Excavation Report

Roman and post-medieval remains at the Abcam Development, Addenbrooke's Hospital, Cambridge

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oxfordarchaeology east east east

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Roman and post-medieval remains at the Abcam Development, Addenbrooke's Hospital, Cambridge

Archaeological Excavation

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Summary

Between 14th November and 2nd December 2016, Oxford Archaeology East (OAE) carried out an excavation at the Abcam development lands, south of Dame Mary Archer Way, Addenbrooke's Hospital, Cambridge (TL 4617 5458). The work was undertaken prior to the construction of a new Biotech and Biomedical research and development laboratory, along with associated infrastructure.

A total of 0.923ha of the development area was excavated, uncovering the continuation of field systems identified in excavations to the north dating to the Early Roman and post-medieval period. A feature of interest identified on site was that of an Early Roman small sub-rectangular enclosure, similar in form to features excavated across the Addenbrookes landscape, though slightly larger. The function of these enclosures is unknown, but possible interpretations include: seasonal shelter for shepherds or cowherds; enclosures for hayricks; or even features associated with mortuary activity.

A total of three sherds of pottery were recovered during excavation, none of which were closely identifiable. A small assemblage of animal bone was also recovered. Environmental preservation was found to be very poor, with no ecofacts being recovered.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 An archaeological excavation was conducted at the Abcam building development, south of Dame Mary Archer Way, Addenbrooke's Hospital, Cambridge (TL 4617 5458, Fig. 1) ahead of the construction of a building for Biotechnical and Biomedical research and development, along with associated infrastructure.

1.1.2 This archaeological excavation was undertaken in accordance with a Brief issued by Andy Thomas of the Cambridgeshire County Council Historic Environment Team (CCC; Planning Application 16/0165/FUL), supplemented by a Written Scheme of Investigation prepared by OA East (Phillips 2016).

1.1.3 The work was designed to mitigate any impact to non-designated heritage assets within the proposed development area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012).

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

1.2 Geology and topography

1.2.1 The underlying geology of the area is West Melbury Marly Chalk Formation at the west, rising over the Tottenhoe Stone onto the Zig Zag Chalk Formation (BGS: Geology of Britain viewer, http://mapapps.bgs.ac.uk/geologyofbritain/home.html, accessed 04/01/17). Excavation revealed that the chalk was capped River Terrace Gravels.

1.2.2 The site is located to the south of Addenbrooke's Hospital, on the eastern side of a wide, shallow valley, with the site itself sloping downwards from the north-east (c. 14.9m OD) to the south-west (c. 14.4m OD).

1.3 Archaeological and historical background

1.3.1 The following is taken from the Written Scheme of Investigation (Phillips 2016).

Relevant fieldwork

1.3.2 The site and the surrounding area has a high density of archaeological remains, which have been extensively investigated over the last fifteen years as a result of Addenbrooke's Hospital expansion and large-scale residential development. The largest of these have been at Clay Farm to the west (the Great Kneighton development), where c. 17 ha were excavated (CHER ECB 3686; Phillips and Mortimer 2012), the 4.9 ha AstraZeneca excavations (CHER ECB4210) and 3.6 ha Cambridge Biomedical Campus (CBC) excavations to the north (CHER ECB4376; Phillips 2015) and the 3 ha Addenbrooke's Hutchison Site (CHER CB15770; Evans et al. 2008) to the north.

1.3.3 Evaluation of the current site consisted of five linear trenches totalling 240m, excavated across the area of the Abcam development. The evaluation revealed a number of ditches which corresponded to the geophysical and cropmark evidence (Graham 2015). The density of both ditches and discrete features was far lower than in the areas directly to the north. Only one ditch contained datable (Roman) pottery. However, the morphology of the ditches and the cropmark evidence indicate that these features were extensions of Roman field systems to the north of the site. The comparative sparseness of the archaeology at this site compared to the density of settlement and occupation in the surrounding landscape was noteworthy and is most likely a result of the site sitting at a slightly lower and wetter contour.

1.3.4 Further work by OA East in the vicinity of the site has included the Addenbrooke's Perimeter Road (CHER ECB3959; Phillips 2013) and the Rising Main Sewer (CHER ECB 3899; Newman and Phillips 2012), which consisted of a trench measuring 8m wide and 480m long, excavated along the southern boundary of the Abcam plot. The results match those of the evaluation on the current site and revealed low density archaeology. A concentration of three ditches, a pit and two postholes were encountered on an area of raised ground in the centre, which lies just to the east of the Abcam plot. Two of the ditches matched the alignment of north-west to south-east orientated linear cropmarks in this location. All the features were undated.

1.3.5 East of the development area OA East has excavated an area at the Bell Language School (CHER ECB3736: Bush 2015), where a number of posthole alignments dating to the Late Bronze period, an Early Iron Age trackway and Early Roman field systems were excavated.

Early prehistory

1.3.6 The combined results of previous excavations have indicated that whilst there was a presence in the area during the Mesolithic and Neolithic periods, the bulk of the evidence is scatters of struck flints within the topsoil and upper fills of later features. At Clay Farm, scattered earlier features, flintwork and pottery were found to be underlying the principal Middle Bronze Age settlement areas (Phillips and Mortimer in prep.).

Later prehistory

1.3.7 Evidence for Early Bronze Age occupation at Clay Farm consisted of three beaker pits and one Collared Urn pit (Phillips and Mortimer in prep.). A sequence of Middle Bronze Age (MBA) strip field and enclosures were identified at Clay Farm. Associated with these were two discrete areas of post built structures and assemblages of dumped settlement related waste.

1.3.8 The excavations at the Bell Language School, 0.5km north-east of the site, produced a series of early boundaries that may be part of a Middle Bronze Age field system (Bush 2015). Further boundaries and a large curvilinear ditch were encountered at CBC directly to the north (Phillips 2015) and is associated with a large triple-ditched enclosure and settlement area excavated by Cambridge Archaeological Unit in the adjacent AstraZeneca area (E. Beadsmoore pers. comm.). To the north-west at the Laboratory of Molecular Biology (Collins 2009) an enclosure of a similar shape, size and fill sequence to those at Clay Farm was excavated. The enclosure ditch contained MBA Deverel-Rimbury pottery and a fragment of an MBA palstave Axe.

1.3.9 Late Bronze Age activity in the area is represented by a large ceramic assemblage at the Hutchison Site. During the Bell Language School excavations, three sets of post hole alignments were encountered, orientated north-north-east to the south-south-west. There were c. 400 post holes covering an approximate area of 120m, possibly to control access to the associated monuments in the area (Bush 2015).

