

Flood Compensation Scheme, Babraham Research Campus, Cambridgeshire

An Archaeological Evaluation



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Cambridge Archaeology Unit carried out an archaeological evaluation on land at Babraham Research Campus with the aim of establishing the presence, date, state of preservation and significance of any archaeological remains. The evaluation comprised of trial trenching 400m to the west of Babraham Hall which exposed a palaeo-channel and a low density of Roman and post-Medieval activity in the form of two boundary ditches and one medium sized pit.

Introduction

The archaeological evaluation was carried out as a condition of Planning Permission in advance of flood alleviation works on an area of the existing floodplain of the River Granta (NGR 550500/251448). Commissioned by Babraham Research Campus, trial trenching took place between 23rd – 30th May 2007 and was undertaken by archaeologists from Cambridge Archaeology Unit. The evaluation was carried out and this report was written in accordance with a project design approved and monitored by the Archaeological Officer at Cambridgeshire Archaeology Planning Countryside Advice (CAPCA).

Location and topography

The proposed development area (PDA) comprises *c.* 1.7 ha of land adjacent to the River Granta and approximately 400m to the west of the main campus complex, (Figure 1). The site comprises of grassland adjacent to the river, both within and 40m beyond the edge of the floodplain. Within the PDA the flood plain lies at 21.7m OD, and the northern edge rises to 24.95 OD. The underlying geology comprises mainly of Lower Chalk, with first and second terrace river gravels only present at the southern most point.

Archaeological background

Since 1994 the CAU has carried out a significant amount of archaeological work within the grounds of Babraham Research Institute (Figure 2; Butler 1994; Robinson 1995; Regan 1995; Wills 2004; Swaysland 2005; Armour 2006, 2007; Armour & Timberlake 2007). However, the archaeological background is best covered by a recent CAU desktop assessment (Hall 2003). This addresses the likelihood of encountering remains from the prehistoric through to the post-Medieval period across the entire 23 hectares of the Institute.

In relation to the PDA, significant evidence has been uncovered some 400m to the east for Roman settlement beneath the Institute and campus grounds. The latter associated with a possible Roman road and crossing-point of the river Granta and a fairly substantial Roman inhumation and cremation cemetery, which lies approximately 150m north of Babraham Hall (Armour 2006; Armour & Timberlake 2006). Major excavations and an evaluation carried out to the north and west of Babraham Hall (Armour 2006, 2007) revealed the edges of this settlement area as well as evidence for earlier activity associated with the exploitation of raw materials such as flint during the Neolithic/Early Bronze Age (Armour 2006).

An archaeological evaluation of the riverside area to the west of Babraham Hall and some 350m east of the PDA revealed evidence for the presence of prehistoric palaeo-channels with associated flint working areas along their edges and the possibility of burnt flint mounds of Neolithic/Early Bronze Age date. Later activity within this same area included Roman, and possibly Medieval, attempts at re-cutting or canalising the river, the construction of a Roman gravel causeway, and the excavation of ditches and a possible beam-slot for a wooden building along the edge of this terrace; all this prior

