BEDFORD ACADEMY
MILE ROAD
BEDFORD

ARCHAEOLOGICAL AREA EXCAVATION

Albion archaeology

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Preface

Every effort has been made in the preparation and submission of this document, and all statements are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

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This report has been prepared by David Ingham (Project Officer), with contributions by Holly Duncan (Artefacts Manager), Jackie Wells (Artefacts Officer), Dana Challinor (Charcoal, freelance), John Giorgi (Plant remains, freelance), Peter Guest (Coins, Cardiff University), Mark Maltby (Faunal remains, Bournemouth University) and Sarah Percival (Prehistoric pottery, freelance). Site drawings were digitised by Joan Lightning (CAD Operator) and Iain Leslie (Archaeological Supervisor), with the structural figures created by David Ingham. Finds illustrations are by Mike Trevarthen and photographs by Adam Williams.

Fieldwork was supervised by James Newboult (Project Officer), with investigation and recording carried out by Jo Ahmet, Ben Carroll, Catherine Godsiffe, Iain Leslie, Gary Manning, Slawomir Utrata and Adrian Woolmer. Processing of the ecofact samples was undertaken by Slawomir Utrata, with initial processing of the finds carried out by Jackie Wells. All Albion projects are under the overall management of Drew Shotliff.

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Structure of this Document

Section 1 details the background to the project and outlines its objectives. Sections 2 to 9 provide the results of the fieldwork and subsequent analysis, while Section 10 offers a broader discussion of what was found. Section 11 is a bibliography.

Key Terms

The following terms or abbreviations are used throughout this report:

BCAS	Bedfordshire County Archaeology Service
HER	Bedford Borough Council Historic Environment Record
HET	Historic Environment Team of Bedford Borough Council
IfA	Institute for Archaeologists
PCRG	Prehistoric Ceramics Research Group
WSI	Written Scheme of Investigation

Non-technical Summary

Bedford Academy was granted planning permission to demolish its existing academy building and construct a new one, together with an all-weather sports pitch and associated parking and landscaping. As the academy lies in the archaeologically rich Great Ouse valley, in an area of known activity from the late Neolithic through to the Saxon period, a condition was attached to planning consent requiring archaeological investigation of the affected area. Albion Archaeology was commissioned to carry out the programme of archaeological fieldwork (a trial-trench evaluation which led to an open-area excavation), the results of which are presented in this report.

Bedford Academy lies towards the southern edge of Bedford on the river terrace gravels of the Great Ouse, between Mile Road to the north and Elstow Brook to the south. The excavation covered c. *1.33ha, located mostly in former playing fields to the rear of the existing Academy at a height of* c. *27.5m OD.*

During and prior to construction of the original Academy buildings during the 1960s and 1970s, archaeological investigations uncovered late Iron Age remains including enclosures and at least one building (HER 979). The remains of a late Iron Age and Romano-British pottery-production site were also uncovered to the west of the school, along with limited evidence of Saxon activity. To the east, archaeological investigations in advance of housing development in the 1990s identified evidence for Neolithic and early Bronze Age activity in the form of an oval barrow and hengiform monument (HER 18235).

The 2011 excavation at Bedford Academy revealed part of a late Iron Age to early Roman agricultural settlement, overlying the fragmentary remains of prehistoric fields and late Neolithic activity. The excavated part of the settlement seems to have related primarily to the management of livestock, with a complex system of interconnecting enclosures that were reworked on several occasions. Few signs of human habitation were found, with no buildings conclusively identified, suggesting that the domestic part of the settlement lay elsewhere. There is no indication that the settlement continued in use beyond the early 2nd century AD, although the site was re-used for small-scale settlement in the early Saxon period. Evidence of post-Saxon activity was limited to medieval ridge-and-furrow cultivation, prior to the 20th century.

1. INTRODUCTION

1.1 Project Background

Planning permission was granted by Bedford Borough Council (10/02894/MAF) for demolition of the existing Bedford Academy (formerly John Bunyan Upper School) building and the construction of a new one, together with an all-weather sports pitch and associated parking and landscaping. As the development lay within an area of archaeological sensitivity, a condition was placed on planning consent requiring a programme of archaeological work in advance of construction. This condition was in accordance with advice received from the Borough Council's Historic Environment Team (HET) and was in line *Planning Policy Statement 5: Planning for the Historic Environment*.

