further. The assemblage also includes at least 56 nails and nail fragments, with complete nails ranging in size between *c*. 24 to *c*. 85mm. The nails are all handmade and display a variety of head sizes to shank lengths. As with the non-diagnostic pieces, these are retained in the archive. The following pieces merited more detailed descriptions.

The iron work shows variable states of preservation, ranging from good (some corrosion) to very poor (friable and delaminating, disintegrating). The majority of the iron work falls between these two extremes, but evidence of deterioration post-excavation is evident on numerous pieces. Iron objects from the inhumations are separately listed

<3513> SF279. Bent small fragment of iron strip, edges corroded with a machine manufactured perforation at one end; junior hacksaw blade or similar. Post-Medieval.

<3382> F.1582 [2276.01]. Large loop-headed spike (two refitting pieces), similar to the example described below (cat. no. 3406); similar to Manning type R31 (1985, 130). Length 132mm, weight 61g. **Illustrate**

<3382> F.1613 [2312.03]. Several fragments: a) Tip and partial blade of a straight-straight knife, length 56.5mm, width 26.6mm, weight 15g; b) blade fragment, probably from a) or c), length 29.3mm, weight 6g; c) two refitting straight-back knife blade fragments, total length 64.3mm, width 27.3mm, weight 20g; d) corroded mass od chain links, weight 97g. Found in association with 2nd-3rd century pottery, and nails. **X-ray**

<3383> F.1613 [2312.01]. Bent bar, possibly part of a straight-backed knife similar to the next entry. Length 87.5mm, width 35mm, weight 69g. Found in association with nails, a piece of copper alloy (cat. no. 3554) and 2nd-3rd century pottery.

<3384> F.1613 [2312.01]. Large straight-backed tanged knife, with parallel blade and angled tip; fragmentary, but largely all present (tang missing); the ricasso is present. Possibly similar to Manning's Type 17 or 18b knives (Manning 1985, 116-117). The knife is very corroded and the central area has adhering either a further circular iron object or significant corrosion products. Length 225mm, width 35mm. Found in association with 2nd-3rd century pottery. A similar, slightly smaller example was found during recent excavations at North West Cambridge. **X-ray and conserve**

<3392> F.1664 [2394.01]. L-shape fragment of an iron bar. Superficially, this has the appearance of a Manning Type A2 or A3 beaked anvil or even a cobbler's last (Manning 1985, 4 & 42). However, this piece is light (69g) and the stem is somewhat narrow for either tool type. Length *c.* 60mm, weight 69g. **X-ray**

<3394> F.1686 [2420.1]. Unidentified bar or spike with reverse 'hook' at one end, possibly indicating this is a fragment of a candlestick holder (cf Manning 1985, P1), although other functional uses cannot be excluded. Length 137mm, weight 79g. **X-ray**

<3395> F.1699 [2443.01]. Relatively heavy parallel sided and concreted corroded iron bar. One end is somewhat more bulbous, but it is unclear if this is a result of corrosion of the presence of a socket. Length 125.5mm, width *c.*38mm, weight 144g. Possible tool – requires x-raying. **X-ray**

<3406> F.1873 [2628.01]. Reasonably well preserved small loop-headed or double-spike loop. Length 63.3mm, weight 15g. Found on numerous sites these objects could be inserted into a variety of materials and, if this material was thin enough, the spikes of the double-spike form could be hammered outwards (Manning 1985, 130). **Illustrate and x-ray**

<3408> F.1888 [2649.01]. Fragment of a tapering bar 83mm long with a possible lug. It is unclear if the wider end is complete or if the angle of the face a result of breakage. Possible tool. Weight 21g. **X-ray**

<3419> F.2083 [2881.01]. Two fragments: a) piece of iron sheet or bar with a small perforation at one end and one edge that appears to be rolled; length 48.8mm, width 26.4mm, weight 11g; b) semi-circular fragment with possible evidence of a central or terminal perforation, width 29mm, weight 3g.

<3433> Layer [2641.1]. Broken L-shaped narrow bracket or binding. One terminal or mid-point present with slightly wider aspect with approximately half a perforation surviving. Length 106mm, width 9.4mm, thickness c. 5mm, weight 19g. Found with a large nail 85mm long. Undated.

<3439> SF203. Large socketed cleaver. The socket is bent and broken and the blade to the mid-point is missing. The back edge is continues the line of the socket. Overall length c. 165mm, heel to socket c. 38mm, socket length *c*. 40mm, weight 224g. Used for dismembering and butchering meat. Similar to a Manning Type 2b (1985, 122). **Illustrate**

<3448> SF212. A relatively large piece of bent iron binding or strip with, potentially, two *in situ* rivets. It is unclear if one end is a terminal, the other end has a diagonal break. Length *c*. 160mm, width 40.5mm, weight 99g.

<3457> SF221. Two refitting fragments of a folded or hollow strip; length 69.5mm, width 24.4mm, weight 18g. Possible edge or binding strip, probably Medieval or later.

<3552> F.1618 [2317.02] SF320. Large Manning Type 4 axe. As remarked by Manning, this is the 'Roman axe *par excellence*' (1985, 16). Dating from the Late Iron Age and not exclusive to the Roman world these were produced in a large variety of sizes and possessed a backward sweeping blade. In this example the pole appears to widen towards the large oval eye; due to the degree of corrosion it is not possible to confirm the presence of lugs. Length *c*. 215mm, blade width 108mm, weight 1247g. Roman. Similar to the example from Camerton, Somerset, Jackson highlights that this type of axe was probably introduced by the military and used to fell wood and date mainly to the 1st and 2nd centuries AD (1990, 57). **Illustrate**

Lead & Pewter

The majority of the lead (75%) is either waste, casting spill or material reduced for, presumably, recycling. These items are retained in the assemblage and are not described further. Of the remaining pieces, three are pot repairs, one a domed piece of pewter, one a small disc, a lead weight and a conical piece, possibly from a second weight. All of the lead was recovered during metal detecting, with none found in direct association with a feature.

<3445> SF209. Small lead disc, 17mm in diameter and 1.7mm thick (weight 3g). There is no obvious decoration on either surface. Undated, probably Roman.

<3459> SF223. Relatively heavy conical piece of lead, possibly a weight; a small hole is present on the wider end of the object, possibly where a suspension loop would have been fixed. Height 38.4mm, max. diameter 25.7mm, weight 101g. Possibly fragment of a *triens* (*c.* 110g) Roman lead weight, ⅓ of a pound *libra* (*c*. 329g).

<3461> SF225. Degrading oval piece of domed pewter measuring 24mm x 30mm and 10.7mm high, weight 22g. Possibly a casting spill, or piece cast for a large object. Undated.

<3484> SF249. Medium sized rectangular-shaped degraded lead or pewter pottery repair patch or plug. Dimensions: 31mm x 20.5mm, weight 19g. Estimated vessel thickness 4.4mm. Roman. **Illustrate**

<3494> SF260. Large oval-shaped lead repair patch or plug. Dimensions: 35.6mm x 29.4mm, weight 30g. Estimated vessel wall thickness 4.5mm. Roman. **Illustrate**

<3493> SF259. Very large biconical lead weight with a flat circumferential band *c.* 22mm wide; traces of an iron suspension loop. Height 51.4mm, weight 1131g. **Photograph and illustrate**

<3542> SF308. Roughly square-shaped lead pottery repair patch or plug for a large vessel. Dimensions: 36.6mm x 34.6mm, weight 57g. Estimated vessel wall thickness 6.7mm. Roman. **Illustrate**

Burial Assemblage

Burial F.1753
Associated with this inhumation were 71 hobnails and 23 nails, the latter probably coffin nails; the three identified coffin nails provide an estimated plank thickness of 12-15mm for the coffin (Table 37). The last two nails associated with this inhumation (cat. nos. 3568 and 3569) may not be coffin related due to their sized and clenched nature and may be related to some other funerary furniture or fitting.

Cat No.	Context	SF no.	Type	Nail length (mm)	Est. wood thickness (mm)	Qty.	Wt. (g)	Comment
3398	2526.01		Hobnails			55	96	Dome-headed
3399	2526.03		Hobnails			9	14	Dome-headed
3556	2526.01	325	Nail	68.9		1	16	Complete - clenched
3557	2526.01	326	Nail	27.6		1	4	
3558	2526.01	327	Nail	39.4		1	9	Complete?
3559	2526.01	328	Nail	67.7		2	12	2 refit
3560	2526.01	329	Nail	45		2	17	
3561	2526.01	331	Nail	74.4		1	13	Missing head - clenched
3562	2526.01	332	Hobnails			3	4	Dome-headed
3563	2526.01	333	Nail	29	14	1	8	Double clenched
3564	2526.01	334	Nail	24		1	3	
3565	2526.01	335	Nail	65	15	5	17	Mineralised wood
3566	2526.01	336	Nail	34.7	12.5	1	6	Mineralised wood
3567	2526.01	337	Nail	75.5		1	14	Complete
3568	2526.01	338	Nail	72		2	21	Complete - clenched
3569	2526.01	339	Nail	77.3		4	14	3 refit - clenched

Table 37: Iron objects from burial F.1753 (Illustrate <3565>, <3568> or <3569>)

Burial F.1806
Only a single piece of metalwork was recovered from the inhumation fill, a small piece of nail shank (<3570> [2562.01]. Nail shank; square cross-section. Length 10.4mm, weight ,0.5g).

Burial F.2018
A total of eight nails were retrieved from this inhumation (Table 38). All of the nails were corroded and there were no obvious traces of mineralised wood, although they are presumed to be coffin-related. No other iron objects were recovered from the burial.

Cat No.	Context	SF no.	Nail length (mm)	Qty.	Wt. (g)	Comments
3572	2818.01	343	44.8	1	12	
3573	2818.01	344	42.7	1	8	
3574	2818.01	345	52.6	1	10	Cuboid head?
3575	2818.01	346	27.5	1	6	Heavily corroded
3576	2818.01	347	32.9	1	7	
3577	2818.01	348	53.9	1	11	
3578	2818.01	349	45.7	1	4	Complete
3579	2818.01	350	19.8	1	6	

Table 38: Iron objects from burial F.2018

Burial F.2255
Consisting of 69 items this very corroded assemblage includes 20 hobnails, 14 found beside the left foot and 9 beside the right foot (Table 39). In addition 46 nails were found, these providing an estimated plank thickness of between *c*. 7mm and 13mm.