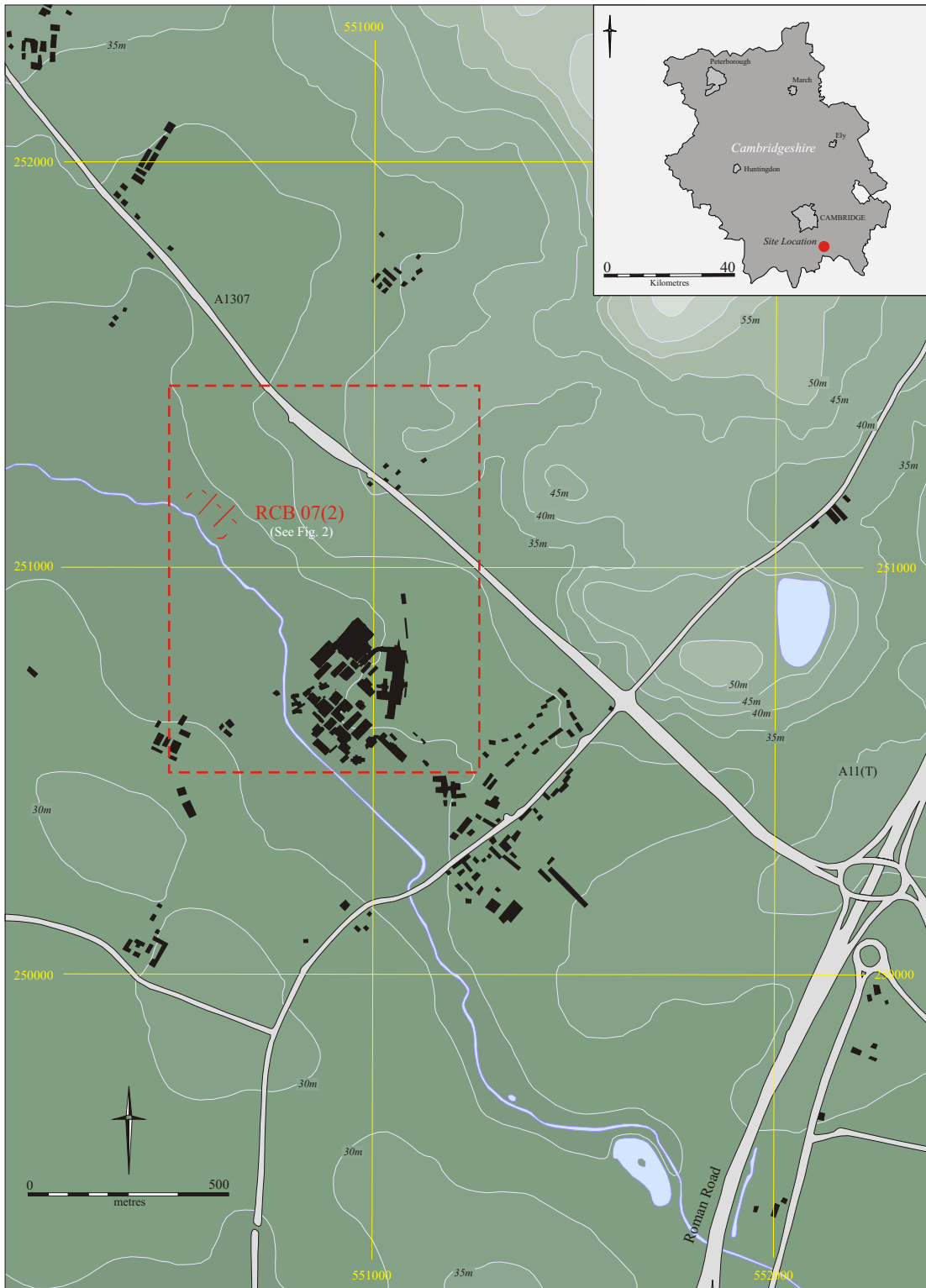


Figure 1. Site Location Plan

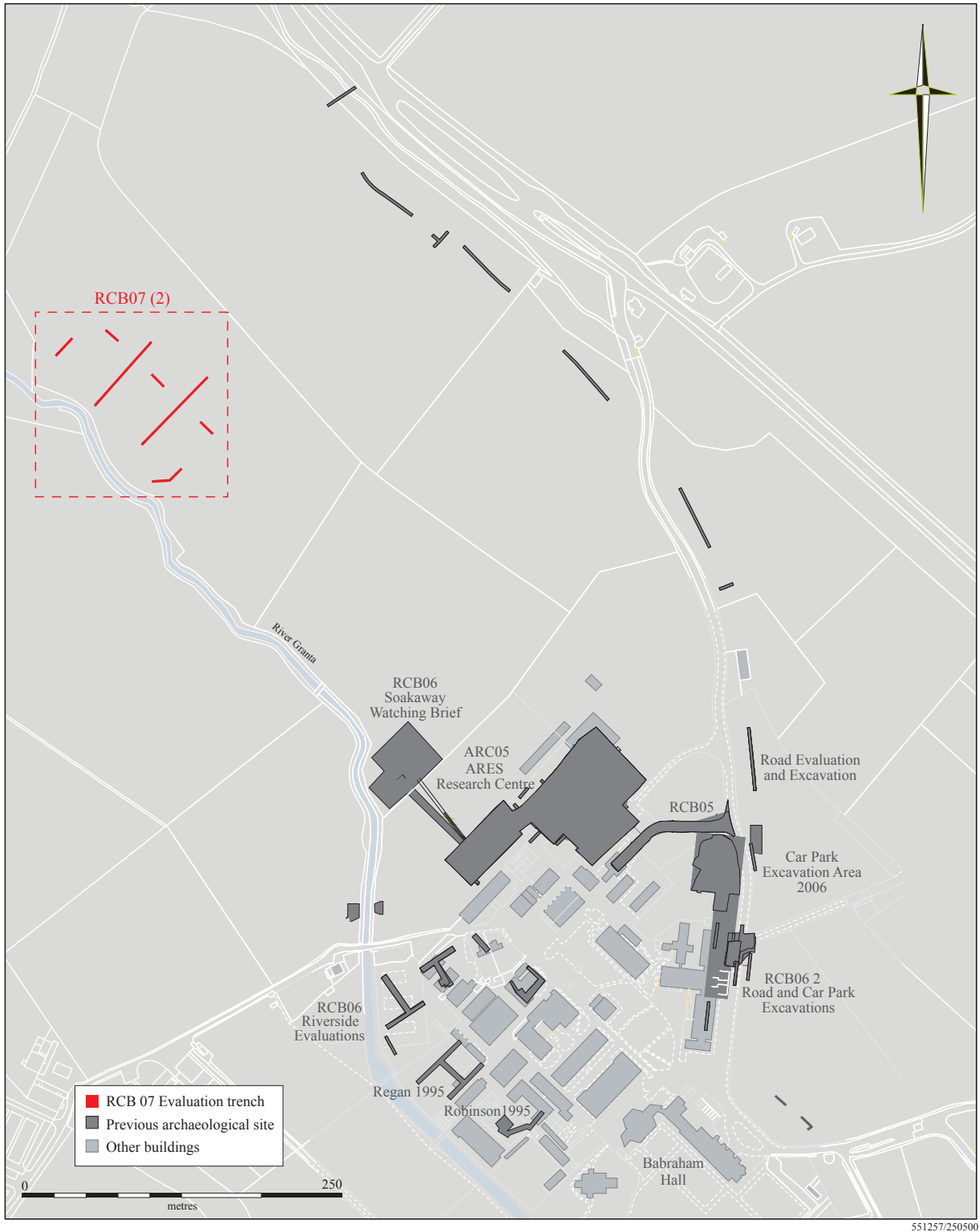


Figure 2. Area of evaluation in relation to previous archaeological investigations

to the apparent abandonment of this flood-prone area sometime during the 2nd century AD (Armour & Timberlake 2007).

An archaeological excavation just to the north of Babraham Hall revealed a series of Medieval to post-Medieval gravel roadways, plus evidence of quarrying, superimposed upon an earlier landscape of Roman boundary ditches, pits and beam-slots, and a number of Late Iron Age pits (Armour 2007).

Methodology

The PDA was evaluated with seven trenches totalling 225m in length, giving a sample by area of 2.65%. The trenches were excavated by tracked 360° machine using a 2.0m wide toothless ditching bucket with topsoil and underlying deposits being removed under archaeological supervision. The exposed archaeological features were subsequently metal detected, planned and sample excavated. A bucket-sampling exercise was also carried out to determine the extent of any background activity within the PDA.

Excavation of archaeological features was carried out using hand tools. The recording followed a CAU modified MoLAS system (Spence 1990), whereby feature numbers, F, were assigned to stratigraphic events, and numbers (fill), or [cut] to individual contexts. The trench plans were drawn at scale 1:50 and sections at 1:10. A small digital photographic archive was also compiled. All work was carried out in strict accordance with statutory Health and Safety legislation and with the recommendations of SCAUM (Allen & Holt 2002). The site code is RCB 07 (2).

Results

Bucket-sampling

This was carried out at the mid point of Trenches Three and Five, with 90 litre samples being taken at each; however, the only finds recovered were two small pieces of abraded post-Medieval brick from Trench Three.

Trenches

Of the seven trenches, only four contained archaeological features (Figure 3). These features were all concentrated at the southern edge of the PDA, where the ground level begins to slope significantly downwards towards the River Granta.