The first phase of archaeological works comprised trial-trench evaluation of the site of the new building and all-weather sports pitch (Albion Archaeology 2011). On the basis of the results of this evaluation, the HET advised that an archaeological open-area excavation and watching brief were required to investigate and record archaeological remains that would be affected by construction of the new building. The results of the open-area excavation were assessed in order to determine their significance and potential for further analysis (Albion Archaeology 2012), leading ultimately to this report.

1.2 Site Background and Geology

Bedford Academy lies towards the southern edge of Bedford on the river terrace gravels of the Great Ouse, centred on (NGR) TL 06170 47710. The Academy site in its entirety measures around 9.4ha in area and is bounded to the north by Mile Road, to the south by the Elstow Brook, to the west by allotments and to the east by a housing estate (Fig. 1).

The excavation was located in the former playing fields to the rear of the existing Academy. This area comprised *c.* 1.33ha of mainly flat, open, turfed land lying at a height of around 27.5m OD. A small portion of the north-west corner of the site lay beneath a car park where the ground had been reduced and levelled.

1.3 Archaeological Background

Bedford Academy lies in an area of high archaeological interest. The Great Ouse valley has been a focus for both settlement and ritual activity since early prehistory (Dawson 2000b), and previous archaeological work in the vicinity of the Academy has revealed remains from the late Neolithic through to the Saxon period.

During and prior to construction of the original Academy buildings during the 1960s and 1970s, archaeological investigations uncovered late Iron Age remains including enclosures and at least one building (HER 979). The remains of a late Iron Age and Romano-British pottery-production site were also uncovered to the west of the school, along with limited evidence of Saxon activity. To the east, archaeological investigations in advance of housing development in the 1990s identified evidence for Neolithic and early Bronze Age activity in the form of an oval barrow and hengiform monument (HER 18235; Steadman 1999).

1.4 Project Objectives

The overall purpose of the archaeological works was to determine and understand the nature, function and character of the site in its cultural and environmental setting, and to prepare and disseminate a report that fully describes the findings.

Following assessment of the results of the open-area excavation, a series of specific questions were formulated to be addressed by the analysis programme:

- What are the date, nature and extent of settlement activity identified within the development area?
- Can any spatial or temporal variations be identified in the activities being carried out?
- Did the excavated area include the focus of the settlement?
- How is the transition from the Iron Age to the Roman period represented?
- What happened to the settlement in the 2nd century AD — was it abandoned, or did the function of the excavated part of the settlement change? Does this correlate with contemporary changes on settlements nearby?
- What is the nature of the early Saxon remains identified within the development area, and were they associated with settlement activity?
- How do the Saxon remains relate to the earlier Roman settlement?
- How does the site at Bedford Academy relate to, and compare with, contemporary sites in the surrounding area?
- What was the settlement's social and economic basis, including its arable/pastoral balance?
- What information does the faunal assemblage reveal about husbandry practices, diet, and the utilisation of wild species; and how can the remarkably small size of the assemblage be accounted for?
- Are there any indications of cultural associations or trading links with other sites, either locally or more widely?

2. CONTEXTUAL RESULTS

The excavation at Bedford Academy revealed primarily a series of ditches and pits dating from the late Neolithic / early Bronze Age (Phase 1) to the early Saxon period (Phase 3), as well as evidence of medieval / post-medieval ploughing and a small amount of modern activity (Fig. 2). Most of the remains, however, belong to a fairly short period around the 1st century AD (Phases 2 and 2.1), when the land at Bedford Academy formed part of a much more extensive rural settlement. The remains that were identified as belonging to Phases 1–3 form the focus of this report.

2.1 Prehistoric settlement and field systems (Phase 1)

Two pits were identified that can be dated from their finds assemblages to the late Neolithic / early Bronze Age: one (G1) by the presence of fifty-five sherds of Beaker pottery from two vessels; the other (G49) by its collection of flint. G1 may in fact have been two small, contiguous pits rather than a single elongated one. The pits were in opposite corners of the site, 135m apart (Fig. 3); although indicative of settlement on some level, they are unlikely to represent more than temporary encampments. Further evidence of activity in the late Neolithic / early Bronze Age comes from a small assemblage of residual flints recovered from the late Iron Age and early Roman enclosures, while other flints in this assemblage attest to a local presence during the earlier Neolithic and the Mesolithic.