1.3.10 Evidence Early Iron Age activity includes a wide trackway formed by an extensive metalled surface at the Bell Language School (Bush 2015). At Clay Farm there was evidence for 'unenclosed' settlement south of Long Road (Phillips and Mortimer in prep.). At Glebe Farm directly to the south-west of Clay Farm an Early Iron Age settlement was excavated and was focused around a watering hole (Evans et al. 2006)

1.3.11 The Middle – Late Iron Age was represented at Clay Farm by large ditched enclosures at the centre of the site on the higher ground (Phillips and Mortimer in prep.). A rectilinear field system and settlement from this period was identified at the Hutchison site. Located along Francis Crick Avenue was a potential Middle to Late Iron Age ditch and enclosure (Newman et al. 2010).

Romano-British

1.3.12 Locally, sites of a Roman date are widespread compared with those of other periods. It is now well documented that the gravel terraces of the Cam Valley were heavily exploited by Romano-British communities. Early Roman farmsteads and field systems covered around half of the Clay Farm excavation area (Phillips & Mortimer, in prep.), while at the Hutchison Site a rectilinear field system was excavated within which were a series of pottery kilns (Evans & Mackay 2008). A similar kiln was found at Clay Farm. An Early Roman cemetery was also discovered at the Hutchison site and was found to contain sixteen inhumation and three cremation burials. Two high status cremation burials dating to the Conquest period were discovered at Clay Farm, both of which contained imported fineware ceramics, including complete samian, terra nigra and terra rubra vessels, along with associated grave goods.

1.3.13 Further field systems were found at the Energy centre, directly to the south of the current site (M. Collins, pers. comm.), and at the Bell language School to the east (CHER ECB3736; Bush 2015). Approximately 1km to the south of the development area a dense concentration of cropmarks can be seen on land to the east of Shelford Road (CHER 04461; Scheduled Monument – SM 4461); these have been interpreted as Roman (possibly a villa) on the basis of the cropmarks and pottery found during fieldwalking. A Late Roman circular 'monument' was discovered at the southern extreme of Clay Farm, also to the east of Shelford Road (Phillips & Mortimer in prep.).

1.3.14 Further Early Roman features were located on the Papworth excavation, 0.5km to the north of the development area, where continuation of field systems and numerous cultivation rows were excavated, and evidence for metalworking was recorded (Phillips 2015). The excavations conducted by the CAU directly north of the Papworth excavations also recorded significant Roman activity. Dense settlement activity was recorded across the site spanning the Roman period, which included structural remains, wells, pits and a dense pattern of boundary ditches along with five inhumation and two cremation burials (CAU 2015).

1.4 Acknowledgements

1.4.1 Thanks are extended to Annie Calder of Aecom for commissioning the archaeological works on behalf of Cambridge Medipark Ltd (CML). Machine excavation was carried out by Lattenbury Services. The project was managed by Tom Phillips, while Andy Thomas monitored the excavation on behalf of CCC HET. The fieldwork was directed by Pat Moan and undertaken by Emily Abrehart, Daniel Firth and Toby Knight. Site GPS survey was carried out by Dave Brown, Gareth Rees and Pat Moan.

2 Aims and Methodology

2.1 Aims

2.1.1 The original aims of the project were set out in the Brief (Thomas 2016) and Written Scheme of Investigation (Phillips 2016).

2.1.2 The main aims of this excavation were

- To mitigate the impact of the development on the surviving archaeological remains.
- To preserve the archaeological evidence contained within the excavation area by record and to attempt a reconstruction of the history and use of the site.

2.1.3 The aims and objectives of the excavation were developed with reference to National, Regional and Local Research Agendas.

2.2 Research Objectives

2.2.1 This excavation takes place within, and will contribute to the goals of Regional Research Frameworks relevant to this area:

- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24)
- Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3);
- Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8)

2.3 Methodology

2.3.1 The methodology used followed that outlined in the Brief (Thomas 2016) and detailed in the Written Scheme of Investigation (Phillips 2016).

2.3.2 Machine excavation was carried out by two 20 tonne, 360° type excavators using a 2m wide flat bladed ditching bucket, under constant supervision of a suitably qualified and experienced archaeologist.

2.3.3 A total of 0.923ha of the development area was stripped. Stripping of the area stopped when it was deemed by the CCC HET that archaeological remains were sparse.

2.3.4 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

2.3.5 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits. Site survey was carried out using GPS (Leica GS08 fitted with Smartnet).

2.3.6 It was agreed prior to excavation that the site could be excavated in two stages, with stripping of the development area ceasing by agreement with CCC HET once archaeological remains began to dissipate. Prior to machining the second excavation area, two trenches were opened in the south-west corner of the site to identify if storing spoil in the area would cover archaeological features. The first of these (Trench 6) was orientated north-east to south-west and measured 57m long by 4m wide. The second trench (Trench 7) was aligned north-west to south-east, at a right angle to trench 6. Trench 7 measured 20m long by 4m wide but was later widened slightly in order to find the extent of sub-rectangular enclosure **1004**.

2.3.7 A total of five bulk environmental samples were taken during the archaeological works in order to investigate the possible survival of micro- and macro- botanical remains.

3 Results

3.1 Introduction

3.1.1 A number of ditches relating to field systems were recorded across the site. These ditches were a continuation of those excavated and recorded on areas directly to the north of the Abcam lands. Despite little dating evidence from the Abcam development, the ditches can be dated thanks to the evidence from these other excavations (Papworth: Phillips 2015 & CAU excavations: Armour & Collins 2008, Collins 2014 and CAU 2015). A number of geological features along with tree throws were also recorded across the site, many of which were excavated, though none were found to contain any artefacts.

3.1.2 The results of the archaeological works are presented below by period and sub-divided by feature type. They include full descriptions of the features and their fills, including details of any finds recovered. Each feature has been assigned a single number for descriptive purposes, this is used on the figures and in the text. Where a feature was investigated in more than one location, its associated cut numbers are listed in brackets.

3.1.3 A comprehensive list of context numbers is available in Appendix A. Full finds and environmental reports are included as appendices B and C.

3.1.4 The topsoil (1000) across the excavation area consisted of a dark brown clayey silt, approximately 0.45m in thickness. There was minimal subsoil (1001) which consisted of yellowish brown sandy silt and was approximately 0.05m to 0.1m thick. Truncation could clearly be seen on site, with many features being extremely shallow. Paticularly towards the southern limits of the excavation.