Trench One

Trench One was 19.0m in length on a northeast-southwest alignment. Depth varied between 0.57m to the northeast and 0.50m to the southwest, with an underlying geology of Lower Chalk. One small, post-Medieval ditch was exposed and a slot was excavated.

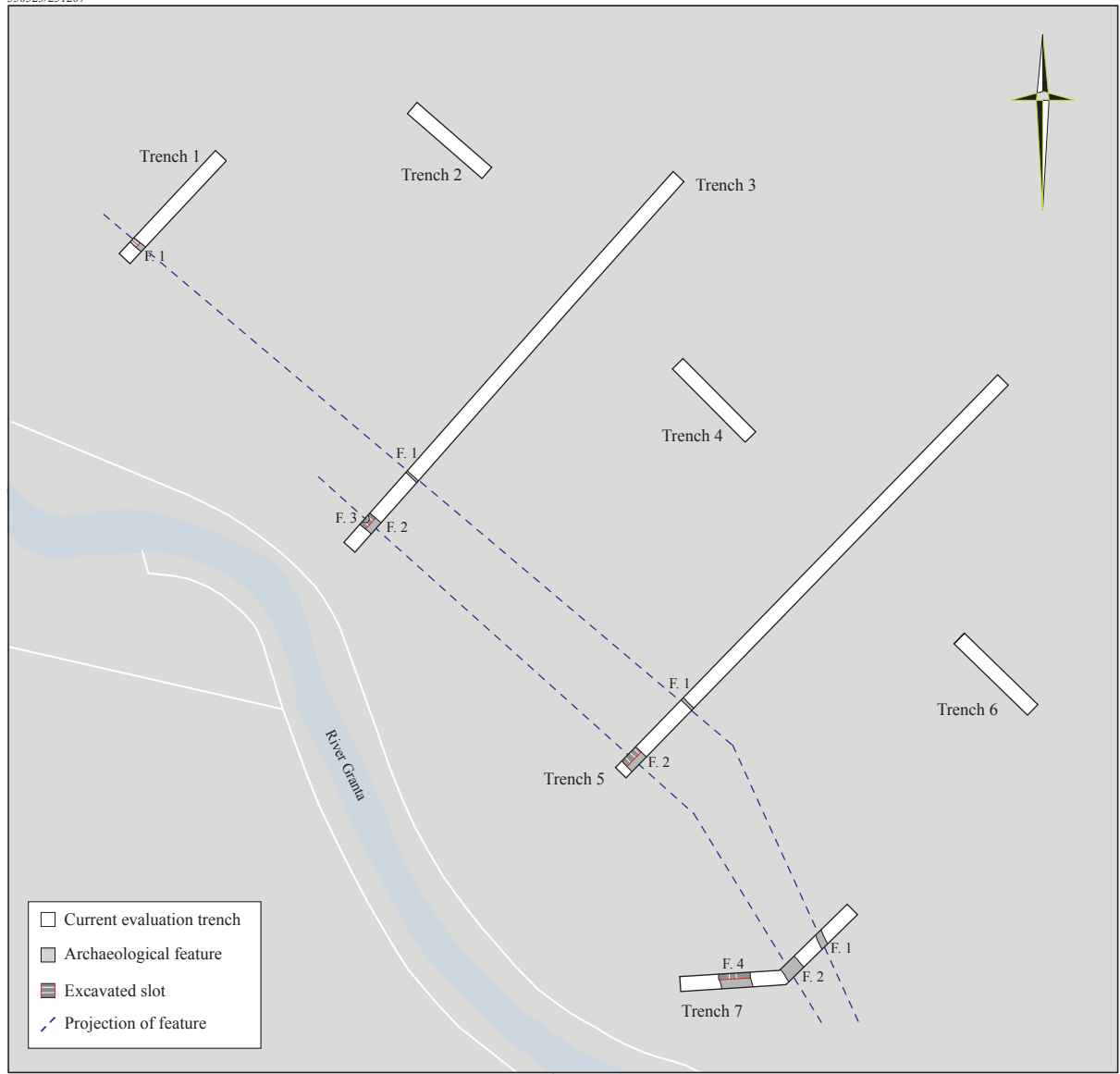
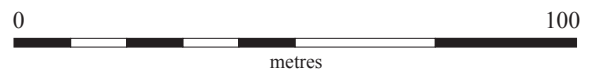


Figure 3. Trench location plan



F.1 NE-SW aligned post-Medieval ditch also visible in Trenches Three, Five and Seven. Cut [9], fill [8]. Width 1.0m, depth 0.53m, with quite steeply sloping sides leading to a flattish base. Fill was a mid brown silty sand with occasional charcoal and small gravel inclusions. Contained pottery and worked flint.