Stratigraphic evidence and a difference in alignment from that of the Phase 2 enclosures indicate that field system G25 is prehistoric in date. No finds were recovered from the field ditches, making it difficult to refine their date further; they may have been broadly contemporary with the middle Bronze Age field systems in the Biddenham Loop (Luke forthcoming), but a date as late as the middle Iron Age cannot be ruled out. Some of the features within the field system (G35) also predated the Phase 2 enclosures, and may have been contemporary with the fields; the only finds from them were a few abraded sherds of late Iron Age pottery, but these could either be intrusive or have accumulated in the resultant earthwork hollows long after the features went out of use. The function of these features is unclear, but they were perhaps associated with minor structures such as animal pens.

2.2 Late Iron Age / early Roman farmstead (Phase 2)

The main period of activity at Bedford Academy was characterised by a network of interconnecting enclosures that were re-cut and remodelled over the course of perhaps a century (Fig. 4). Identifying the precise sequence in which the various enclosures existed is complicated by two factors: nearly all of the pottery was made locally, and cannot be closely dated; and the general similarity of the ditches' infill made it difficult in some cases to interpret stratigraphic relationships during fieldwork. However, the small amount of pottery that can conclusively be said to postdate the Roman Conquest was confined almost exclusively to ditches that were recorded as being latest in the stratigraphic sequence, and on the basis of this, those ditches were assigned to a separate sub-phase (Phase 2.1).

All the remaining late Iron Age or early Roman features were left together in Phase 2, though it is clear that not all were contemporaneous. Figure 5 separates the Phase 2 enclosures into earlier and later ones, although each set still includes a degree of re-

cutting and/or remodelling. The datable finds from the enclosures are all roughly of the same date, however, and for this reason the finds assemblages from all the Phase 2 enclosures have been analysed together. This was also partly decided due to the general impossibility of determining whether the discrete features in Phase 2 belonged with the earlier or later enclosures — some may even have been contemporary with Phase 2.1, although their pottery assemblages (when present) all suggest a Phase 2 date.

2.2.1 Earlier enclosures

Interpretation of these enclosures is hampered by the fact that most extended beyond the limit of the excavated area, but G13 at least lay entirely within it. The enclosure was defined by a ditch that was mostly no more than 0.25m deep, but which was substantially deeper and wider on its eastern side (Fig. 4: j) — this was perhaps to help with drainage, as the south-east corner was marginally the lowest point of the enclosure. There were two points of access: one to the south, which was at least 12m wide and possibly much more; and a narrow one to the north that was only 2m wide. The enclosure's interior was extensively partitioned: four roughly parallel ditches (G14) subdivided the north-eastern half, while a further ditch (G67) ran parallel with the enclosure's south-western edge, extending beyond the enclosure.

Interpretation of enclosure G13's function is complicated by its subsequent re-cutting, which obliterated evidence for the original course of its ditches in several key places, but the complexity of its layout strongly suggests that it was used for managing and manipulating livestock (Pryor 2006, 100–5). Figure 6 suggests how the ditches' arrangement may have been used to control the movement of animals around the enclosure. The northern access point is likely to have been controlled by drafting gates, even though no post-holes were identified there: these would have allowed animals being brought into the enclosure from the north to be manoeuvred into its central area, while those exiting the partitioned areas of G14 could have been led either back into the central part of the enclosure, or out into the open fields to the north. Use of the partitions created by G14 would have enabled close inspection of the animals in order to check their health, age or general condition, while it would also have been possible to separate out sick or pregnant animals — the partitions were perhaps able to be closed off and used as holding pens. G67 is likely to have defined a further holding area within G13, with an opening at just the south-east end, while its continuation beyond the enclosure suggests that there was a precursor to the later enclosure ditch G20.