3.1.5 The features on this site predominantly consisted of ditches and gullies (Fig. 2). Some of these are a continuation of Early Roman field systems excavated to the north of the site (**1011**, **1016**, **1018**, **1023**, **1029** and **1033**). The narrower, mostly north to south aligned gullies (**1002**, **1025**, and **1031**) are more likely associated with drainage dug during the post-medieval period.

3.2 Period 0: Undated

Pits

3.2.1 Three pits were excavated across the site although all remain undated as no finds were recovered.

3.2.2 Pit **1008** was located in the south-eastern corner of sub-rectangular enclosure **1004**. The pit was sub-circular in plan and had a diameter of 0.55m and a depth of 0.55m. The sides were moderately sloping and the base was concave. The pit contained two fills, the lower was made up of a very dark grey clayey silt and the upper of a light brownish yellow sandy silt.

3.2.3 Pit **1076** was located directly east of ditch **1025** and was circular in plan and had a diameter of 0.6m and a depth of 0.26m. The sides were almost vertical and the base was flat with a sharp break of slope. It was filled by a dark brownish grey clayey silt.

3.2.4 Pit **1035** was 2.55m in length, 0.4m in width and 0.1m in depth. It had shallow, gently sloping sides and a flat base. It contained a single fill which consisted of a light brownish grey silty clay.

Natural features

3.2.5 Around fifty natural features were excavated across the site. The majority of these were not numbered as they were interpreted as tree throws or natural hollows caused by decomposed vegetation. These features (*e.g.* **1068**) were in general irregular in shape and varied in size between 0.4m to 2m in diameter, and 0.05m to 0.3m deep. The sides were usually moderately sloping and the bases were irregular. The features generally had one of two fills. The lower fill consisted of a dark, soft silt with very high manganese content, and the upper of a dark brownish grey sandy silt, usually no thicker than 0.1m.

3.3 Period 1: Early Roman

Ditches and Gullies

Boundary Group 1

3.3.1 This field system consisted of ditches **1011**, **1023**, **1029**, **1037** and **1080**. These features are all part of one larger Early Roman field system located on the lower ground, forming paddocks for livestock.

3.3.2 The main boundary of the group was ditch **1011** (**1014, 1060, 1065, 1073, 1086, 1089, 1093, 1095, 1101, 1103** and **1105**), which ran broadly north-east to south-west for 128m (Plate 1). The ditch varied in width from 0.6m to 1.3m and in depth from 0.05m to 0.32m with gentle to moderately sloping sides and a flat base. The northernmost half of the ditch generally contained two fills, the lower fill consisted of a light grey sandy silt and the upper of a dark brownish grey managanese-rich clay. The southern half of the ditch was shallower and more truncated, almost completely disappearing in places. In the shallower sections of the ditch, only one fill (1090, 1094, 1096, 11021104 and 1106) was present which was made up of a dark brownish grey clayey silt. A total of 56g of large mammal bone was recovered from the fill of this ditch. Ditches **1023** and **1029** both ran perpendicular off this ditch and the southern-most part of the ditch was truncated by a post-medieval drainage ditch (**1025**).

3.3.3 Ditch **1029** (**1041,1043, 1071** and **1091**) ran north-west to south-east and joined ditch **1011** at its westerly end. It varied in width from 0.53m to 0.9m and in depth from 0.1m to 0.25m. The ditch had shallow, gently sloping sides and a flat base. It contained only one fill which consisted of a dark grey silty clay.

3.3.4 Ditch **1023** (**1097**) ran broadly east to west and joined ditch **1011** at its eastern end. The feature was 1m wide and varied in depth from 0.1 to 0.18m. It had gently sloping, shallow sides and a concave base and was filled by a dark grey clayey silt.

3.3.5 Gully **1037** and ditch **1080** are included within the Early Roman period, despite lack of dating, due to their alignment with the other known Early Roman ditches. Due to truncation on the site, it is likely these ditches would have formed part of the same field system prior to truncation by ploughing.

3.3.6 Gully **1037** (**1039**) ran north-west to south-east and terminated at its south-east end. It was approximately 0.4m wide and 0.05m deep with shallow sides and a concave base. It was filled by a mid brownish grey silty clay.

3.3.7 Ditch **1080** (**1082**) was orientated north-east to south-west and terminated at the south-western end. It varied in width from 0.44m to 0.55m and in depth from 0.16m to 0.22m and had moderately steep sides with a concave base. It contained two fills, the lower consisted of a mid grey silty sand and the upper of a dark brownish grey sandy silt.

Boundary Group 2

3.3.8 This boundary group consisted of two ditches (**1016** and **1033**) and a gully (**1018**) on a north-west to south-east alignment, running for approximately 33m though the north-eastern-most corner of the excavation area.

3.3.9 Ditch **1033** (**1045**, **1048** and **1053**) (Plate 2) was approximately 1m wide and varied in depth from 0.26m to 0.36m with moderately steep sides and a flat base. The ditch had an upper and lower fill. The lower, basal fill was a dark grey sandy silt and the upper fill consisted of a mid greyish brown sandy silt. This ditch was truncated by later ditch **1031**.

3.3.10 Ditch **1016** (**1021, 1051**, **1056** and **1058**) was broadly parallel to ditch **1033** (Plate 2) and measured 1m wide with a depth ranging from 0.17m to 0.3m. The sides were gently sloping and the base was flat. It was filled by a mid greyish brown sandy silt. Less than 1g of animal bone was recovered from the ditch. A recut was observed on the northernmost edge of the ditch (**1058**).This recut ran north-west to south-east along the northern side of ditch **1016**. It was 0.7m wide and 0.18m deep with gently sloping sides and a flat base. It contained one fill which consisted of a dark greyish brown sandy silt.

3.3.11 Gully **1018** was 0.4m wide and 0.17m deep, with steeply sloping sides and a flat base. It contained a single fill which was made up of a mid brown sandy silt.

Sub-rectangular Enclosure

3.3.12 In the preliminary trenches (6 and 7) a sub-rectangular enclosure **1004** was found (Plate 3, Fig. 2 inset). Feature **1004** (**1006**) consisted of a gully that was sub-rectangular in plan. The gully was 0.4m wide and 0.1m deep. It was filled by a dark greyish brown clayey silt. A total of 4g of animal bone and 2 sherds of pottery (weighing less than 1g) were recovered from the fill. Once fully recorded, this enclosure was 100% excavated. Similar features are found across the Addenbrooke's landscape and have a number of interpretations; features very similar in form were found directly north-west of the development area (Armour & Collins 2008).