Trench Two

Trench Two was 14.0m in length on a northwest-southeast alignment. Depth varied between 0.81m to the northwest and 0.71m to the southeast, with an underlying geology of Lower Chalk. No archaeological features were exposed.

Trench Three

Trench Three was 62.0m in length on a northeast-southwest alignment. Depth varied between 0.74m to the northeast and 1.02m to the southwest, with an underlying geology of Lower Chalk. The level of the trench started to significantly drop only 4.50m from the southwest end, and a thin 0.18m layer of alluvium, [7], was visible below the subsoil at this point; this layer had been cut by F.2. Three archaeological features were exposed, ditches **F.1** and **F.2** and pit **F.3**. A slot was dug in **F.2** exposing **F.3** which had been completely truncated by this ditch. Both these features were broadly dated Roman 2nd – 4th century AD (Figure 5).

F.2 NE-SW aligned ditch that truncated pit **F.3**. It was also visible in Trenches Five and Seven. Cut [5], fill [4]. Width 2.30m, depth 0.50m, with moderately steep sides leading to flattish base. Fill was a mid greyish brown silty sand with occasional charcoal, chalk and gravel inclusions. Contained tile, worked flint and an iron nail.

F.3 Pit, which was truncated by ditch **F.2**. Cut [3], fills [1–2+6]. Width >1.0m, depth >0.85m, with very steeply sloping sides leading to a concave base. Fills were a pale to mid greyish brown silty sand mixed with frequent chalk fragments. Contained pottery.

Trench Four

Trench Four was 14.5m in length on a northwest-southeast alignment. Depth varied between 0.71m to the northwest and 0.77m to the southeast, with an underlying geology of Lower Chalk. No archaeological features were exposed.

Trench Five

Trench Five was 74.0m in length on a northeast-southwest alignment. Depth varied between 0.70m to the northeast and 1.09m to the southwest, with an underlying geology of Lower Chalk. The level of the trench began to drop approximately 12.5m from the southwest end; however, unlike Trench Three, no alluvium was present. Two linear ditches, **F.1** and **F.2** were exposed and a slot was dug in **F.2**.

F.2 NE-SW aligned ditch also visible in Trenches Three and Seven. Cut [27], fills [16-26]. Width 3.70m, depth 1.75m, with quite steeply sloping sides leading to a flat base. Fills were a pale to dark greyish brown silty sand with charcoal, gravel and chalk inclusions. Some redeposited and weathered natural was also present. Contained pottery, animal bone and an iron hobnail.