Cat No.	Context	SF no.	Type	Nail length (mm)	Est. wood thickness (mm)	Qty.	Wt. (g)	Comment
3586		370-374	Nails, lump	21-32		5	13	Fragments
3587	3132.01	370	Nail	Head		1	7	
3588	3132.01	371	Nail	35		1	13	Clenched
3589	3132.01	372	Nail	43.8		1	13	
3590	3132.01	373	Nail	28.5		1	10	
3591	3132.01	374	Nail	56	10	1	14	Sq. 'channel' behind head
3592	3132.01	375	Nail	22		1	6	
3593	3132.01	376	Nail	60.3		1	9	Complete
3594	3132.01	377	Nail	83.9		3	14	3 refitting frags.
3595	3132.01	378	Nail	55.6		3	25	Large head with sq. 'channel' behind
3596	3132.01	380	Nail	45.5	13	2	27	Complete nail– wood mineralised on 2nd nail head
3597	3132.01	381	Nail	57.9		2	11	2 refitting frags.
3598	3132.01	383	Nail	53		2	14	2 refitting frags.
3599	3132.01	384	Nail	Frags.		3	2	Refitting frags?
3600	3132.01	385	Nail	62		3	16	
3601	3132.01	386	Nail	64.5		2	21	Complete nail and frag.
3602		387?	Nail	70.4	9?	2	15	2 refitting frags.
3603	3132.01	388	Nail	25.5		1	5	Clenched
3604	3132.01	391	Nail	Frag.		1	5	
3605	3132.01	392	Nail	68-75	7.5?	5	25	2 nails, pieces refit. Mineralised wood on 1
3606	3132.01	393	Hobnails			9	9	Hobnails from right foot
3607	3132.01	394	Hobnails			14	16	Hobnails from left foot
3608		395	Nail	35.3		1	2	
3610	3132.03	407	Nail	Head		2	8	
3611	3132.03	408	Nail	88	12	2	19	Mineralised wood

Table 39: Iron objects from burial F. 2255 (Illustrate <3611>)

This is a small assemblage when compared to the metalwork recovered from the Addenbrooke's environs (Appleby 2008; Hall 2005; Hall & Appleby 2014) and at Clay Farm (Hall 2006; Hall & Appleby 2006) and is devoid of Medieval and post-Medieval finds. Despite the small quantity of material there are several pieces that are of interest, such as the cuirass fitting from a suit of *lorica segmentata*, and the later Roman belt buckle. This later piece may even date to the very late Empire or the immediate post-Roman or early Anglo-Saxon periods. The cable bracelet and decorated strip reflect the use of personal items, but it is worth noting the lack of brooches from the site, in stark contrast to the 17 brooches found at the Hutchison site nearby (Haselgrove 2008, 75) and six examples from the Addenbrooke's Energy Centre (Hall & Appleby 2014, 29). There was also a complete lack of metalwork within the graves (save for coffin nails/furniture), again in contrast to that found as grave goods in burials at the Hutchison site (Appleby 2008, 80) and Clay Farm (Webb & Brudenell 2006).

The ironwork assemblage consists, both from funerary and non-funerary contexts, primarily of nails and nail fragments and undiagnostic pieces. As with the coffin nails recovered from inhumation burials at North West Cambridge (Appleby 2014) several examples from this site provide similar plank thickness estimates from the mineralised wood present on the nails and the width of square 'channels' behind nail heads. One of the more significant finds from the site is the large straight-backed knife (cat. no. 3384) recovered from tank F.1613. On the somewhat large size for this type of knife it bears a similarity to later Anglo-Saxon knives, although this example was found in association with a large quantity of Roman pottery. At least a further three similarly shaped, but smaller knives, were recovered from the same feature as well as several nails. As well as these knives, the large axe and socketed clever attest to a diverse range of activities on or near the site. Several pieces of the assemblage, mainly iron, require x-raying to aid further identification and function and to provide a permanent record of some fragile and degrading objects. Assessment of the iron assemblage would benefit from further detailed analysis following x-raying of the material.

The lead repairs found during metal detecting are usually associated and found in situ on ceramic fine wares, notably Samian. The larger patches suggest, however, that repairs were made to considerably large vessels (not necessarily exclusively ceramic ones), challenging the notion that vessels were 'ritually' killed. As discussed by the author in respect of the large numbers of repairs found at the Camp Ground, Earith (Appleby 2013), such patches may suggest there was a breakdown in the supply of pottery in the 3rd century necessitating repairs rather than replacement, although further work on this interpretation is needed. The large lead weight (cat. no. 3493) is intriguing as it does not conform to a unit of Roman weight (usually a division of the Roman pound – *libra*). At the present time, it is considered to be a counterbalance weight or similar, but it was unlikely to have been used in conjunction with a steelyard. Interestingly, the slightly degraded conical lead object (cat. no. 3459) may be a steelyard weight. Such weights are relatively common on Roman sites and demonstrate the regulation of weights and measures by the state (Appleby 2013., 354).

Although this is a somewhat impoverished assemblage, there are several pieces that provide insight to activities on or near the site. The coffin nails further illustrate that a variety of nail sizes were often used in the construction of coffins, suggesting

expedient use and or recycling of available resources, rather than the specific manufacture of coffin nails. Again, this conclusion is currently speculative, but with the increasing number of securely provenanced examples, such an interpretation seems likely.

Roman Coins – *Adrian Marsden*

A total of 79 coins were recovered from the North Plot excavations, the majority through metal detector survey. A full catalogue of the coins is included in Appendix D (Table D11).

Three early coins, two *asses*, probably of Claudius and a *semis* of Nero, may hint at a military origin for the site. The *semis* has seen little wear and the *asses*, although one is heavily corroded, also do not seem to be heavily worn. They may possibly be connected to a fort established in the period following the Boudiccan revolt or perhaps a little earlier.

There are no coins dating from the reigns of Vespasian through to Hadrian and most of the Antonine *sestertii* show fairly high levels of wear consistent with a loss date in the late 2nd century or the first half of the 3rd century. This may suggest that the site was abandoned - or at least that no coin use was taking place there - from the later 1st century until well past the middle years of the 2nd.

There is little in the way of the generally very common argentiferous radiates of the third quarter of the 3rd century and we may conclude that the site – or at least this part of the site - was still sparsely inhabited at this stage.

A number of the radiates of Carausius (286-93) and Allectus (293-6) together with the reformed nummi of the Tetrarchies (296-317), demonstrate continued coin loss throughout the closing decades of the 3rd century and the opening decades of the 4th .

The later issues of the House of Constantine, from 330 to 361, are extensive and must point to a high level of coin use at the site in this period. Most are in themselves unremarkable but two of the so-called city commemoratives of the period 330 to 335, carry mintmarks of the Eastern cities of Thessalonica and Constantinople. A slightly earlier coin, a IOVI CONSERVATORI type of the period 317 to 320, was struck in Kyzicus. Coins of this period from the Eastern empire are rarely encountered in Britain and these three coins may constitute a purse loss or part of a purse loss dropped by a traveller newly arrived from the East.

The list tails off sharply in the later 4th century, with very few examples of the generally very common issues of the House of Valentinian. The latest coin is a Theodosian SALVS REIPVBLICAE issue (388-402).

The overall picture offered by the group is of a possible military origin in the third quarter of the 1st century. This may have been followed by a period of abandonment in the later 1st century running into the Antonine period. A period of continuous although relatively low-level occupation in the late 2nd and 3rd centuries is implied by the worn Antonine sestertii and later 3rd-century radiates. Coin usage at the site

then peaks in the second quarter of the 4th century and it was probably in this period that activity was most intense. It would seem that the later years of the 4th century saw a rapidly diminishing human presence at the site, a presence that had all but ceased in the years running up to the end of the century.

Given the breakdown, lacking in the issues of the House of Valentinian typical of at least a part of the assemblages common to so-called Temple sites, it is unlikely that we are dealing with a religious centre. Most likely, we are dealing with a settlement that began at the first site as a military installation at some stage before or – more likely - just after the Boudiccan revolt and then saw little activity until the later 3rd century. Following these beginnings, intensified coin use at in the 330s, 340s and 350s suggests a relatively brief heyday which then faded in the later 4th century.

Saxon Coin – *Martin Allen*

SF.359. Anglo-Saxon, Alfred of Wessex (871-99), debased silver penny, Lunettes type B(North 626), 871-*c.*877, Canterbury style dies, moneyer Luhinc. 0.97g.

Glass *by Vicki Herring*

A total of 37 individual fragments of glass were collected from the North site excavation at AstraZeneca, representing a minimum of 13 vessels, one of which was complete. Aside from vessel glass, there was a single fragment of window glass, a piece of furnace waste and four very small non-diagnostic shards collected from residue sampling. All of the glass in this assemblage dates to the Roman period.

Feature	Type	Object	Other detail	Colour	Date
1504 Pit	Window	'Matt-glossy'	Locally made	Blue/green	1st-2nd century
1613 Pit	Vessel	Square bottle		Blue/green	2nd century
		Square bottle?			
1617 Ditch	Vessel	Square bottle?		Blue/green	
1718 Ditch	Vessel	Square bottle		Blue/green	2nd century
1756 Ditch	Vessel	Bottle			
1846 Ditch	Vessel	Bottle?		Blue/green	
1915 Pit	Vessel	Conical beaker	Cullet collection	Pale green	4th century
		Square bottle		Blue/Green	
		Square bottle			
	Waste	Molten furnace waste			
2210 Ditch	Vessel	Bottle or flask		Blue/green	
2219 Ditch	Vessel	Bottle?		Blue/green	
2255 Burial	Vessel	Unguent bottle	Mediterranean import	Blue/green	2nd-3rd century
Unstrat.	Vessel	Cup/beaker/bowl		Green	

Table 40: Summary of glass from the North Plot

As Table 40 indicates, the majority of the assemblage is made up of vessel glass, most of which are fragments of bottle glass common in the late 1st and 2nd centuries. A single tubular base fragment of un-stratified cup, beaker or bowl was too fragmentary for precise identification. Two features, Pit F.1915 and Burial F.2255, produced glass of particular interest.

A complete Unguent Bottle, only 4.81cm in height was found with Burial F.2255. It's form and characteristics – the way the rim is out-turned then folded over and flattened, for example – are typical of 2nd-3rd century flasks and unguent bottles, though it is much smaller and finer than most unguent bottles found in Britain (Price and Cottam, 1998). It is rare and incredibly fortunate to find a vessel this small and delicate intact. These bottles contained perfumed oils and were often used during funerary practices to anoint the body. As in this case, the vessel was then placed into the grave as part of the burial. It is most likely that this vessel was imported from the Mediterranean rather than locally made, not only because of the fine glassware but vessels such as unguent bottles were generally imported for their contents (Allen, 1998).

Pit F.1915 contained a small collection of cullet consisting of broken shards of vessel glass as well as a piece of furnace waste. The vessel glass would have originally formed part of two Blue/green bottles and a pale green, 4th century, conical beaker with open base ring and cracked off rim. More important than the original use of these vessels however, is their collection within the pit alongside furnace waste, suggesting that glass working was taking place on site at least during the 4th century. Glass working in Britain usually consisted of recycling and working used glass which was stored in pits as cullet (Allen, 1998). The presence of a single fragment of window glass of typical 1st-2nd century, 'Matt-glossy' type, usually made locally (Allen, 1998) suggests that glass working of one form or another was taking place on this site throughout the Roman period.

Roman Tile – *Grahame Appleby*

During excavation of the North Plot 132 pieces of tile and brick fragments (15.68 kg) were recovered from 67 archaeological features or layers. Fabrics varied from fine to relatively course and sandy, with numerous pieces displaying orange/red oxidised surfaces and reduced interiors. The majority of the pieces (92, 6.38kg) were unidentifiable, with 38 fragments (9.3kg) attributable to type (table ?).