The spatial relationship of neighbouring enclosure ditch G21 with G13 suggests that they were almost certainly contemporary. The narrow gap between the two was perhaps designed to allow south-eastward passage from the open fields to the north for any animals that were not required in enclosure G13, although this would still have presented an opportunity to inspect the animals by acting as a 'race' — the animals (presumably sheep or goats) would have been forced to walk in single file, since the gap was no more than 1m wide. Enclosure G21 itself appears to have been left open to the south, although this side may have been defined by an archaeologically invisible boundary such as a hedgerow. Alternatively, the enclosure may not have extended as far southwards as ditch G21 that defined it: G22 perhaps represents the enclosure's south-east edge, although uncertain stratigraphy makes it slightly doubtful whether

G21 and G22 were contemporary, while the short length of ditch interpreted as a north-eastward continuation of G22 may in fact have been unrelated. The presence of ditch G65 also suggests that the layout of G21 had been modified from its original form, or at least that the ditch had been re-cut.

A further possible 'race' existed to the west of G21 (Fig. 6). It was substantially broader than the one to the east, however, measuring 3.5–5m wide; this may indicate that it was used simply as a drove-way rather than a 'race' for animals that did not require inspection, or perhaps that it was used to inspect larger animals such as cattle. The passage of animals is again likely to have been from north to south, with the north-eastward spur of ditch from the corner of G39 helping to funnel the animals into the entrance.

Enclosure G39 seems to have covered a relatively large area, but determining its precise extent is hindered by the fact that parts of it lay beyond the limit of excavation, and also by the likelihood that predecessors existed to some of the later Phase 2 enclosures, little trace of which survived their re-cutting in Phase 2.1. Ditches G68 certainly suggest the presence of an earlier version of enclosure ditch G28; this may have formed the south-west side of G39, yet ditch G32 could equally well have done so. The irregularity of G33's course to the south suggests further measures designed to help control the movement of livestock, but the precise nature of these remains unknown.

Similar problems exist at the east end of the Bedford Academy site, exacerbated by a greater degree of remodelling and re-cutting of the enclosures and a general lack of clarity with regard to stratigraphic relationships involving the (probably) later Phase 2 ditches G4 and G66. Enclosures G2, G7 and G24 all appear to have been contemporary, with a western edge to G2/G7 probably provided by a precursor to G4 that was subsequently obliterated by re-cutting. The enclosed part of G24 may well have been another area for holding animals (Fig. 6), but the location of the opening in G7 suggests that it was designed for human use — animals can much more easily be herded through an entrance in the corner of an enclosure than through one such as this (Pryor 2006, 101). Corner entrances were, however, present in enclosure G3 which replaced G2/G7; these are likely to have been related to the manoeuvring of livestock, but not enough of the enclosure was revealed to understand its function more fully.

Very little was revealed of the two enclosures defined by G8. The enclosure ditch was substantially wider (though no deeper) than most of the others in Phase 2, and the enclosures were on a different alignment to the rest; these attributes may indicate a different function, but their true significance remains unknown.

2.2.2 Later enclosures

Although the overall layout of the enclosures in the latter part of Phase 2 remained largely unchanged, numerous alterations to the layout of individual enclosures can be identified. In general, the layout of the enclosures was reduced slightly in its complexity, while the ditches that defined the enclosures tended to become slightly deeper and wider than their predecessors. Interpretation is still hindered by the fact that some of the enclosures were only partially revealed, however, and it is again clear that a few of the enclosures underwent further remodelling during Phase 2.

The original ditch defining enclosure G13 was re-cut, with the layout of the enclosure simplified from its complex earlier arrangement. Its former internal divisions were abandoned and the entrance to the north was closed off, while the southern side appears to have been left open. The enclosure may have been subdivided by ditch G48, but the balance of probability suggests that this was a slightly later boundary which was related to G4 and also a precursor of Phase 2.1 ditch G11 (Fig. 7). Even though the break in G48 corresponds with the edge of enclosure G13, this is probably coincidental, or at most influenced by an earthwork that was no longer functional — it is more likely that G48 was a precursor to the eastern Phase 2.1 enclosures, which cut across G13 and therefore were presumably created after G13 had gone out of use.