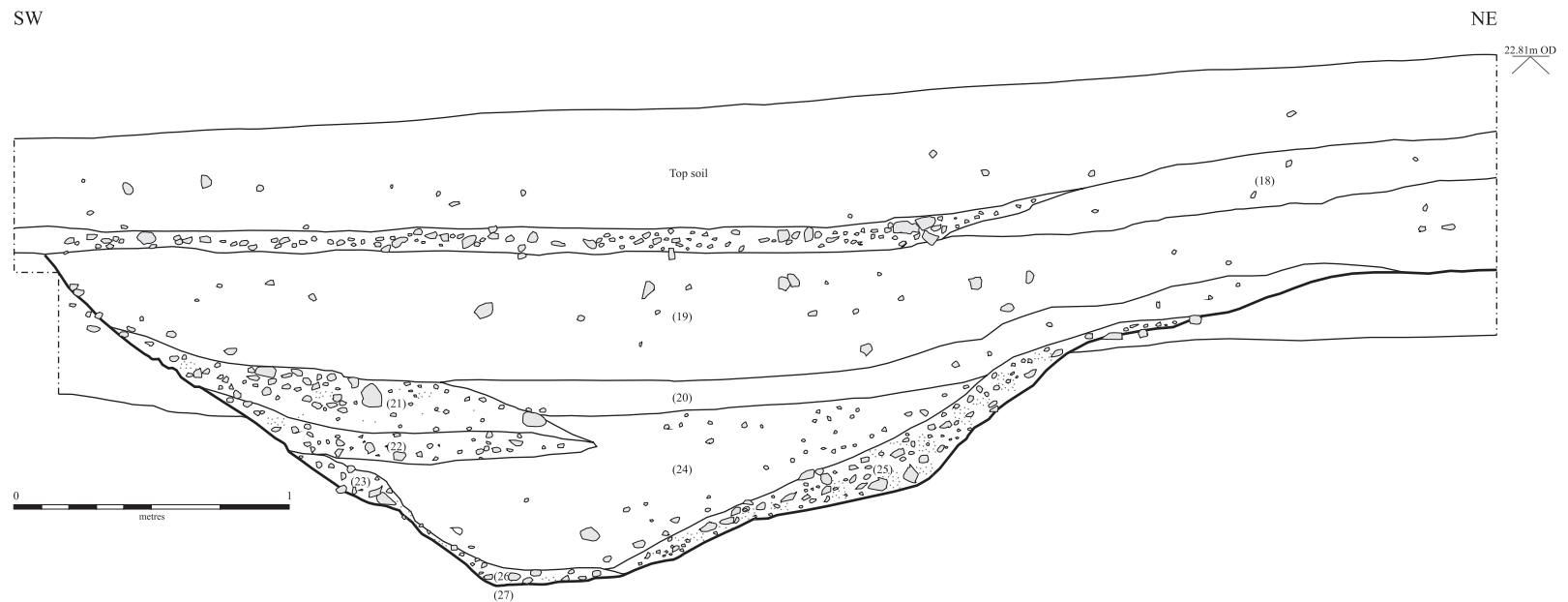


Figure 4. Photo and section of F. 2



Figure 5. Photograph of F.2 and F.3

Trench Six

Trench Six was 14.5m in length on a northwest-southeast alignment. Depth varied between 0.58m to the northwest and 0.61m to the southeast, with an underlying geology of Lower Chalk. No archaeological features were exposed.

Trench Seven

Trench Seven was 27.0m in length and aligned from east-west to northeast-southwest. Depth varied between 1.0m to the northeast and 0.80m to the west, whilst the geology changed approximately 11.5m from the west end of the trench from Lower Chalk to terrace river gravels. Three features were exposed, ditches F.1 and F.2, cut into Lower chalk, and a palaeo-channel, cut into terrace river gravels. A single slot was excavated into the channel.

F.4 Palaeo-channel. Cut 14], fills [10-13]. Width 6.40m, depth 0.78m, with gently sloping sides leading to an uneven base. Fills were pale to dark greyish brown alluvial silts with rare small gravel inclusions. Contained worked flint.

Discussion

The evaluation showed there was very limited archaeological activity within this part of the campus grounds. The archaeology consisted of a palaeo-channel, a medium sized pit truncated by a fairly substantial Roman ditch, dated 2nd – 4th century AD (see Appendix 1) and a small post-Medieval boundary ditch.

Unlike other archaeological works carried out by the riverside, which tended to be on terrace river gravels, (Armour & Timberlake 2006), only a small area of the gravels was exposed during this evaluation. The palaeo-channel exposed here showed almost no evidence for either prehistoric or Roman activity, with only one worked flint being recovered (see Appendix 2). It is unclear whether the lack of activity observed here is indicative of the general area or not.

The Roman ditch (Figure 4) appears to follow the edge of the floodplain for the River Granta and is positioned at the point where the contour of the land begins to fall away towards the river. The paucity of finds from this feature (see Appendices 1-3) suggests it is some distance from any settlement activity, and the fills bear no evidence for waterlogging or other attributes associated with a drainage ditch. Therefore, its primary purpose was probably to serve as an agricultural boundary. Although no evidence was found, its size could suggest it was used to control the movement of animals, for example, restricting cattle to the floodplain where they would have easy access to good grazing and a ready water supply, and also preventing them wandering over arable land.

The post-Medieval ditch appears to run roughly parallel to the Roman ditch, although again there is no evidence as to its actual purpose beyond being some form of agricultural boundary.