Type	Quantity	Weight (g)
Imbrex	5	681
Pilae	12	4845
Tegula	18	3375
Tubulae	3	397
Total	**38**	**9298**

Table 41: Tile types and weight

Tegulae and imbrices (roof tiles) were recovered in a ratio of roughly 3:1 even though a ratio of closer to 1:1 would be expected based on how roofs were tiled. One *tegula*

from F.2193 is crudely manufactured from a white, marly clay and may be a local copy of imported material.

Several of the fragments appear to have been subjected to post-firing heating and had a burnt or sooted appearance. This was particularly notable for the *pilae*, which are tiles used in the construction of hypocausts; three fragments of *tubulae* (box-flue used to raise heat through vertical walls) were also identified (one piece from F.1885 has traces of plaster or *opus signinum* adhering to one surface).

This is a relatively small assemblage with a slight bias towards roofing material. The 12 *pilae* and three *tubulae* fragments are instructive as these indicate a building with a underfloor heating system was located nearby, and probably originated from the scheduled villa site located less than 1km southwest of the site.

Worked Bone – *Vida Rajkovača*

A single worked antler element was recorded within the assemblage.

<2188> [2344.2] F.1631 A segment of a red deer antler sawn off both ends. It appears to have been used as a handle or a haft, as one end looks like it has been hollowed out. The object measures 124.55mm in length and approximately 44mm in width.

No further analysis of this item is required.

Waterlogged wood – *Iona Robinson*

A small assemblage of five pieces of waterlogged worked wood representing elements of a single composite artefact were recovered from the basal contexts of the shaft within F.1758, a large well of Roman date. Two of these pieces were encountered as substantial 'uprights', angled slightly against the edge of the well, and three of these pieces were observed to be horizontal elements, located between those uprights. The assemblage was therefore interpreted as a putative runged ladder (SF.352), although unstable conditions within the waterlogged feature prevented full excavation of the artefact. Samples of both upright elements and the horizontals were retrieved for further examination. The possibility that there were further, irretrievable horizontal elements (rungs) towards the base of the ladder was noted.

Examination of the recovered worked wood samples supported the on-site interpretation of the artefact as a 'pole ladder'. Despite the fragmented nature of the samples, almost all of the wood recovered was found to be in a good condition, graded **4** on the condition scale as established by the Humber Wetlands Project (Van de Noort et al. 1995, table 15.1), except for two fragments from the top of the southern upright which were in poor condition and scored **2** on the condition scale. The two uprights (poles) were formed of substantial lengths of split oak roundwood (Table 41). The southern upright was converted by means of a half split, the northern upright, by a radial third split. Both retained sapwood and bark on their unworked exterior. Analysis of the broken end of the largest fragment of the southern upright revealed that this break had occurred at the location of a mortice joint, with three sides of the joint remaining (internal joint dimensions: 76 x 52 x 32mm). The samples

retrieved of the horizontal elements (rungs) indicate that these were made from much more slender pieces of roundwood of varied form: one was a straight piece of unsplit roundwood with bark removed and two were pieces of roundwood converted by means of a radial quarter split (Table 41). One of these samples of a quarter-split rung included the worked end of the rung which demonstrated that it had been squared off by two tangential chops on its unsplit faces to create a tenon by which the rung could be secured into a mortice on the pole (squared end dimensions: 119 x 36 x 28mm). The wood or woods used to construct the rungs could not be identified to species by visual inspection (i.e. it was neither oak (*Quercus* sp.) nor ash (*Fraxinus* sp.)). The straightness and eveness of the roundwood used for both uprights and rungs indicates the coppiced branches were utilised in the construction of the ladder. No tool marks (e.g. axe stop-marks) were identified on the worked faces of any of the wood examined.

	Southern upright (pole)	**Northern upright (pole)**	**Rung A**	**Rung B**	**Rung C**
Form	½ split roundwood	1/3 split roundwood	Roundwood	¼ split roundwood	¼ split roundwood
Wood species	Oak	Oak	No id	No id	No id
Length	1000+mm	1000+mm	291+mm	505+mm	309+mm
Max. cross-section	207 x 105mm	152 x 88mm	30 x 27 mm	49 x 26mm	31 x 25mm
Joint	Single mortice identified	Non identified/ surviving	Non identified/ surviving	Tenon	Non identified/ surviving
Best condition score	4	4	4	4	4

Table 41: SF. 352 pole ladder

Although no intact joints were recovered, the evidence suggests that the ladder was constructed from two robust poles with widely-spaced narrow rungs secured by mortice and tenon joints. Measurements taken on-site indicate that the ladder's poles had a minimum height of at least 1000mm, while off-site measurement of the rung fragments indicate a minimum width of 505mm. The interval between the ladder's rungs cannot be reconstructed from the fragmented samples of the poles, but the pieces examined do suggest that the rungs may have been widely spaced (c. 500mm apart).

Statement of potential

The partial nature and small number of the retained wood samples limits the potential for further analysis of the ladder. Occurring on a site without additional examples or assemblages of waterlogged wood, the five pieces of wood used to construct the ladder alone are not appropriate candidates for woodland reconstruction beyond species identification of the rungs, which would identify which species (other than oak) were being utilised in coppiced woodland. Similarly, occurring in a location where a wider waterlogged assemblage and the general preservational conditions are not an investigative or conservational concern, further decay analysis is not

recommended. Long-term conservation of these partial samples is not considered necessary.

In terms of investigating woodworking technology, the retained pieces have greater potential. Examples of Roman ladders are known from across continental Europe (e.g. Groot 2009, 60), but only a few examples from the British Isles have been published. Roman pole ladders, constructed with narrow tangentially-split poles of rectangular cross-section, were found at Silchester and at Queen Street, London (Weeks 1978). However, with its thick, radially-split roundwood poles, the AstraZeneca site ladder appears to bear greater resemblance to the Late Iron Age ladder found at Glastonbury (Weeks 1978, figs 2 & 4). A wider literature search for comparanda incorporating grey literature of recent sites (such as Brooksby in Leicestershire where a ladder of probable Roman date was recently excavated (ULAS 2014)) would enable the 'robust' style of the AstraZeneca site ladder to be put in context in terms of the typology of early pole ladders and the techniques used in their manufacture. Wood species identification of the rung-wood/s would provide further detail in the characterisation of the AstraZenaca ladder for use in this process. The two oak uprights might also be potential candidates for dating by dendrochronology, however, the limited number of growth-rings present in the samples of these timbers may reduce the potential for successful dating by this method.

Human Bone – *Natasha Dodwell*

Five inhumations and three urned cremation burials were identified during archaeological excavations on the North Plot. All of the burials date to the Roman period; cremation was the predominant rite in the 1st and early 2nd centuries AD with inhumation becoming the normative ritual in the following centuries. In addition to the burials, a single disarticulated human bone was recovered approximately 20m southwest of the inhumations.

The Nature of the Assemblage

The inhumation burials were grouped together in the far eastern part of the site; four were adjacent and parallel to a series of re-cut ditches with the fifth at right angles to them. All were in a supine, extended position. The three cremation burials (Fs. 2271, 2272 and 2298) were identified in the very south-west of the excavation and it is possible that more may lie beyond the sites limits. In each burial the cremated bone was contained within an urn with one of the burials having at least two ancillary vessels.

Methodology

All of the vessels thought to be associated with cremation burials were planned/photographed *in situ* and then lifted and excavated in the laboratory. The contents of the vessels were excavated and recorded in spits and the soil wet sieved. Any material recovered from the flots was passed to the relevant specialist and all of the cremated bone was separated from extraneous material prior to analysis.

The skeletons were analysed using standard methods described above (South Plot Human Bone report).

Preservation of Material

Which bones are present, how complete they are and the preservation of the cortical bone greatly affects the information that can be gleaned from a skeleton. When exposed to the heat of a cremation pyre, bone will fracture and fragment often making the identification of elements problematic and damaging areas of the skeleton used to determine the age/sex of an individual (see below). Because of the fragile nature of spongey trabecular bone, very few articular ends or joint surfaces survived. In addition, not all of a cremated body is necessarily recovered; sometimes not all would have been interred or, as at Astra Zeneca an unquantifiable quantity of bone has been lost to truncation.

All of the skeletons had sufficient areas of the skull and pelvis so that an age and sex could be determined, but the lack of complete long bones meant that no living statures could be calculated. Many of the elements are fragmentary with the preservation of the torso being particularly poor. The surface of the bone/cortical bone is very abraded/eroded (mostly grade 4, McKinley 2004b) with evidence if rootlet etching. This combined with the absence of the majority of the articular surfaces (joints) means that many putative pathological changes will be under reported. Teeth are generally heavily worn and the surviving enamel is heavily etched (by rootlets).

Results

The cremation burials (Cemetery A; Table 42)

Feature	Burial type	Cremation Urn (SF. No)	Ancillary vessels (SF. No)	Max frag. length	Bone weight (>2mm)	Age/sex	Comments
2271	urned	399	398,400 & 401	89.27mm	386g	adult	2 of vessels rest on top of bone in the main urn
2272	urned	397		71.42mm	140g	adult	Clipped by the machine
2298	urned	409		61.11mm	709g	young adult	

Table 42: Cremation burials from Cemetery A

No cuts were observed and all of the vessels had been crushed by the 1970's landscaping of the area and the weight of the overburden. F.2273 and F.2298 are relatively intact despite being crushed. The degree of truncation (and therefore the quantity of bone potentially missing) is unknown for F.2271 and F.2272. The weight of bone analysed for each feature is between 140-709g. Two of the burials had lower limb fragments that were charred black but the majority of burnt bone fragments were a greyish white colour indicative of complete oxidisation and of pyre temperatures of at least 600^{o} C. Although the maximum bone length recorded is relatively large (between c.60-90mm) the majority of fragments are <30mm. Because of the

fragmentation little demographic information could be gleaned; the bones are all 'adult' and those from F.2298 are those of a young adult.
The inhumation burials (Cemetery B; Table 43)

Both males and females were identified and all of the individuals were mature adults with the exception of F.2255, a young adult female. As in most archaeological skeletal remains, osteoarthritic lesions and dental disease (caries, ante-mortem tooth loss and abscesses) were the most common pathologies observed. One skeleton had orbital lesions characteristic of cribra orbitalia, a manifestation of either iron deficiency or megaloblastic anaemia, and another had a possible healed trauma to the back of the head. The numerous iron nails recovered from around two of the skeletons (Fs. 1753 and 2255) are evidence that they were buried in coffins. In the other three, the position of the arms, tight against the torso suggests that these were probably shrouded. One of the males, F.1752 had a small pot placed between his ankles and one of the mature females, F.1753 had been buried wearing hobnail boots. The youngest female, F.2255 was also wearing hobnail boots and, a small indented beaker and a tiny glass unguent bottle had been placed inside her coffin beside her left lower leg.