3.4 Period 2: Post-Medieval

3.4.1 All features within this period relate to drainage of this lower ground, with field drains and ditches on a broad north to south alignment, running through the excavation area for between 58m to 67m.

Ditches and Gullies

3.4.2 Ditch **1031** (**1063**) was located in the eastern part of site, with its width varying from 0.36m to 0.58m and its depth from 0.16 to 0.23m with moderately steep sides and a flat base. It was filled by a dark grey clayey silt. The northern-most end of the ditch truncated earlier ditch **1033**.

3.4.3 Gully **1025** (**1027** and **1107**) measured approximately 0.6m wide and 0.3m deep with steep sides and a flat base. It contained only one fill which consisted of a dark greyish brown silty clay.

3.4.4 Ditch **1002** (1099) was truncated to the north by a field drain on the same alignment. It varied in width from 0.4m to 0.9m and in depth from 0.23m to 0.53m. It had steeply sloping sides and a flat base and was filled by a dark greyish brown clayey silt. The ditch was truncated by later field drain **1078**.

Field Drains

3.4.5 There were five field drains present in the western area of the site. These were all running parallel on the same alignment as gullies **1025** and **1031**; broadly north to south and running into the current drainage ditch at the south of the site. One field drain trench was excavated and recorded as ditch **1078.** This was 0.8m wide and 0.4m deep with steep sides and a flat base. It contained one fill above the field drain, which consisted of a dark brownish grey silty clay. A single residual 3g fragment of Romano-British pottery was recovered from the fill.

3.5 Finds and Environmental Summary

3.5.1 A total of three sherds of pottery were recovered from the excavation, the assemblage is not closely datable and the fragments are abraded. Animal bone recovered from the excavation consisted of 5g of unidentifiable bone and a 56g fragment of large mammal bone.

3.5.2 Environmental results were very poor, with no preserved plant remains being recovered from the five samples taken.

4 Discussion and Conclusions

4.1 Late Iron Age and Early Roman

4.1.1 There was a distinct lack of finds recovered from this excavation and therefore most features remain undated. However, due to the recent intensive archaeological works in the Addenbrooke's area, some of the features from the Abcam site have been dated by comparison with other excavations to the north. Ditch **1011** appears to correspond to ditch **681** from the Energy centre site (excavated by Cambridge Archaeological Unit) and Late Iron Age (LIA)/Early Romano-British (ERB) pottery was recovered from the ditch on that site (Collins 2014). Ditches **1016** and **1033** seem to equate with ditch **138** excavated during the Perimeter road works. This ditch has elsewhere also been dated to the Early Roman period (Phillips 2013).

4.1.2 The ditches in the north-eastern part of this excavation (Boundary Groups 1 and 2) appeared to be a continuation of the LIA/ERB field systems to the north. The lack of finds and discrete features in the area suggest that this land was on the periphery of the LIA/ERB settlement and main agricultural activities. The land is lower here and would probably have been more susceptible to flooding which would explain the lack of settlement activity.

4.1.3 The sub-rectangular enclosure (**1004**) located in the south-west of the site is an example of a series of unusual features seen across the Addenbrooke's landscape. These rectilinear gullies average around 3.6m long and 1.9m wide (internal measurements) and are characterised by a shallow, narrow gully devoid of internal features. Several of these features were discovered at Site 7 of the Addenbrooke's Access Road excavation, located just to the west of the Abcam development (Armour & Collins 2008). Others have been recorded at Clay Farm and Bell Language School (Phillips & Mortimer 2012, Bush 2015). Feature **1004** is somewhat larger than any of the other examples so far discovered in this area with its internal length measuring 7.2m and its width 2.2m. The closest feature in size is the one discovered at Bell Language School which measured 5.47m by 1.96m (Bush 2016).

4.1.1 These features largely remain undated although they have often been associated with LIA/ERB field systems. The interpretation of these features is still debated but they all appear to be situated away from settlement activity and at a similar (low) height in the landscape (Bush 2015). These fields would likely have been meadowland during the Romano-British period, meaning their use primarily would be during the summer months, with the area becoming too boggy during winter. This has given rise to the theory that they have some kind of seasonal and/or agricultural purpose. Ideas pertaining to the exact function include; a hayrick or slightly raised platform for storing fodder or a raised bed for certain plants or crops (Bush 2015). Another possible use could have been seasonal shelter for shepherds or cowherds whilst tending to their animals during the summer months. Either of these interpretations would consistent with disperse agricultural activity. Another possible theory is that the features formed some part of mortuary activity on the periphery of settlement, though without further evidence this is conjecture.

4.2 Post-medieval and modern

4.2.1 The post-medieval and modern features on this site suggest the agricultural landscape continued on the site throughout history. To the north, a post-medieval field system was discovered at Papworth (Phillips 2015) and this system appears to continue throughout the Abcam development. This field system shows the land was still under agricultural use, though sparse compared to the activity to the north. The excavation of drainage ditches and field drains does show that efforts were made to improve the land for cultivation as opposed to being left as arable fields.

4.3 Conclusion

4.3.1 This excavation, despite having a relative lack of archaeological features compared to other nearby excavations, has helped improve knowledge of the surrounding historic landscape. The excavation has shown that Early Roman settlement activity seen to the north of the excavation area does not continue southwards; this lack of features from all periods suggests the land has always been on the periphery of activity due to being significantly wetter than the surrounding land.

Appendix A. Context Inventory

Context	Cut	Category	Breadth	Depth	Feature Type	Colour	Fine component	Shape in Plan	Side	Base	Orientation
1000		layer			Top soil						
1001		layer			Sub-soil						
1002	1002	cut	0.9	0.53	ditch			linear	steep slope	flat	NE-SW
1003	1002	fill	0.9	0.53	ditch	dark greyish brown	clayey silt				
1004	1004	cut	0.4	0.1	ditch			curvilinear	moderate slope	flat, quite uneven	NE-SW
1005	1004	fill	0.4	0.1	ditch	dark greyish brown	clayey silt				
1006	1006	cut	0.4	0.1	ditch			curvilinear	moderate slope	flat	NE-SW
1007	1006	fill	0.4	0.1	ditch	dark greyish brown	clayey silt				
1008	1008	cut	0.55	0.15	pit			circular	moderate slope	concave	
1009	1008	fill		0.1	pit	very dark grey	clayey silt				
1010	1008	fill		0.07	pit	light brownish yellow	sandy silt				
1011	1011	cut	1.2	0.32	ditch			linear	moderate slope	flat	N-S
1012	1011	fill		0.1	ditch	light grey	sandy silt				
1013	1011	fill		0.2	ditch	dark grey	clayey silt				
1014	1014	cut	1.25	0.3	ditch			linear	moderate slope	flat	N-S
1015	1014	fill		0.2	ditch	dark grey	clayey silt				
1016	1016	cut	1	0.3	ditch			linear	gentle slope	flat	NW-SE
1017	1016	fill		0.3	ditch	mid greyish brown	sandy silt				
1018	1018	cut	0.4	0.17	gully			linear	steep	flat	NW-SE
1019	1018	fill		0.17	gully	mid greyish brown	sandy silt				
1020	1014	fill		0.1	ditch	light grey	sandy silt				