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Appendix 1

Flint – Emma Beadsmoore

A total of 8 (149g) flints were recovered from the site, all of which are worked and unburnt. The material comprises flint working waste and just one utilised flake; the flint is listed by feature and type in Table 1. The flakes and core fragments are the products of expedient flake production/core reduction sequences, with no visible concern over the morphology of the products or the use life of the core. Expedient flake production/core reduction was prevalent from the Middle Bronze Age onwards.

| Feature/ context | Type | | | | | | Totals |
|---------------------|------------|-----------------|----------------|----------------|---------------|-----------------|--------|
| | chip/chunk | secondary flake | tertiary flake | irregular core | core fragment | edge used flake | |
| F. 1 [8] | | 1 | 1 | | | | 2 |
| F. 1 surface | | 1 | | | | | 1 |
| F. 2 [4] | 1 | | | 2 | 1 | | 4 |
| F. 4 [11] | | | | | | 1 | 1 |
| Sub totals | 1 | 2 | 1 | 2 | 1 | 1 | 8 |

Table 1: Flint types and quantities

Appendix 2

Roman Pottery - Katie Anderson

The site yielded 11 sherds of Roman pottery, weighing 36g. All of the pottery was examined and details of fabric and form were recorded along with any other information deemed important.

The assemblage comprised very small, abraded sherds, with only seven sherds (from one vessel) being diagnostic. Feature 1 contained two sherds (4g) consisting of one sandy greyware and one oxidised sandy ware, both of which could only be dated Romano-British, although they were residual in a later feature. Feature 2 contained eight sherds (31g), seven of which were from a single vessel, an oxidised sandy, flat base. The other sherd from this context was a sandy greyware sherd. The pottery from this feature broadly dates 2nd - 4th century AD. The final sherd of pottery was from Feature 3, comprising an oxidised sandy sherd weighing 1g.

Overall, the pottery assemblage is too small and abraded for any conclusions to be drawn. It is likely that the material from Features 2 and 3, although not residual, had been redeposited, thus explaining the poor condition of the sherds.

Roman Tile

One probable piece of Roman tile was recovered from Feature 2, weighing 7g. It was too small for any form to be assigned.

Appendix 3

Small Finds – David Webb

Two ferrous artefacts were recovered from a linear feature during the evaluation. Both artefacts were corroded with surface detail being obscured by iron oxide and associated corrosion products and without being subject to X-ray examination the identification of the ferrous artefacts are only putative. A metal detector was employed to ensure the recovery of all metal artefacts from contexts and further checks were carried out on the sub-soil and spoil from hand excavation.

<012> Trench 3 [4] F.2

A fragment of an iron nail with a flat ovoid head, the shank is square in section and straight in profile. One side of the head is bent over to the shank. The nail is missing the tip. Dimensions: length 39mm, width 5mm, head 13 x 10mm, weight 8gr.

The nail was recovered from the tertiary silt layer of a Roman ditch (F.2). Although the nail has some similarities to Manning's Type 1b (1985), of which several examples have previously been recovered from Babraham sites (Armour 2007), the profile appears straight rather than the typical tapering profile of the 1b type. Other possible Roman material was recovered from this context (Appendix 2) and a Roman date seems most appropriate although a later date is possible.

<013> Trench 5 [24] F.2

A heavily corroded complete iron hobnail with a domed sub rectangular head. The shank is square in cross section and tapers to a point. Dimensions: length 14mm, width 2mm, head 9 x 7mm, weight <1gr.

Hob nails of this form and dimension are typical of the Roman period and were fitted to the footwear of both sexes (Miller & Rhodes 1980). The nail is similar to several examples previously recovered from Babraham sites (Armour 2007). The hobnail was recovered from a primary fill of a Roman ditch along with ceramic material dated to the 2nd – 4th century AD (Appendix 2).

Discussion

Although both ferrous artefacts were recovered from the same feature only the hobnail <013> can be securely dated to the Roman period. The nail <012> is most likely of Roman origin but a later date is possible. The artefacts are not untypical of other ferrous material recovered from the Babraham sites (Armour 2007). The small number of ferrous artefacts recovered may reflect the distance from the settlement.