Feature	**Skeleton**	**Orientation ***	**Age/sex**	**Pathology**	**Surface preservation**	**Coffin furniture/grave goods/personal adornments**
F.1752	[2561.03]	SE-NW	Mature adult male	Calculus, AMTL, 2 external draining abscesses. OA left sternoclavicular joint	Grade 4	Small pot between ankles
F.1753	[2526.03]	SE-NW	Mature adult female	AMTL, caries	Grade 4-5	Coffin nails (and other iron fittings). Hobnails.
F.1806	[2562.03]		Mature adult ? male	Caries, AMTL, OA in left shoulder	Grade 4-5	Iron pin on l. clavicle – possibly coffin nail
F.2018	[2818.02]	NNW-SSW	Mature adult female	Caries, *Cribra orbitalia*	Grade3-4	
F.2255	[3132.5]	NW-SE	Young female	Heavy calculus, caries. Possible healed trauma on occipital	Grade 4	Coffin nails. Hobnails. Indented beaker & glass unguent bottle

Table 43: Inhumations from Cemetery B. (*Position of the head first, AMTL=antemortem tooth loss, OA=osteoarthritis)

Disarticulated bone

A single fragment of disarticulated human bone, the mid shaft of an adult right femur was recovered from F1758 [2507.01], a Roman well, approximately 20m southwest of the inhumations.

Recommendations for future work

As recommended by BABAO and CIFA (McKinley and Brinkley 2004) the cremated bone needs to be passed through a series of graded stacked sieves so that the degree of fragmentation can be objectively assessed. In addition bone from the untruncated burials should be separated into body part to determine if there was any selection/exclusion of particular elements.

The lesion on the occipital bone of skeleton F.2255 needs further investigation to determine if it truly is a partially healed injury or is a pseudo pathology but beyond this, no further analysis of the skeletons themselves is necessary. Prevalence rates for dental disease need to be calculated.

The burials and the disarticulated material will need to be discussed with reference to the sites in the Addenbrooks environs (e.g. the Hutchinson site, Clay Farm and Trumpington Meadows).

Shell – *Christopher Boulton*

All shell was quantified (fragment count) and weighed by feature. The results are shown in Table 44, below.

	Total	Weight (g)	% Total	% Weight
Oyster	745	12246	74.2	98.9
Mussel	19	40	1.8	0.32
Snail	235	89	23.3	0.72

Table 44: Shell from the North Plot

The assemblage overwhelmingly comprised Oyster shell, with 74.2% of the total quantity and 98.9% of the total weight. The mussel shells amounted to a relatively small percentage with only 1.8% of the total quantity and 0.32% of the total weight. Some 23.3% of the total quantity (0.72% by total weight) was snail shell; this should be incorporated into the mollusc shell assemblage (see Fryer, below) and any necessary further analysis undertaken as part of that.

The largest percentage of shells of all types was recovered from pits. Two features are of particular note, F. 1613 and F. 1504; both appear to show a link between the presence of large quantities of oyster and mussel shell and domestic use. The largest amount of oyster (1643g, 64 fragments) and mussel (17g and 10 fragments) comes from a pit F. 1613 dated to the late 2nd to early 3rd century AD, which contained large quantities of pottery including Roman fine ware and mortaria as well as other 'domestic' items such as iron objects and ceramic building material. Although containing a smaller amount of oyster shell (674g and 33 fragments), the pit from

F.1504, still contained a number of finds related to a similar usage, such as Roman Samian ware, amphora and glass.

Recommendations

The shell assemblage is relatively large in comparison to other local Roman-British sites. Despite this no feature assemblages are statistically viable (100+) and therefore none are suitable for detailed analysis.

Faunal Remains – *Vida Rajkovača*

Excavation of the North Plot generated a significant faunal assemblage with a raw fragment count of 7269 bones and a total weight of 92256g. This figure does not include the faunal remains recovered as heavy residues from environmental bulk soil samples. Following the zooarchaeological analysis, some 2143 assessable specimens were recorded. Of this figure, 904 (42.2%) were possible to assign to species. The material was moderately preserved, with a number of complete specimens available for biometrical study.

Provenance, character and the chronology of the material

The bulk of the material came from a series of enclosure ditches and pits, ranging in date from the 1st century through to the 4th century AD. Main receptacles of bone waste were ditches: a few distinct bone 'dumps' were recorded in ditches F.1919, 2216 and 2249. The material comprises disarticulated remains of animal bone – clearly deposits of food waste – with domesticates making up the overwhelming majority of the assemblage.

Preservation, fragmentation and taphonomy

The assemblage demonstrated overall moderate to quite good levels of preservation though a portion of the assemblage showed signs of severe surface exfoliation, erosion and weathering (164 fragments/ 7.6% of the assemblage). The assemblage was heavily processed and highly fragmented with only ten complete specimens being recorded for all species. Gnawing marks were recorded on an insignificant portion of the assemblage (50 specimens/ 2.3% of the assemblage). All were canine marks and the small percentage implies quick deposition of the material. Butchery marks were also quite rare and were recorded on 47 specimens (2.2% of the assemblage).

Representation of species

In keeping with the majority of assemblages from the rest of the country, the material is dominated by the remains of livestock species. Again, like most assemblages of similar date, cattle showed an overwhelming prevalence, accounting for almost two thirds of the assemblage and a minimum number of 34 individuals (Table 45). Less

characteristic was the high percentage of horse (NISP=17.6% and MNI=7); horse cohorts in Romano-British assemblages more usually make up 3% to 6% of NISP, typically *c.*5% (e.g. Leivers, Seager Smith and Stevens). Ovicapra made up 14% of NISP (MNI=8). Remarkably, especially for the period, pig was atypically rare with only 17 specimens and 1.9% of the assemblage's identified species' count. Both cervid species were identified based on a few fragments of antler and meat-bearing elements, suggesting venison was occasionally eaten.

Taxon	**NISP**	**%NISP**	**MNI**
Cow	571	*63.2*	34
Sheep/ goat	127	*14*	8
Sheep	6	*0.7*	1
Goat	1	*0.1*	1
Pig	17	*1.9*	2
Horse	159	*17.6*	7
Equid (Donkey?)	3	*0.3*	1
Dog	11	*1.2*	2
Cat	1	*0.1*	1
Red deer	5	*0.6*	1
Deer?	2	*0.2*	1
Roe deer	1	*0.1*	1
Sub-total to species	**904**	*100*	.
Cattle-sized	963	.	.
Sheep-sized	257	.	.
Mammal n.f.i.	16	.	.
Bird n.f.i.	3	.	.
Total	**2143**	.	.

Table 45. Number of Identified Specimens and the Minimum Number of Individuals for all species from all contexts excavated on the North Plot; the abbreviation n.f.i. denotes that the specimen could not be further identified.

Ageing, biometrical data and pathologies

The high fragmentation affected the assemblage's potential to build kill-off profiles, as only two records of the mandibular tooth eruption and wear, both of cattle were made. As for the other aspects of ageing, only a small number of epiphyses were recovered from the main domesticates (a total of 73 for all identified species). Similarly, only ten measurable specimens survived. A few cases of inflammations, changes in the appearance of mental foramina on mandibles and other non-metric traits and pathological changes were recorded and these will be considered in full at a later date.

Assessment and statement of potential

The most prominent, yet the least surprising characteristic of the assemblage is the dominance of cattle. Cattle amounted to more than all other species put together. Their prevalence is characteristic of the period, with the Roman legions bringing a preference for beef from the Continent. It is commonly accepted that this preference is

not just an indication of a level of Romanisation, but also a clear indication of a site's military character (e.g. King 1991, 2005), as the Roman military machine organised their supply primarily around beef. Though the lack of ageable material (mandibles or epiphyses) preculdes more complex considerations of the husbandry practices, it is possible that further analysis of the assemblage will produce a fuller picture of specialist activities, for example dairying represented by small numbers of sub-adult or juvenile cattle. A brief glance at measurements showed some cattle specimens to be especially large, in keeping with expected sizes of larger improved breeds which were brought over from the Continent. As for butchery marks, these were consistent with actions typically recorded in Romano-British assemblages; crude disarticulation, portioning and curing of beef. Comprehensive analysis of butchery marks and the spatial distribution of skeletal elements or carcass portions will help us understand the patterns of food provision on site at the time.

One of the most surprising aspects of the assemblage was the high horse component, which was second only to cattle and with a larger NISP count than ovicapra. This percentage (17.6%) is substantially higher than the usual 3-6% of NISP seen on the majority of similarly dated sites from the region, especially from an assemblage of this size. A comparable site from the region with a similarly high percentage of horse is Earith (Langdale Hale, with 11% of NISP in Phase III and 25% in Phase I, Evans *et al.* 2013). Another comparative could be the Babraham assemblage, with 15.6% of the NISP count (Armour 2007). The measurements collected from a number of specimens gave a broad range for horse shoulder height, with a small number of animals clearly showing the increase seen in animals recorded from Roman contexts from the Mid Roman period (Albarella, Johnstone, and Vickers 2008).

The important horse component can be interpreted in many ways and these will be explored when viewed against the data obtained from the full site analysis. Though certain aspects of the assemblage's interpretative potential are lacking (e.g. ageable material), the ratio of species, butchery patterns and bone deposition certainly offer sufficient potential for detailed considerations of site economy and animal-human relations. Viewing the results alongside findings from such a well-researched locale will offer a unique opportunity to reconstruct Romano-British economy, food provision and animal-human relations in the area and compare it with that in urban Cambridge.

Further work

- Further specialist analyses: Faunal remains from heavy residues are to be analysed. Worked bone must be analysed by a specialist. Detailed study of butchery patterns with a view to understanding the chaîne opératoire of the bone working in its entirety will be undertaken.

- Spatial analyses and patterns of deposition: a detailed study of spatial distribution of species, skeletal elements by feature type is recommended. This will not just advance our understanding of foodways, but also community practices and everyday habits or rituals.

- Integration: Recovery of such a rich faunal record from a thoroughly investigated and a well-researched locale coupled with a good level of

understanding of regional economy patterns provides an excellent opportunity to take this research to an innovative level. This can only be achieved by integrating the results from related studies of material culture and environmental data.

- Reporting: A full archive report including measuring and ageing datasheets, will be produced as the foundation upon which to build a publication text.

Environmental Bulk Samples – *Val Fryer*

A total of 107 samples were taken from the North plot with 25 being submitted for assessment. Sample selection was based samples were selected i) in order to assess all major feature types and phases and ii) if they were deemed to have particular potential (eg. where charred cereal grains were noted within fills) A full breakdown of the plant and mollusc remains from each sample is included in Appendix D (Tables D13-D15).

Results

Cereals, chaff and seeds of common weeds and wetland plants are present at varying densities within all but five of the assemblages studied. Preservation is very variable; some cereals/seeds are quite well preserved, whilst others are severely puffed and distorted, probably as a result of combustion at very high temperatures. Some remains are also highly comminuted and/or abraded, possibly indicating that they were exposed to the elements for some considerable period prior to incorporation within the feature fills.

Oat (*Avena* sp.), barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains are recorded, with wheat being predominant. Of the wheat grains, most are of an elongated 'drop' form typical of spelt (*T. spelta*), although occasional rounded specimens of probable bread wheat (*T. aestivum/compactum*) type are also noted. Cereal chaff is generally quite scarce, although the assemblages from Roman pits F.1613 and F.1768 (samples 300 and 317 respectively) and Roman ditch F.1668 (sample 305) do contain moderate to high densities of spelt glume bases.