Ditches G21 and G57 to the west and north of enclosure G13 are likely to have been retained from the earlier part of Phase 2 (Fig. 5). Much of G20 is also likely to have re-cut a presumed northward extension of ditch G67, with the deeper and wider re-cut removing all trace of the earlier ditch where it followed the same course. A narrow 'race' still existed between G13 and G21, allowing passage from north to south, but access to this race now came from east of the NW–SE boundary defined by G20, rather than from the west.

Earlier enclosure ditch G39 was re-cut along a similar course by G59, but with the revised location of its eastern side blocking off the former race or drove-way that had existed between G39 and G21. The south-east corner of the enclosure was partitioned by ditch G26 into a sub-enclosure, with narrow entrances at its north-east and north-west corners. Its north-east entrance was perhaps used for funnelling animals into the sub-enclosure, and the north-west one for releasing them back into the main enclosure, but this is only conjecture without knowing what form the unexcavated part of the sub-enclosure took.

Access to enclosure G59 appears to have been from the south, although this may have been used solely as an exit, with animals led into the enclosure through G26. A north-west access point in the unexcavated part of the enclosure is also possible. Ditch G36 at the south-west corner of the enclosure was re-cut and also splayed out substantially, perhaps indicating that this corner was used as a causeway for human traffic — a similar occurrence was seen at Childerley Gate in Cambridgeshire, where metalling had been applied to counteract the effects of erosion (Abrams and Ingham 2008, fig. 3.26: c).

Enclosure G28 was probably a re-cut of an earlier one, as suggested by the presence of ditches G68 in the earlier part of Phase 2. The ditch that defined it was the largest in Phase 2 (Fig. 4: m), measuring up to 2.6m wide and 0.7m deep, and could easily have removed all trace of its precursor where the two shared the same course. Its southern edge seems to have been modified at some point by the creation of ditch G37, but little more can be said about this enclosure due to the fact that much of it remains unexcavated.

Understanding of the eastern enclosures is hindered by three main factors: the problems of stratigraphy previously mentioned with regard to this end of the Bedford Academy site; the continuation of the enclosures beyond the excavated area; and

subsequent re-cutting during Phase 2.1. Ditches G4, G16 and G48 may all have been contemporary with each other, but little more can be said about how they may have functioned or how they articulated with other enclosures. There was an opening in ditch G48 which appears to have respected the boundary of enclosure G13, although the two enclosures are unlikely to have been contemporary, as discussed above; the gap in G16 is more likely to have been the result of truncation than a genuine entrance.

2.2.3 Discrete features

A moderate number of pits were revealed at Bedford Academy, spread fairly evenly across the site but with a positive bias towards the east end (Fig. 4). Most contained at least a few sherds of pottery, which date consistently to the late Iron Age / early Roman period; the pits that produced no datable finds are therefore assumed to be similar in date. Some of the pits were stratigraphically earlier than individual Phase 2 enclosure ditches, while a few were later, but there is unlikely to have been any great temporal disparity between them.

Most of the pits were shallow, relatively small in plan, and contained few finds. One of the pits in G12 (Fig. 4: e) and the westernmost of the three in G6 were deeper, at 0.9m and 0.6m respectively; the profile of the G12 example almost suggests that it was a very large post-hole, with a lip on the east side to assist with lowering the post into the hole and some splaying of the west side from when the post was extracted, but these characteristics were not sufficiently pronounced in this instance to conclusively identify it as such. There were also several areas of relatively small-scale quarrying: G19, which was the most extensive and also the deepest (Fig. 4: p); G38, which was 0.5m deep; and possibly G43, which was either a shallow area of quarrying or a series of discrete pits within an eroded area. G38 and G43 both produced relatively large assemblages of pottery, which suggests that the quarries came to be used for disposing of rubbish. G47 might have been related to quarrying activity, with G38 located at its southern end, although at only 0.15m deep it is unlikely to have been a quarry pit itself.