Context	Cut	Category	Breadth	Depth	Feature Type	Colour	Fine component	Shape in Plan	Side	Base	Orientation
1021	1021	cut	1.1	0.28	ditch			linear	gentle and then steep	flat	NW-SE
1022	1021	fill		0.28	ditch	mid greyish brown	sandy silt				
1023	1023	cut	1	0.1	ditch			linear	shallow	flat	NE-SW
1024	1023	fill		0.1	ditch	dark grey	clayey silt				
1025	1025	cut	0.6	0.3	gully			linear	steep	flat	N-S
1026	1026	fill		0.3	gully	dark greyish brown	silty clay				
1027	1027	cut	0.6	0.3	gully			linear	steep	flat	N-S
1028	1027	fill	0.6	0.3	gully	dark greyish brown	silty clay				
1029	1029	cut	0.53	0.11	ditch			linear	shallow	concave	E-W
1030	1029	fill		0.11	ditch	dark grey	clayey silt				
1031	1031	cut	0.36	0.16	gully			linear	steep	concave	NW-SE
1032	1031	fill		0.16	gully	dark grey	clayey silt				
1033	1033	cut	0.9	0.33	ditch			linear	steep	flat	NW-SE
1034	1033	fill		0.33	ditch	dark brownish grey	sandy silt				
1035	1035	cut	0.4	0.1	pit			sub-circular	shallow	flat	N-S
1036	1035	fill		0.1	pit	light brownish grey	silty clay				
1037	1037	cut	0.4	0.05	gully			linear	shallow	concave	N-S
1038	1037	fill		0.05	gully	mid brownish grey	silty clay				
1039	1039	cut	0.3	0.05	gully terminus			linear	shallow	concave	N-S
1040	1039	fill	0.3	0.05	gully terminus	mid brownish grey	silty clay				
1041	1041	cut	0.8	0.25	ditch			linear	regular	flat	E-W
1042	1041	fill		0.25	ditch	dark greyish brown	silty clay				
1043	1043	cut	0.9	0.2	ditch			linear	regular	flat	E-W
1044	1043	fill		0.2	ditch	dark greyish brown	silty clay				
1045	1045	cut	1.1	0.36	ditch			linear	moderate	concave	E-W
1046	1045	fill		0.12	ditch	dark grey	sandy silt				

Context	Cut	Category	Breadth	Depth	Feature Type	Colour	Fine component	Shape in Plan	Side	Base	Orientation
1047	1045	fill		0.24	ditch	mid greyish brown	silty sand				
1048	1048	cut	0.9	0.26	ditch			linear	moderate	concave	E-W
1049	1048	fill		0.08	ditch	dark grey	sandy silt				
1050	1048	fill		0.18	ditch	mid greyish brown	silty sand				
1051	1051	cut	1	0.17	ditch			linear	shallow	concave	E-W
1052	1051	fill		0.17	ditch	mid greyish brown	silty sand				
1053	1053	cut	1	0.36	ditch			linear	steep slope	flat	NW-SE
1054	1053	fill		0.2	ditch	dark brownish grey	sandy silt				
1055	1053	fill		0.16	ditch	mid greyish brown	sandy silt				
1056	1056	cut	0.9	0.22	ditch			linear	gentle slope	flat	NW-SE
1057	1056	fill		0.22	ditch	dark greyish brown	sandy silt				
1058	1058	cut	0.7	0.18	ditch			linear	gentle slope	flat	NW-SE
1059	1058	fill		0.18	ditch	dark greyish brown	sandy silt				
1060	1060	cut	1.3	0.3	ditch			linear	regular	flat	N-S
1061	1060	fill	0.8	0.1	ditch	light brownish grey	silty clay				
1062	1060	fill	1.3	0.2	ditch	dark greyish brown	peaty clay				
1063	1063	cut	0.58	0.23	ditch			linear	moderate	flat	N-S
1064	1063	fill		0.23	ditch	dark grey	sandy silt				
1065	1065	cut	1.3	0.15	ditch			linear	shallow	flat	N-S
1066	1065	fill		0.05	ditch	mid brownish grey	silty clay				
1067	1065	fill		0.1	ditch	dark greyish brown	peaty clay				
1068	1068	cut	1.2	0.3	natural hollow			irregular	moderate slope	irregular	NE-SW
1069	1068	fill		0.1	natural hollow	dark blackish grey	peaty silt				
1070	1068	fill		0.2	natural hollow	dark brownish grey	sandy silt				
1071	1071	cut	0.65	0.1	ditch			linear	shallow	concave	NW-SE
1072	1071	fill		0.1	ditch	dark grey	sandy silt				

Context	Cut	Category	Breadth	Depth	Feature Type	Colour	Fine component	Shape in Plan	Side	Base	Orientation
1073	1073	cut	1.25	0.1	ditch			linear	shallow	flat	N-S
1074	1073	fill	0.8	0.05	ditch	light brownish grey	silty clay				
1075	1073	fill	1.25	0.05	ditch	dark brownish grey	peaty clay				
1076	1076	cut	0.6	0.26	pit			circular	steep, almost vertical	flat	
1077	1076	fill		0.26	pit	dark brownish grey	sandy clayey silt				
1078	1078	cut	0.8	0.4	ditch			linear	steep	flat	N-S
1079	1078	fill		0.4	ditch	dark brownish grey	silty clay				
1080	1080	cut	0.55	0.22	ditch			linear	steep slope	flat	N-S
1081	1080	fill		0.05	ditch	mid grey	sandy silt				
1082	1082	cut	0.44	0.16	ditch terminus			linear	moderate	concave	N-S
1083	1082	fill		0.04	ditch terminus	light brownish grey	silty sand				
1084	1082	fill		0.18	ditch terminus	dark grey	sandy silt				
1085	1080	fill		0.16	ditch	dark brownish grey	clayey sandy silt				
1086	1086	cut	1.2	0.25	ditch			linear	irregular	flat	N-S
1087	1086	fill	0.75	0.15	ditch	light brownish grey	silty clay				
1088	1086	fill	1.2	0.1	ditch	dark brownish grey	peaty silt				
1089	1089	cut	1.1	0.14	ditch			linear	shallow	concave	N-S
1090	1089	fill		0.14	ditch	dark grey	sandy silt				
1091	1091	cut	0.68	0.19	ditch			linear	steep	concave	NW-SE
1092	1091	fill		0.19	ditch	dark grey	silty clay				
1093	1093	cut	0.6	0.05	ditch			linear	very gentle slope	flat	N-S
1094	1093	fill		0.05	ditch	dark brownish grey	clayey silt				
1095	1095	cut	1	0.05	ditch			linear	very shallow slope	flat	N-S
1096	1095	fill		0.05	ditch	dark brownish grey	clayey silt				