Charred seeds of common segetal weeds are present at a low density within fourteen of the assemblages studied. Taxa noted include corn cockle (*Agrostemma githago*), stinking mayweed (*Anthemis cotula*), black bindweed (*Fallopia convolvulus*), goosegrass (*Galium aparine*), corn gromwell (*Lithospermum arvense*), grasses (Poaceae), and dock (*Rumex* sp.). A charred onion-couch (*Arrhenatherum* sp.) type tuber is recorded within the assemblage from pit F.1964 (sample 334). The assemblage from Roman pit F.1649 (sample 308) contains de-watered seeds of ruderal weeds which were probably growing within the near vicinity. These include fools parsley (*Aethusa cynapium*), musk thistle (*Carduus* sp.), thistle (*Cirsium* sp.), hemlock (*Conium maculatum*), dead-nettle (*Lamium* sp.), sainfoin (*Onobrychis viciifolia*), silver weed (*Potentilla anserina*), buttercup (*Ranunculus* sp.) and nettles (*Urtica dioica* and *U. urens*). The presence of henbane (*Hyoscyamus niger*) within the same assemblage may indicate that the surrounding soil was very nutrient rich, as this

is a plant most commonly seen on or adjacent to manure heaps. Sedge (*Carex* sp.) nutlets occur within six assemblages and de-watered seeds of duck weed (*Lemna* sp.), gipsy wort (*Lycopus europaeus*), rush (*Juncus* sp.) and water crowfoot (*Ranunculus* subg. *Batrachium*) are also recorded. Tree/shrub macrofossils are very scarce, but occasional small pieces of hazel (*Corylus avellana*) nutshell are recorded along with a possible fragment of sloe type (*Prunus* sp.) fruit stone. Charcoal/charred wood fragments are present within most assemblages, although rarely at a high density. Other plant macrofossils include pieces of charred root or stem and indeterminate inflorescence fragments, seeds and tubers.

The fragments of black porous and tarry material, which are recorded within most of the assemblages, are mostly thought to be residues of the combustion of organic remains (including cereal grains) at very high temperatures. Other remains are generally scarce, but do include fragments of bone (some of which are burnt/calcined), eggshell, fish bones, small mammal/amphibian bones and small pieces of coal (coal 'dust'). It is thought most likely that the latter are intrusive and probably derived from either the spreading of night soil during the later medieval or post-medieval periods or the use of steam implements on the land during the early modern era.

Shells of terrestrial and freshwater obligate molluscs are present at varying densities within all twenty five assemblages. As some retain both good coloration and delicate surface structuring, it is currently unclear how many may be contemporary with the features from which the samples were taken. All four of Evans (1972) ecological groups are represented, with occasional shells of freshwater obligate species being noted within seven assemblages. Open country species are generally predominant, although most of the Roman ditches appear to have been at least seasonally wet or water filled.

Roman pit fills (Table D13)
A total of five samples were taken from pit fills of Roman date. Of these, two are of particular merit. Sample 300, from the fill of pit F.1613, contains a moderate to high density of cereals, chaff and weed seeds, all of which may be derived from cereal processing or storage waste. Similar material is also probably present within pit F.2242 (sample 390), although at a far lower density. The de-watered assemblage from pit F.1649 (sample 308) is of especial note as it includes a number of seeds of plants which were probably growing within or adjacent to the pit. Although the assemblage possibly accumulated as the feature fell out of regular use, these appear to indicate that the area was probably poorly maintained and overgrown by weeds and colonising shrubs. The pit itself appears to have been at least semi-permanently water filled. The remaining assemblages are very sparse, containing only occasional cereals/seeds and flecks of charcoal.

Roman ditch fills (Table D14)
Fourteen assemblages are from ditches, ring gullies and ditch termini. Cereals/seeds are present within all but three assemblages, but in only two instances can they potentially be linked to specific activities. The assemblage from ditch F.1668 (sample 305) is almost entirely composed of grains, chaff (largely spelt glume bases) and comminuted fragments of charcoal/charred wood, and it is suggested that these may all be derived from parching waste. Parching was an essential step in the processing of glumed wheats, as it was the only way to release the grain from the surrounding chaff. However, it also appears to have been a process which occasionally resulted in batches of burnt grain, presumably as a result of inattention or poor supervision. The assemblage from ditch terminus F.1825 (sample 354) also appears to be

derived from cereal processing detritus, although in this instance, chaff is more scarce and seeds are more common, possibly indicating the presence of winnowing waste. The remaining assemblages probably include a mixture of processing detritus and domestic midden waste, much of which was probably accidentally incorporated within the ditch fills. The composition of the mollusc assemblage appears to indicate that grassland conditions were locally prevalent, although most of the ditches were of sufficient depth to be damp or possibly seasonally water filled.

Other Roman features (Table D15)
Samples were taken from dark spread F.1652, from well F.1758, from an ashy lens within pit F.1768, from cremation deposits F.2011 and F.2273 and from enclosure F.1512. Of these, only two are of particular interest. The fill of well F.1758 (sample 315) contains both waterlogged and charred plant remains, with the latter possibly being derived from wind-blow detritus which accidentally accumulated within the well fill. Waterlogged macrofossils are relatively scarce, but they do appear to indicate that the well, which was probably quite muddy at its base, was located within a reasonably well kept grassland habitat. The composition of the assemblage from the ash lens within pit F.1768 (sample 317) is very similar to that from ditch F.1668 (see above), and it is suggested that the material is again probably derived from parching detritus.

Conclusion and recommendations

The introduction of the heavy plough during the Roman period possibly witnessed an increase in local agricultural production (cf. the seeds of stinking mayweed, a plant of heavy clay soils which is rarely seen within charred assemblages before the Roman period). However, the assemblages are still comparatively limited in composition, and it is suggested that pastoralism remained a key part of the local economy, with only a limited quantity of cereal arriving on site to be processed and/or stored.

Only two assemblages (from pit F.1613 and ditch F.1668) contain a sufficient density of material for quantification (i.e. 100+ specimens), with both probably being derived from cereal parching waste. Although this material is indicative of a specific on-site activity, it is tentatively suggested that this does not accurately reflect the true status of the site, which was almost certainly primarily pastoral in nature. As analysis of these assemblages would add very little to the data already contained within this assessment, no further work is recommended at this stage.

Pollen - *Steve Boreham*

Two pollen samples were taken from Roman wells on the AstraZeneca North Plot. Both have been assessed for potential with a view to undertaking full analysis.

Sample <357> 50 cm monolith. Feature 1758. Intervention [2507]

The sample is from a Roman well. The feature was not bottomed due to health and safety concerns resulting from groundwater levels and unstable sediments; consequently the monolith is not from a complete sequence

Description

0 to 10cm [2507.15] Soft light grey silty clay with chalk pellets and pellets of charcoal and organic material. [moderate to good pollen potential]

10 to 22cm [2507.12] Laminated pale buff to grey silty clay. Between 13 and 15 cm there is a darker organic band with some plant material. [moderate to good pollen potential]

22 to 33cm [2507.11] Dark grey silty sand and sandy silt with pockets of lighter grey material. Clearly disturbed. There are occasional pebbles within the matrix. [poor to moderate pollen potential]

33 to 42cm [2507.10] Light grey homogeneous silty clay with faint laminations. [moderate to good pollen potential]

42 to 51cm [2507.06] Light grey silty clay but with inclusions of pale silt and dark organic material small pebbles. Clearly disturbed. [poor to moderate pollen potential]

There are three contexts from <357> with moderate to good pollen potential, and two that are poor to moderate. It is recommended that pollen analysis is attempted on four or five of the contexts (Context 2507.11 being the least well preserved and having the least potential).

Samples <310> 50 cm monolith (base) and <311> 30cm monolith (top). Feature 1649. Intervention [2370]

The samples are from a Roman pit/pit-well and overlap by 8cm at the top of <310>.

Description <310>

0 to 6 cm [/07] Light buff-grey silty sand with small chalk pebbles [poor pollen potential]

6 to 15cm [/06] A very disturbed context. It comprises dark grey silt and lighter grey/pale buff silt with chalk pebbles [poor to moderate pollen potential]

15 to 40cm [/03] Grey silt with occasional chalk pebbles and flint chips [moderate to good pollen potential]

40 to 50cm [/02] Grey sandy silt with shells, bone, chalk and flint pebbles [poor to moderate pollen potential]

Description <311>

0 to 30cm [/02] Grey sandy silt with shells, bone, chalk and flint pebbles [poor to moderate pollen potential]

There is only a single context from <310> that has a moderate to good pollen potential, two that are poor to moderate, and one that is poor. It is recommended that pollen analysis is attempted on the three upper contexts. Note that context 2370/02 is quite thick and will require more than one pollen sample to characterise properly.
A total of four pollen samples are suggested from this feature.

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Figure 1. Site location

Figure 2. Site location, showing previous excavations, trial trenching, and cropmarks (in brown)

Figure 3. South Plot site plan

Figure 4. South Plot phase plan

Figure 5. Aerial photograph of Middle Bronze Age Enclosures (top) and Middle Bronze Age ditch section; Enclosure A, middle ditch (bottom)