Very few structural remains were identified. The two gullies in G15 may have had a structural function, perhaps associated with insubstantial structures such as animal pens or windbreaks; a similar interpretation might apply to the scatter of features in G55, although these could simply represent the truncated remains of enclosure ditches. G23 seems to have been a hearth, with a lining of fired clay, but heavy truncation meant that it survived to a depth of just 0.12m. Only three definite post-holes (G30) were identified, although nearby feature G31 may also have been one, into which a substantially complete late Iron Age / early Roman pot had been placed. G42 within the same enclosure also contained a largely complete pot. Neither G31 nor G42 produced any human bone, but it is conceivable that the pots recovered from them were truncated cremation urns — the location of G42 between two tree-throws (Fig. 2) is at least a strong indication that the pot was buried within a ritual context.

2.3 Phase 2.1: Early Roman

The assignment of features to this sub-phase is based on a combination of stratigraphic and ceramic evidence. While the date of much of the pottery recovered from the site cannot be refined beyond its being either late Iron Age or early Roman, a number of ditches produced pottery that can confidently be dated to the post-Conquest period.

This pottery was almost exclusively present in ditches that were stratigraphically later than those in Phase 2, suggesting that its presence is a legitimate indicator of a tangibly later phase of enclosures. The character and layout of the enclosures in Phase 2.1 do also seem slightly different to those of their predecessors, suggesting that the transition from Phase 2 to Phase 2.1 was slightly more substantial than previous remodellings of the site had been.

As with the enclosures in Phase 2, not all of those in Phase 2.1 were contemporaneous. Figure 7 shows the sequence of development for the eastern enclosures; modifications to the western enclosures were also apparent, but a combination of uncertain stratigraphy and an incomplete plan of their full extent makes it impossible to tell which elements were earlier, and which later. The Phase 2.1 enclosures were generally larger than those in Phase 2, and were also defined mostly by deeper and wider ditches, presumably for improved drainage: G9, G11 and G40 all reached depths of 0.8m (Fig. 7: c, d and h), while G40 was up to 2.9m wide. The development of two distinct, separate groups of enclosures is a change from the articulated network in Phase 2, and the larger size of the Phase 2.1 enclosures further suggests a change in either the enclosures' functions, or in the settlement's organisation. It is unlikely that these larger enclosures were subdivided by the continued use of some of the Phase 2 ditches — the main eastern one enclosed an area that appears previously to have been mostly unenclosed — but it is possible that some, such as G26 and G48 (Fig. 5), were retained.

While little can be said about the western enclosures, three stages of development can be detected for the eastern ones. The earliest was defined by ditches G11, G18, G58 and G61, which all appear to have been contemporary. The latter three formed a large enclosure which seems to have been left open to the south, perhaps suggesting that it was used for human rather than pastoral activities. In contrast, the smaller, irregularly shaped enclosure formed to the west by G11 had a narrow south-east entrance which suggests that it was used for holding livestock, with animals easily able to be funnelled in and out. The western end of ditch G58 suggests that the narrow enclosed areas between the large enclosure and G11 are more likely to have been races than trackways, since no thoroughfare was possible; there were no indications during excavation that this blocking ditch was a later alteration. It is unclear whether the area to the south-east of the large enclosure was enclosed or not: ditch G11 continued its course, as presumably did a probable precursor to G9, but no south-east boundary was revealed within the excavated area.

The second stage of development for the eastern enclosures comprised the modification of the large enclosure by ditch G10. Most of the other ditches are likely to have been retained, G61 being the only probable exception. This would have left a narrow access point at G10's north-west corner; this could have been designed to allow animals out into the race or trackway, whereas the location of the wider entrance in the middle of the enclosure's south-east side suggests that it was designed for human traffic, and possibly vehicular.

The subsequent creation of ditch G9 may simply represent a re-cutting of an earlier enclosure ditch, yet it may have been a much more extensive boundary that was formed after the enclosures were no longer in use. The pottery assemblage recovered

from it contains a significantly higher percentage of diagnostically Roman wares — combined with the stratigraphic evidence, this strongly suggests that the ditch remained in use after all the others had silted up.

2.4 Phase 3: Early Saxon

The excavation identified three features which have been interpreted as early Saxon sunken-featured buildings (SFBs). Only two of these (G45 and G46) contained early Saxon pottery, but the sub-rectangular shape, steep sides and flat base of G44 support a similar interpretation (Fig. 8). G44 was the smallest, measuring 3.3 x 2.3m in plan, while G45 was the largest at 4.2 x 3.2m. A single small post-hole was present in the eastern end of G45, just 0.2m in diameter, whereas more substantial post-holes at the opposite ends of G46 were 0.4m in diameter and 0.5–0.6m deep.