Context	Cut	Category	Breadth	Depth	Feature Type	Colour	Fine component	Shape in Plan	Side	Base	Orientation
1097	1097	cut	1	0.18	ditch			linear	shallow	concave	E-W
1098	1097	fill		0.18	ditch	dark grey	sandy clayey silt				
1099	1099	cut	0.4	0.23	ditch			linear	steep	flat	N-S
1100	1099	fill		0.23	ditch	dark greyish brown	peaty silt				
1101	1101	cut	1.1	0.24	ditch			linear	shallow	concave	N-S
1102	1101	fill		0.24	ditch	dark grey	sandy silt				
1103	1103	cut	1.15	0.13	ditch			linear	shallow	flat	N-S
1104	1103	fill		0.13	ditch	mid brownish grey	silty clay				
1105	1105	cut	0.9	0.17	ditch			linear	shallow	flat	N-S
1106	1105	fill		0.17	ditch	mid yellowish brown	silty clay				
1107	1107	cut	0.5	0.4	gully			linear	steep	flat	N-S
1108	1107	fill		0.4	gully	dark greyish brown	peaty clay				

Appendix B. Finds Reports

B.1 Pottery

By Carole Fletcher

B.1.1 The archaeological works produced a pottery assemblage of three sherds, weighing 0.003kg. The assemblage is not closely datable and the condition of the pottery is abraded.

B.1.2 From Trench 7, ditch **1004** produced two small, abraded fragments, weighing less than 1g of oxidised sandy ware of uncertain date.

B.1.3 Ditch **1078** produced a single abraded sherd of oxidised sandy ware (3g), that has suffered surface loss. The small size of the sherd and level of abrasion makes identification problematic, however it is most likely a Roman Sandy Oxidised ware of late 1st-4th century date.

Conclusion

B.1.4 The sherds recovered exhibit a high degree of abrasion, indicating reworking, and the levels of pottery across the site are low and the pottery has most likely been spread across the site as part of a manuring scatter.

Appendix C. Environmental Reports

C.1 Environmental samples

By Rachel Fosberry

Introduction

C.1.1 Five bulk samples were taken from features within the excavated area at 'Abcam', Addenbrookes Site, Cambridge in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations. The samples were taken from ditches and gullies that relate to a Roman field system and an undated pit.

Methodology

C.1.2 One bucket (approximately 10 litres) of each bulk sample was processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60.

Results

C.1.3 The flots were comprised totally of small mollusc shells with no preservation of plant remains.

Sample No.	Context No.	Cut No.	Feature Type	Volume processed (L)
10	1005	1004	Ditch	8
11	1046	1045	Ditch	7
12	1077	1076	Pit	8
13	1090	1089	Ditch	6
14	1088	1086	Ditch	9

Table 1: Environmental samples from ECB 4840

C.2 Faunal Remains

By Zoe Ui Choileain

Introduction

C.2.1 A total weight of 61g of animal bone was recovered from the excavations at the Abcam building, Cambridge biomedical campus, Addenbrookes.

Methodology

C.2.2 All identifiable elements were recorded using a version of the criteria described in Davis (1992). Identification of the assemblage was undertaken with the aid of Schmid (1972). Preservation condition was evaluated using the 0-5 scale devised by Brickley and McKinley (2004).

Results

C.2.3 Results are present below according to collection method (i.e. hand-collection or flotation) with erosion grades (simplified version of Brickley & McKinley 2004, 14-15): 0 (surface morphology clearly visible, fresh appearance), 1 (light and patchy surface erosion), 2 (more extensive surface erosion than grade 1), 3 (most of bone surface affected by some degree of erosion, 4 (all of bone surface affected by erosive action), 5 (heavy erosion across whole surface, completely masking normal surface morphology).

Context	*Element*	*No. of frags*	*Taxon*	*Collection method*	*Erosion*	*Weight (g)*
1005	Indet	2	Indet	Hand	4	4
1013	Long Bone	7	Large mammal	Hand	4	56
1022	Indet	2	Indet	Hand	4	1

C.2.4 The recovered faunal remains are too small and fragmented to yield any further information.

Appendix D. Bibliography

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APPENDIX E. OASIS REPORT FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar3-270427		
Project Name	Abcam Building, Cambridge Biomedical Campus, Addenbrooke's Hospital		
Project Dates (fieldwork) Start	14-11-2016	Finish	02-12-2016
Previous Work (by OA East)	Yes	Future Work	No

Project Reference Codes

Site Code	ECB4840	Planning App. No.	16/0165/FUL
HER No.	ECB4840	Related HER/OASIS No.	oxfordar3-205876

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPG16

Please select all techniques used:

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

Monument Types/Significant Finds & Their Periods

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

Monument	Period	Object	Period
Ditch	Roman 43 to 410	pottery	Uncertain
Pit	Uncertain	animal bone	Uncertain
Hayrick	Roman 43 to 410		Select period...