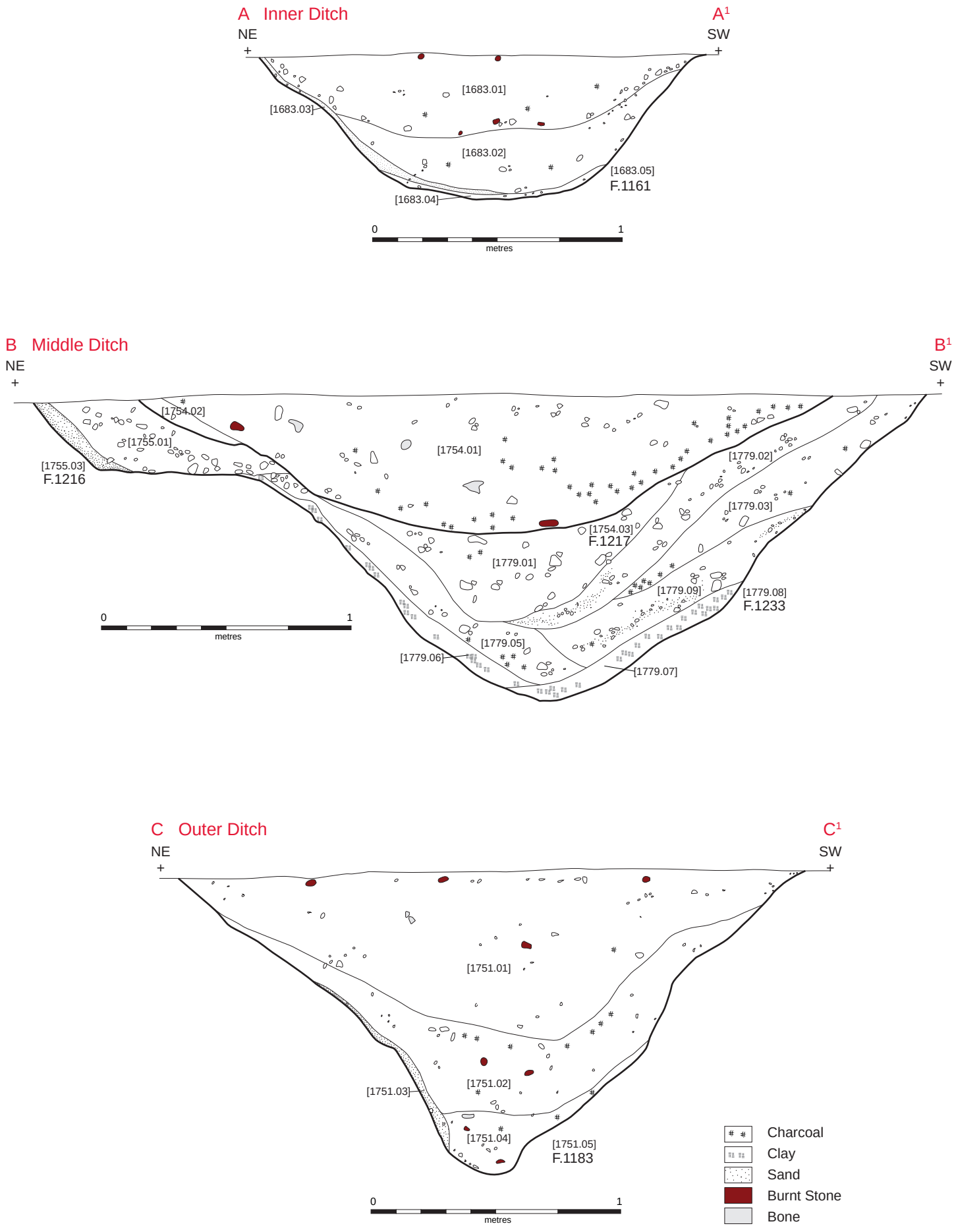


Figure 6. MBA II, Enclosure A ditch sections (located on Fig. 3)

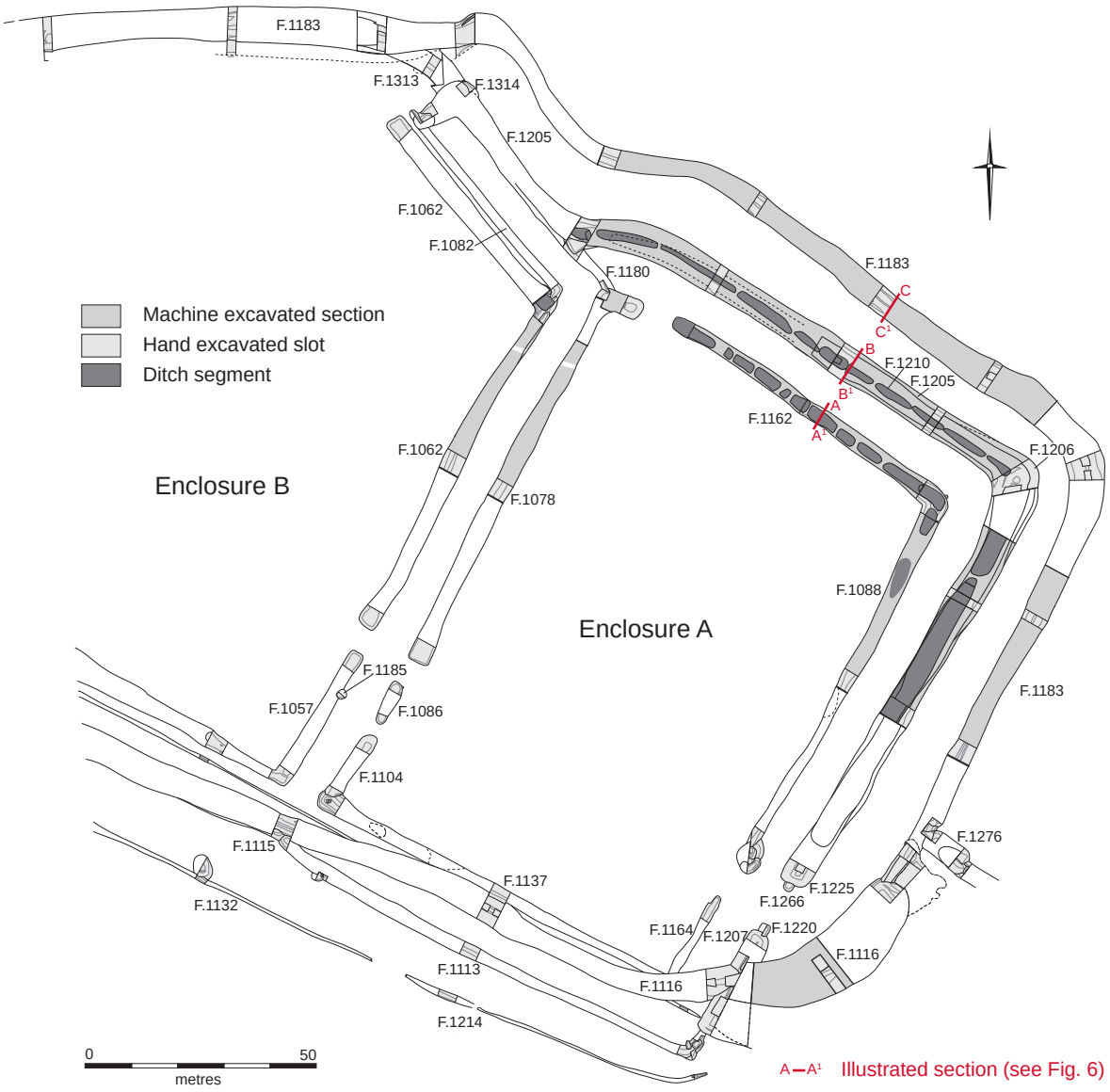


Figure 7. Machine excavated sections of Enclosure A (photograph viewed from the north-west)

Figure 8. Cow skeleton within pit F.1165 (top), and Enclosure C ditch F.1128 with articulated dog/fox skeleton (bottom)

Figure 9. Middle Iron Age pit alignment, PG1 and MBA III ditch F.1008 (top). Middle Iron Age pit F.1018 (bottom)

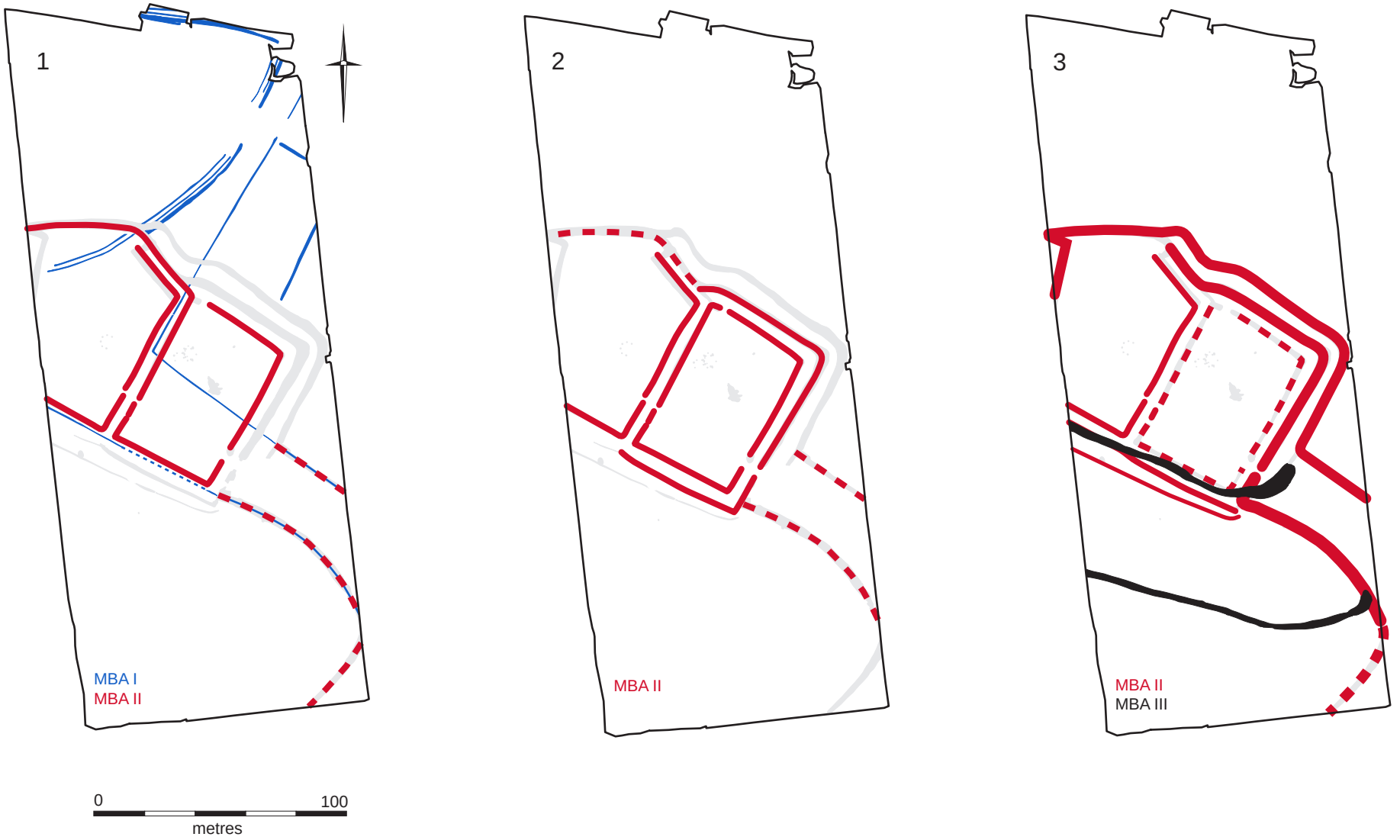


Figure 10. MBA II Enclosure sequence/development

Figure 11. North Plot site plan

Figure 12. Aerial photograph of the North plot and view of flooding and snow during excavation