Two of the SFBs were dug through Phase 2.1 enclosure ditches. This suggests that there was a period of disuse in which the ditches were allowed to silt up, although the correlation between the location of the SFBs and the Roman ditches also suggests that the layout of the enclosures was still extant in the early Saxon period, possibly leading to their re-use.

2.5 Phase 4: Medieval/post-medieval

Evidence of activity in the medieval and post-medieval periods was limited to the remains of five NW–SE furrows in the eastern half of the excavated area, and two NE–SW ones in the western half. These were spaced at 5–7m intervals. Their alignment, particularly at the eastern end, suggests an awareness of the earlier field system when ridge-and-furrow ploughing began — some of the boundaries established in Phase 2.1 (particularly G9) perhaps still existed as hedges or earthworks.

2.6 Phase 5: Modern

A number of modern features were present across the site, the most substantial of which was a post-built structure with the remains of modern timber still present in the post-holes. Other anomalies are probably related to modern trenching.

3. COINS

Five coins were recovered at Bedford Academy: three that were struck during the later Iron Age; one possible late Roman bronze; and a medieval silver long-cross penny. Details of the coins are presented in Table 1.

The three Iron Age coins are all bronze units understood to have been struck during the later part of the first century BC. These so-called 'dynastic' issues bear the name of Tasciovanus who, it is thought, was a 'king' of the Catuvellauni and who was able to take control, albeit temporarily, of the Trinovantes tribe to the east. The territory of the Catuvellauni appears to have been centred on the *oppidum* at Verulamium (St Albans) and included the modern counties of Hertfordshire and Bedfordshire, as well as parts of neighbouring counties to the west and north.

The Celtic Coin Index currently holds records for 108 Iron Age coins from Bedfordshire (www.finds.org.uk/CCI — last accessed on 19.12.2012), the vast majority of which were produced in the 'Eastern' region (*i.e.* Catuvellaunian and/or Trinovantian). These local coins include two further examples of the winged-horse type recovered from Bedford Academy (RA11), that were found during excavations at Odell in the 1970s (currently in Bedford Museum). Only four other Iron Age coins from the vicinity of Bedford are recorded in the Index (a gold quarter-stater and three bronze units). Of these, three are recent metal-detected finds while the fourth was found to the south of Bedford at Cotton End in 1919.

The Bedford Academy finds are therefore the first Iron Age coins known to come from Bedford itself. Four were found in the topsoil, while the fifth (RA15) was recovered from the fill of a Phase 2 (late Iron Age / early Roman) ditch (G28). Although this is a small assemblage, it provides important new information to add to our understanding of Bedford's history before the Roman period.

RA no.	1	10	11	12	15
Group	50	50	50	50	28
Denomination	AE4	Penny	AE unit	AE unit	AE unit
Date	late 3rd–4th century?	1247–79	late 1st century BC	late 1st century BC	late 1st century BC
Obverse	illegible	Henry III / Edward I	Head r.	Animal (lion?) r. looking back, pellet border	Laureate head l., in border
Reverse	illegible	Long cross — legend uncertain	Winged horse l., before pellet-in-ring, below VIR, pellet border	Sphinx l., pellet border	Animal (deer?) l. looking back, above pellet triangle, before pellet-in-ring
Region / Ruler			Eastern (Trinovantes) / of Tasciovanus	Eastern (Trinovantes) / attrib. to Tasciovanus	Eastern (Trinovantes) / attrib. to Tasciovanus
Weight			1.9g	1.1g	1.1g
Reference			BMC 1688; VA 1711	BMC 1760; VA 1824	BMC 1759; VA 1822

Table 1: Catalogue of coins

4. POTTERY

4.1 Methodology

The pottery assemblage was examined by context, and fabric types and form codes identified in accordance with the Bedfordshire Ceramic Type Series (see Appendix 1). Additionally, the late Neolithic/early Bronze Age Beaker was analysed in accordance with the guidelines for analysis and publication laid down by the Prehistoric Ceramic research Group (PCRG 1992, revised 1997). Quantification was by minimum vessel and sherd count, and weight. The condition of the pottery from each context was noted, and attributes such as decoration, manufacture, levels of abrasion, and evidence of function (residues, sooting and wear marks *etc*.) were recorded. Selected pottery is drawn in Figures 10–13; vessels are shown at one quarter size, external view on the right and internal view on the left. Handmade vessels are illustrated with hatched sections, and wheel-thrown vessels with solid sections.