Project Location

County	Cambridgeshire	Site Address (including postcode if possible)	
District	Cambridge City	Abcam, Dame Mary Archer Way, Cambridge, CB2 0SL	
Parish	Cambridge		
HER	Cambridgeshire		
Study Area	9060 sqm	National Grid Reference	TL 4617 5458

Project Originators

Organisation	OA EAST
Project Brief Originator	Andy Thomas
Project Design Originator	Tom Phillips
Project Manager	Tom Phillips
Supervisor	Pat Moan

Project Archives

Physical Archive	Digital Archive	Paper Archive
Cambs County Store	OA East	Cambs County Store
ECB4840	CAMATF16	ECB4840

Archive Contents/Media

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

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

Notes:

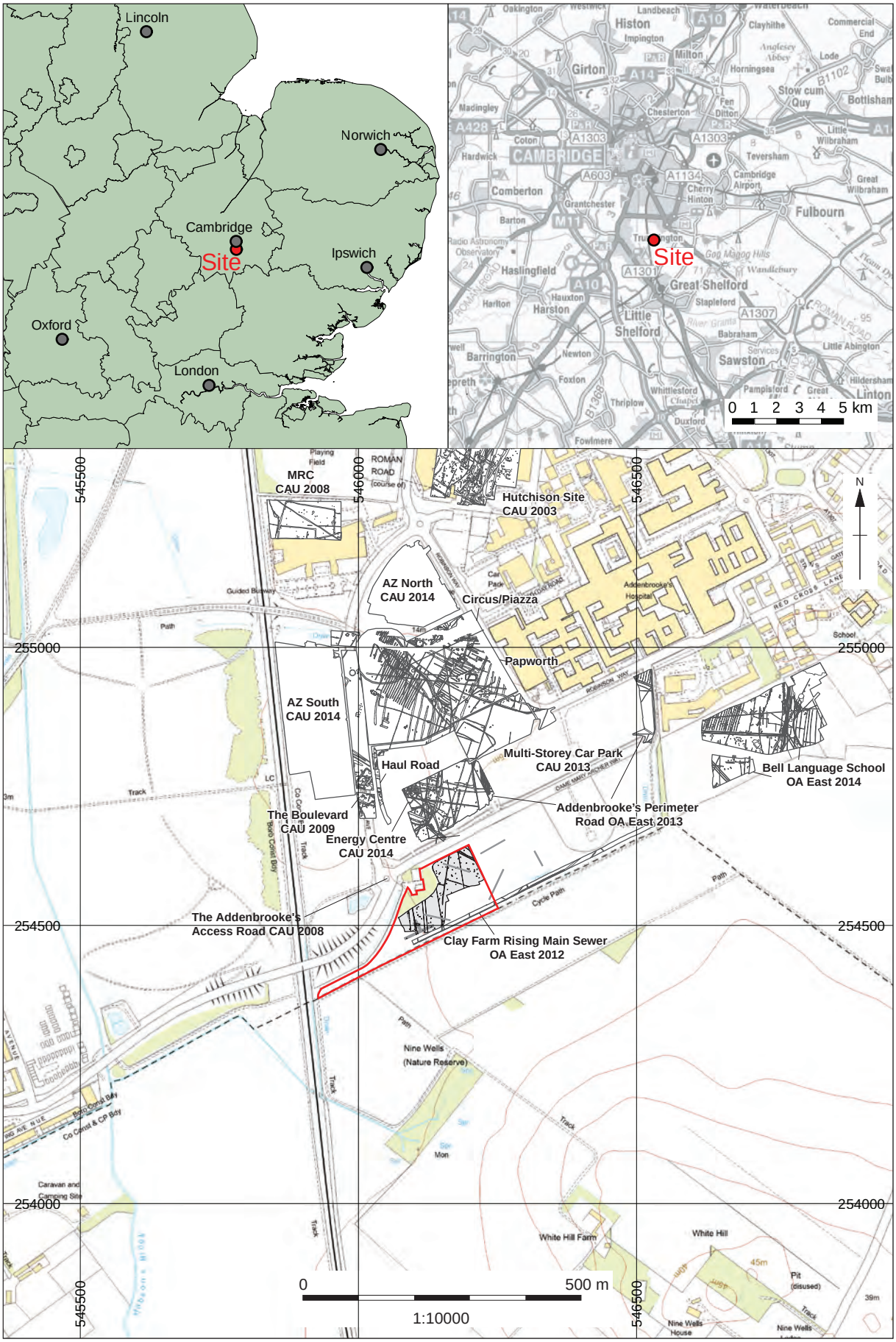
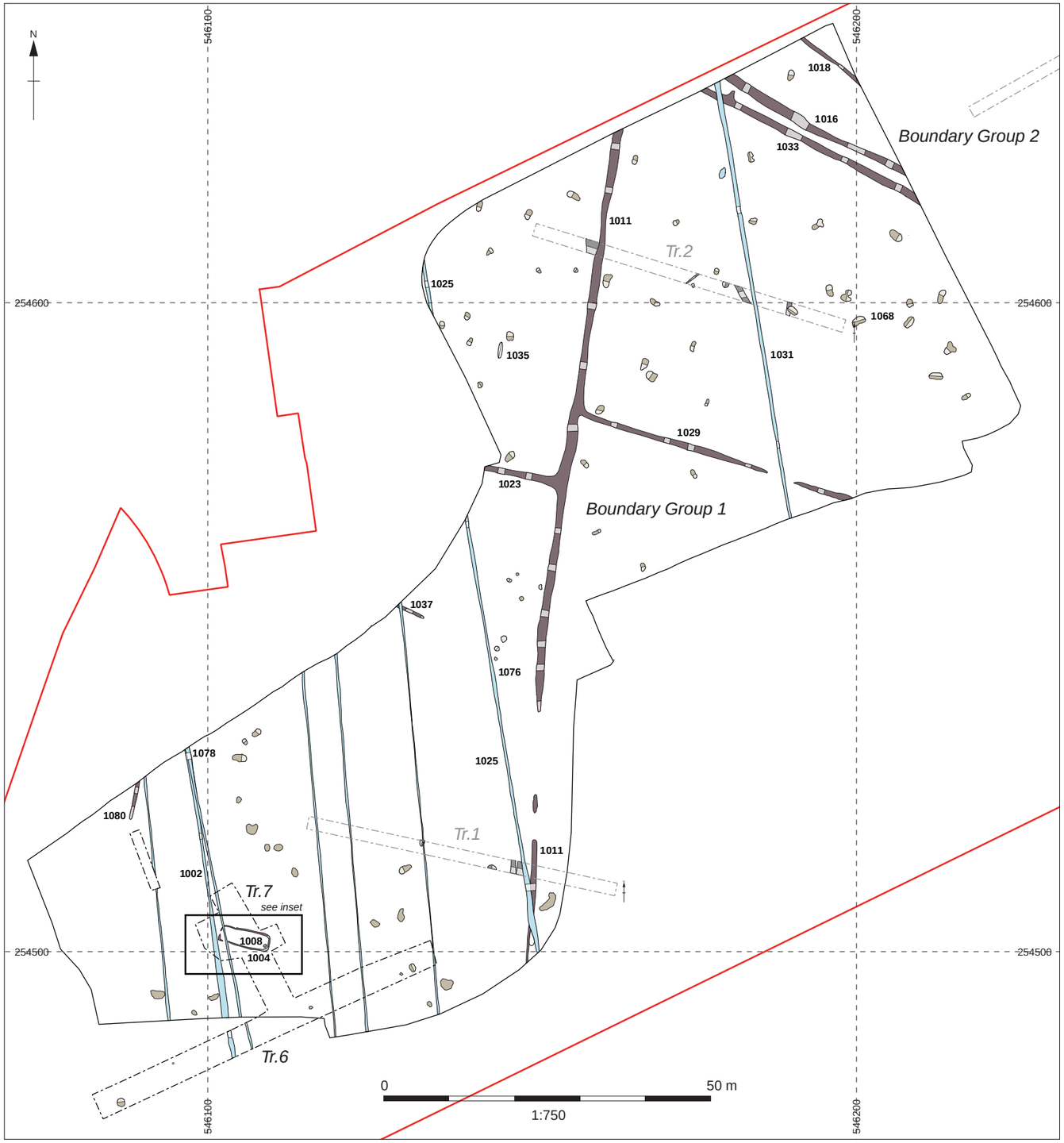
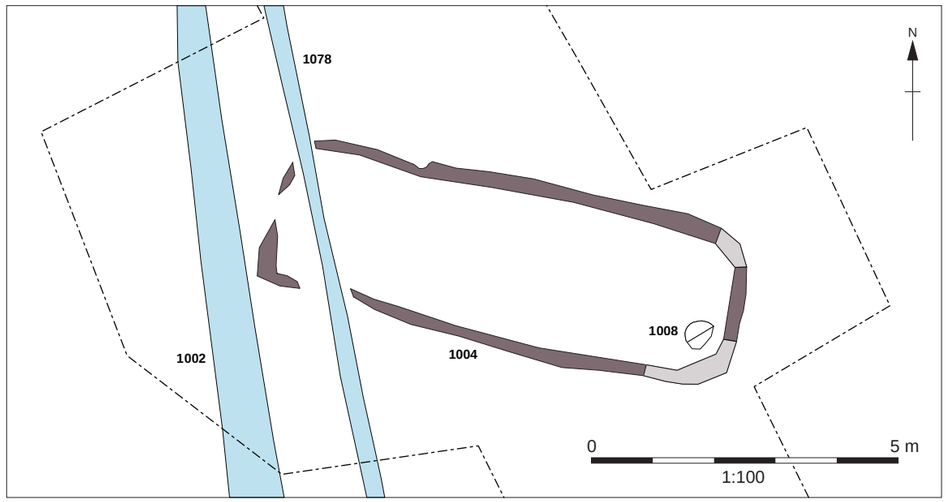