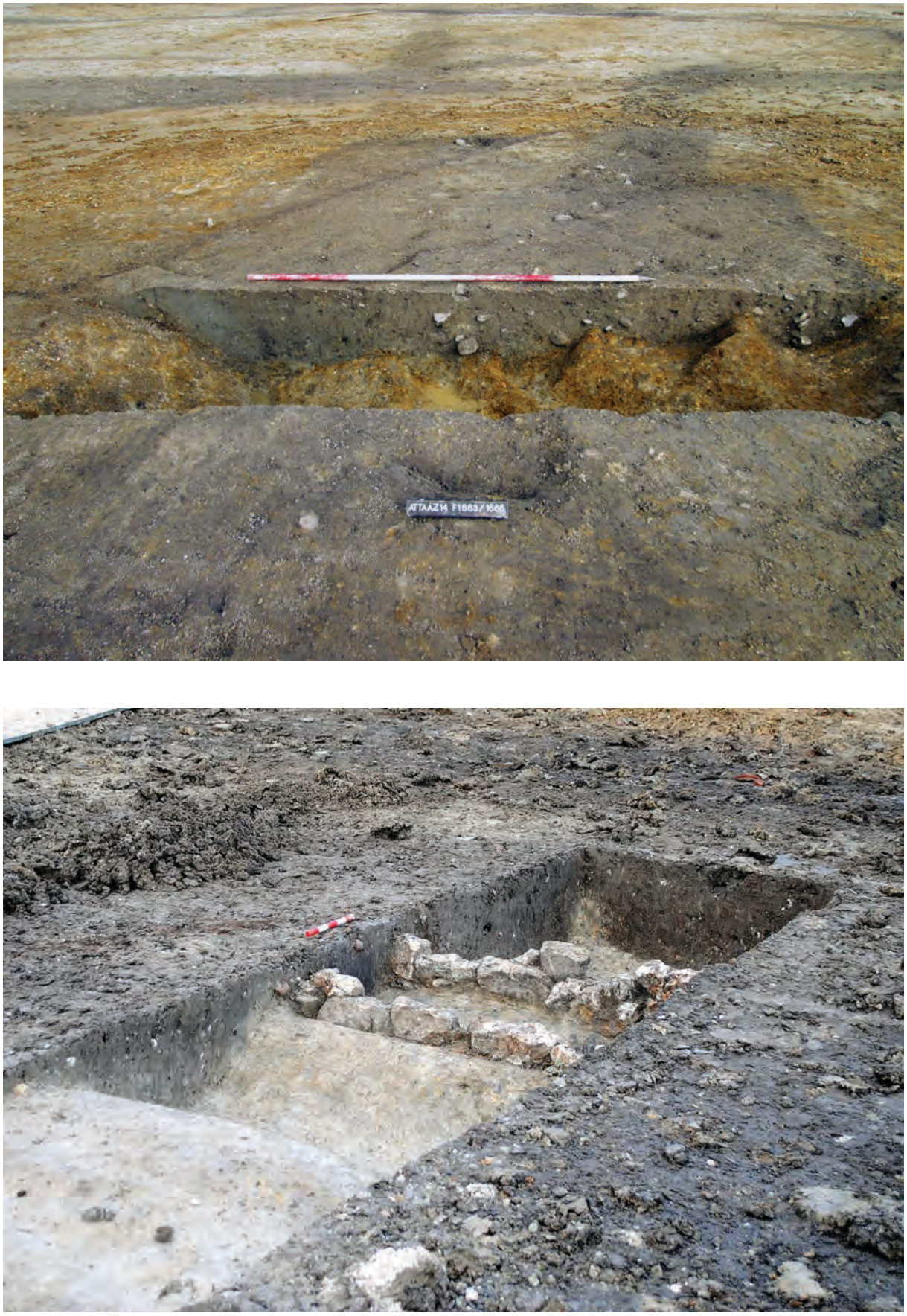


Figure 13. Inter-cutting Roman ditches (top) and stone culvert F.2086 (below)

Figure 14. Roman enclosures

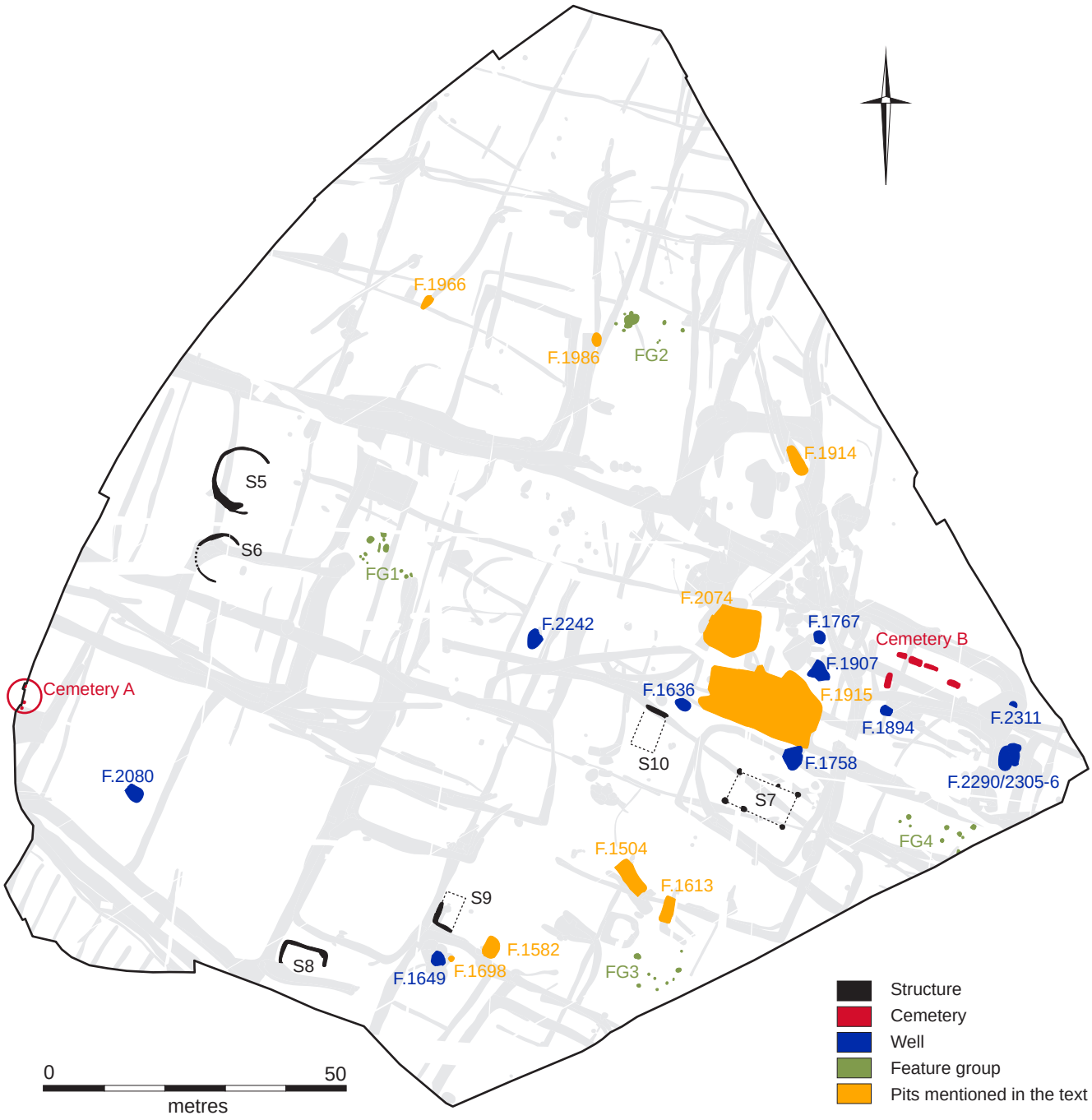


Figure 15. North Plot key archaeological features

Figure 16. Roman structures: Roundhouse S5 (top), and Aisled Building S7 (bottom)

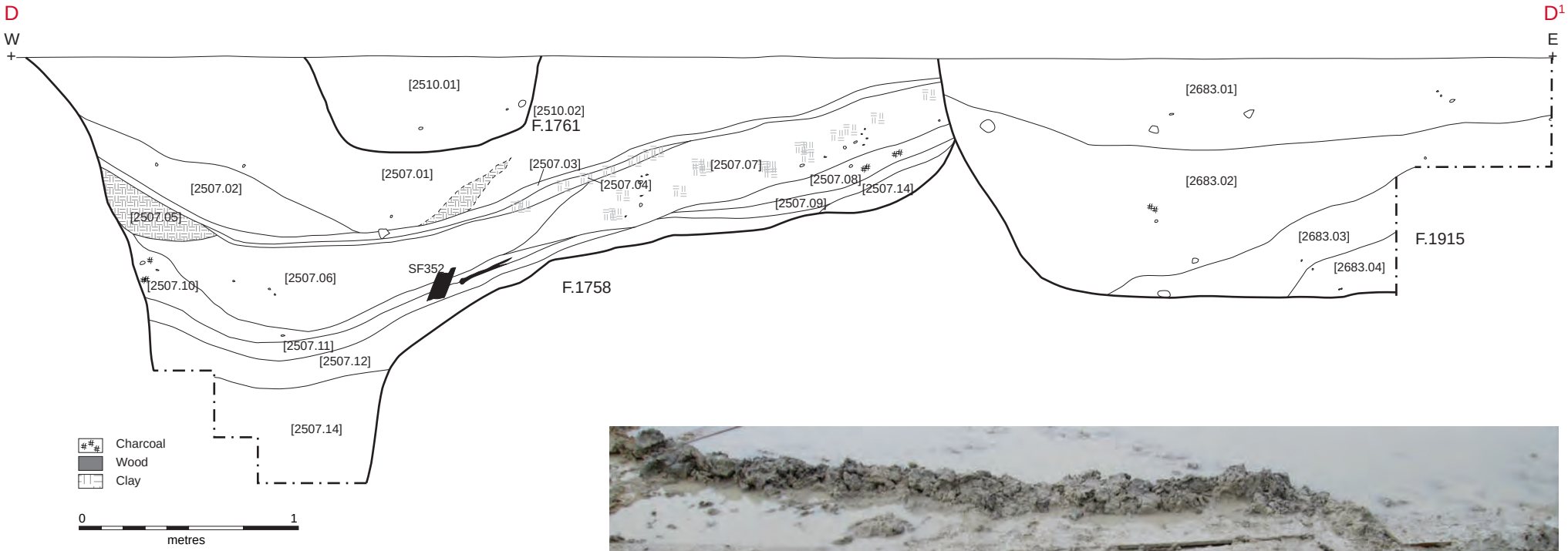


Figure 17. Well F.1758 (located in Fig. 11)

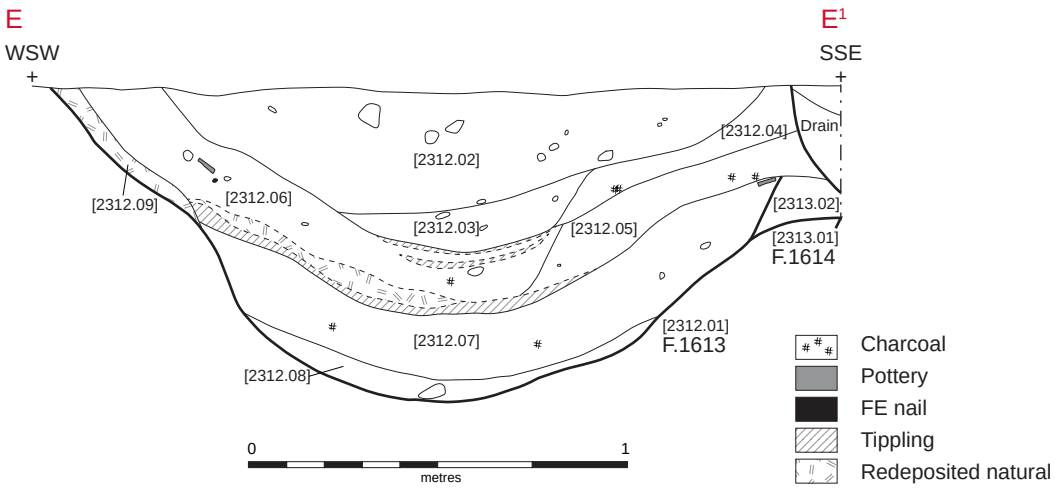


Figure 18. 2nd - 3rd century pit F.1613 (located on Fig. 11)

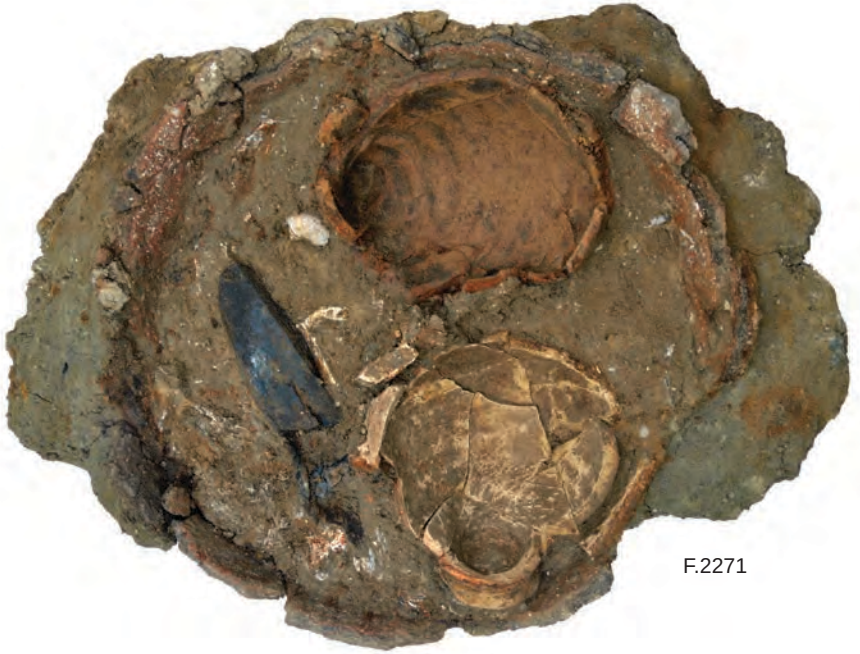
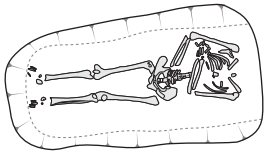
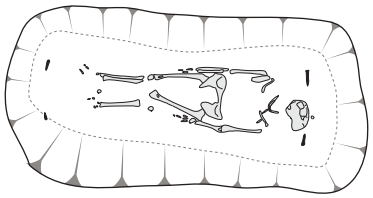


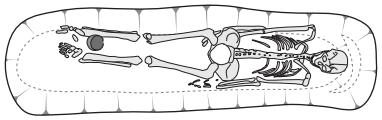
Figure 19. Cremation Cemetery A (note depth of overburden deposit above F.2273)



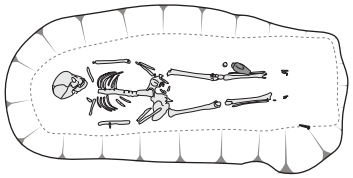
F.1806



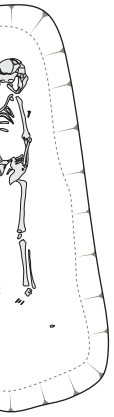
F.1753



F.1752



F.2255



F.2018

F.2018

F.1806

F.1753

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F.2255

0 2

metres

Figure 20. Inhumation Cemetery B

Figure 21. Inhumation Cemetery B, and photograph of Grave F.2255 with glass Unguent Bottle (A) and Indented Beaker (B)

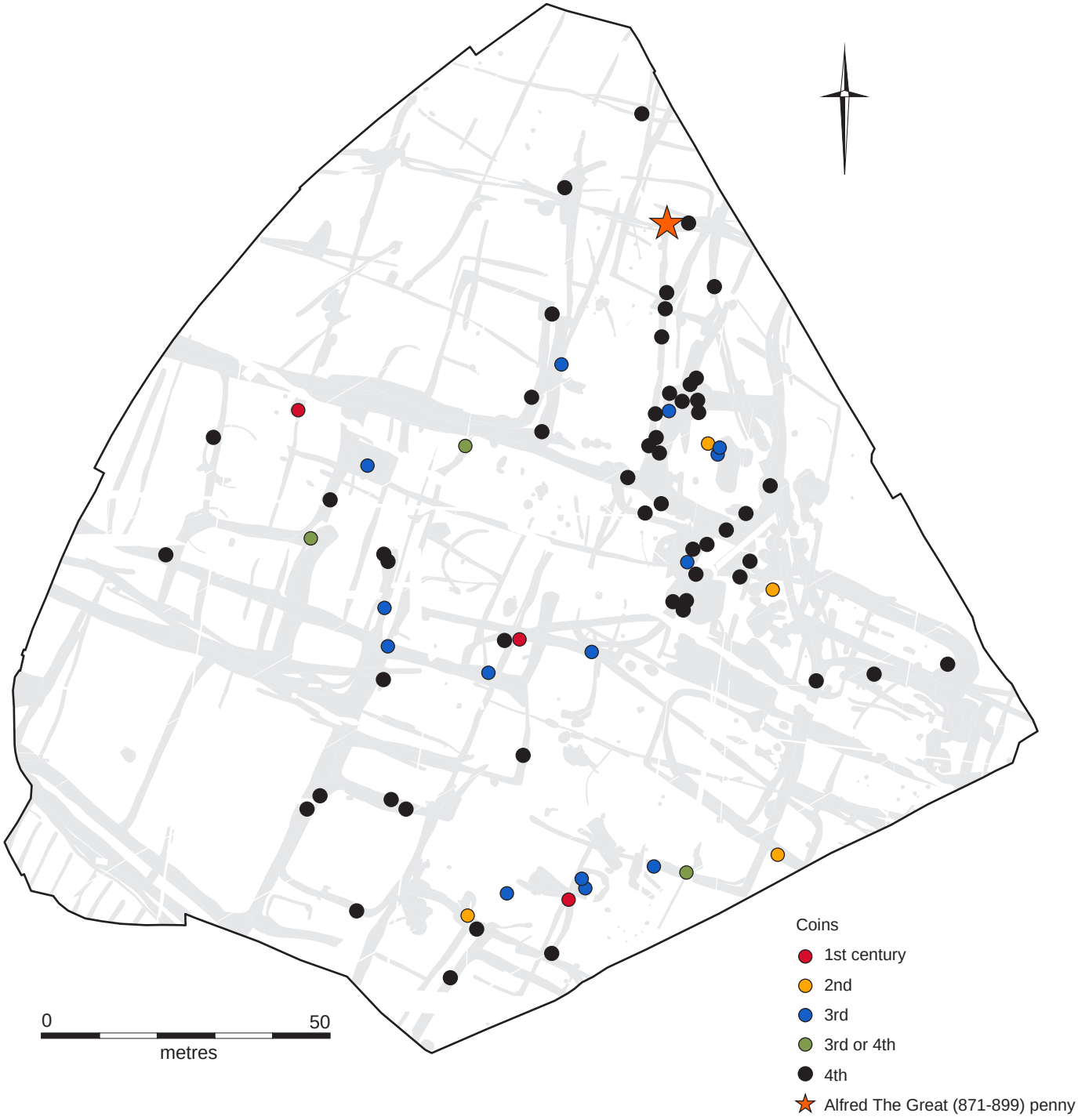

Figure 22. Coin distribution plot

Figure 23. North Plot Early Roman phasing

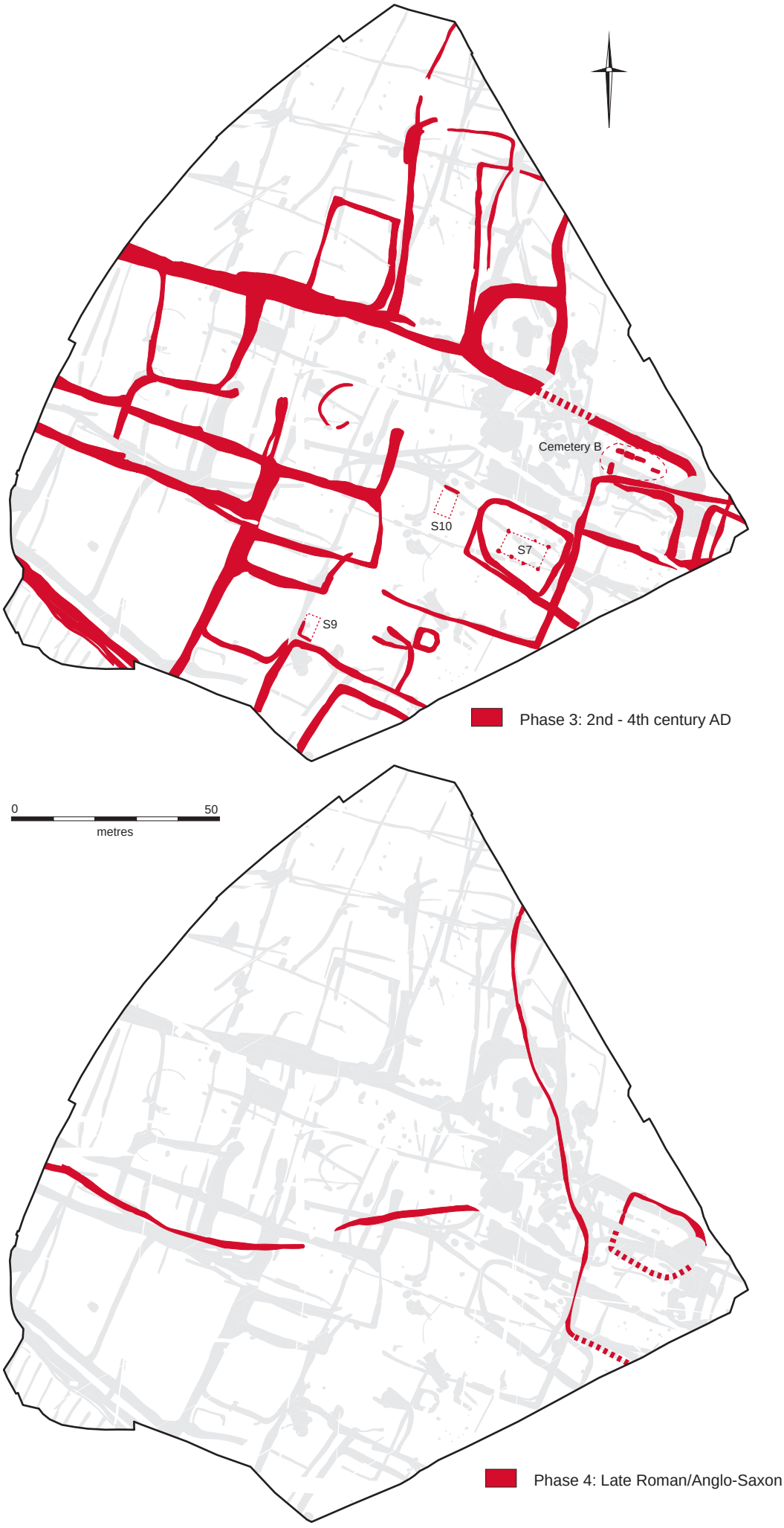

Figure 24. North Plot Late Roman phasing

Figure 25 . Roman pottery distribution plots