Figure 1: Site location showing development area (red) with other sites in the vicinity (grey)





Key

- Limit of excavation
- s.123 Illustrated Section
- Evaluation Trench
- Evaluation Trench - 2014
- 141 Cut number
- Period 0: Undated
- Period 1: Early Roman
- Period 2: Post-medieval to modern
- Natural Feature

Figure 2: Phase plan

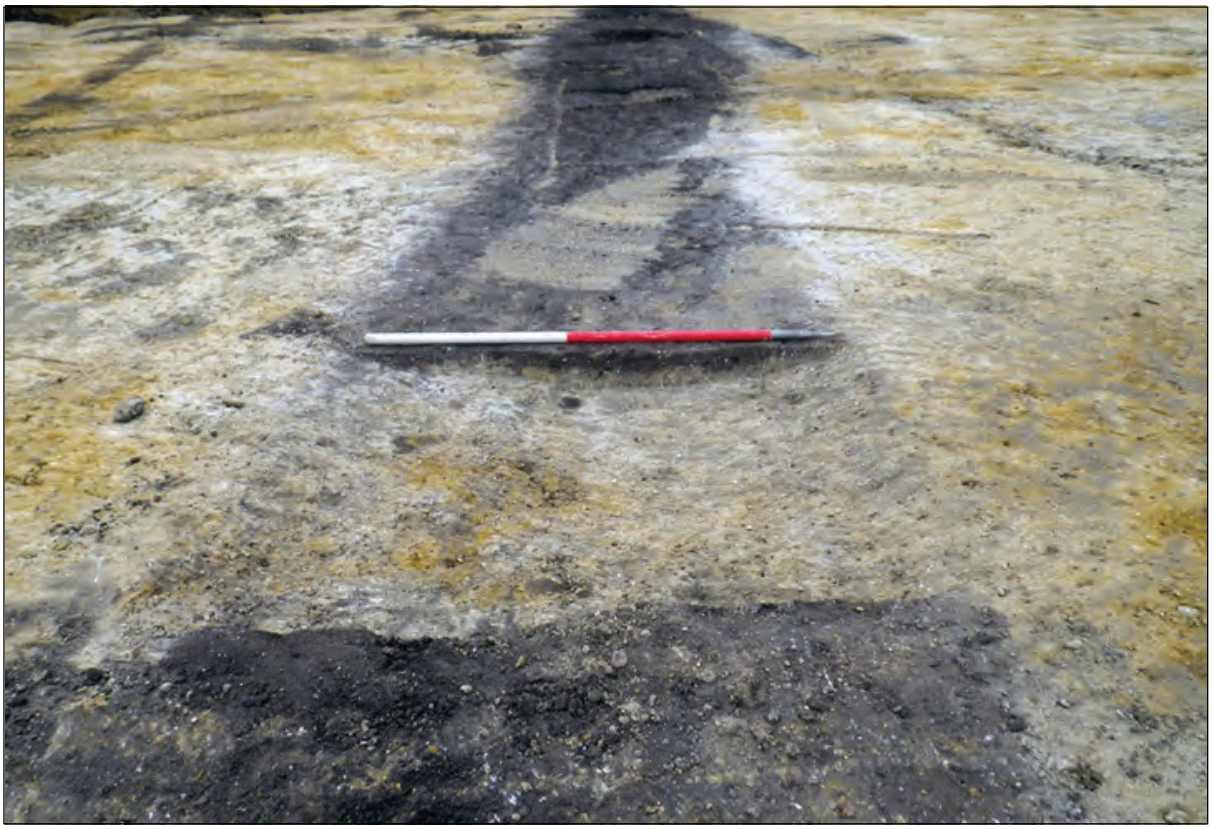


Plate 1: Ditch **1011** looking south-west.

Plate 2: Ditches **1016** and **1033** during excavation, looking north-west

Plate 3: Excavation of hayrick **1004**, looking north-west

Plate 4: Site under excavation, looking north-east

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