4.2 Prehistoric: Phase 1

Fifty-five grog-tempered sherds weighing a total of 1.2kg were recovered from pit G1. The sherds represent two vessels, both later Neolithic/early Bronze Age Beakers, which are represented by a mix of moderately well-preserved large and small sherds from the base of one vessel and the rim of a second. The large size of many of the sherds suggests that at least some of the pottery was placed into the pit as large slabs, although neither vessel was complete at its time of deposition. The presence of the large rim and base sherds suggests that a degree of sherd selection took place during the filling of the pit.

The first Beaker is represented by a semi-complete base with a diameter of *c.* 70mm plus undecorated sherds from the body of the vessel. The base is stepped and finished with folding and smoothing. Most of the body sherds are undecorated, though one has deep, pinched-out ridges and perhaps comes from the upper part of the vessel. The second Beaker, of which only the upper half survives, is decorated all over with single fingernail impressions (Figure 9). Its rim is flattened and pinched or rolled outwards to form a pronounced external lip. The Beaker is barrel-shaped with a short, softly inturned neck marked by a pinched-out cordon.

The Beakers are non-funerary and find some parallel with similar vessels found along the Bedford Western Bypass and in the Biddenham Loop, where both fingernail-impressed decoration and pinched-out cordons were present (Percival forthcoming; Allen 2008, fig. 6.14: P13, P14). However, no comb-impressed decoration was found, even though this was common within both the Bedford Western Bypass and Biddenham Loop assemblages (Percival forthcoming, Allen 2008, fig. 6.14: P8, P9). The Beaker vessels are predominantly grog-tempered, again consistent with the majority of those found along the Bedford Western Bypass and in the Biddenham Loop (Percival forthcoming; Allen 2008, 113). The inclusion of large rim and base sherds within the pit perhaps indicates similar depositional practices to those suggested for several of the assemblages from the Biddenham Loop excavations, where large unabraded and semi-complete vessels were found in non-funerary deposits, dated to *c.* 2100 BC (Allen 2008, 113).

Nine abraded late Iron Age sherds (167g), representing four vessels, were recovered from gullies G35. The size and poor condition of the sherds suggests that they accumulated in the earthwork hollows left by the gullies.

4.3 Late Iron Age and early Roman: Phase 2

Phase 2 features yielded 1,572 sherds, weighing 33.9kg and representing 659 vessels (Table 2). Enclosure ditches accounted for 84% (by sherd count) of these, the largest concentrations coming from G37 and G28. Pits accounted for 16%, with the remainder coming from a possible cremation burial G42, which comprised twenty-three base and lower body sherds (1.2kg) from a truncated, coarse, grog-tempered jar.

Group	No. sherds	Weight (g)
G2 Enclosure ditches	32	1,407
G3 Enclosure ditches	79	1,868
G4 Enclosure ditches	85	1,098
G5 Pits	5	212
G7 Gullies	69	946
G8 Enclosure ditch	1	18
G12 Enclosure ditches	22	246
G13 Ditches	66	1,225
G14 Ditches	32	592
G15 Roundhouse gully	19	205
G17 Ditch	8	190
G19 Quarry pits	21	107
G20 Ditches	30	497
G21 Enclosure ditches	12	161
G24 Gullies	15	209
G26 Enclosure ditches	34	874
G28 Enclosure ditches	179	3,583
G29 Pits	7	225
G30 Post holes	1	8
G31 Pit	32	1,643
G32 Ditch	10	214
G33 Enclosure ditch	26	354
G36 Ditches	100	1,562
G37 Gully	231	5,348
G38 Intercutting pits	41	1,006
G39 Enclosure ditches	16	241
G42 Cremation	23	1,258
G43 Pits	87	2,835
G47 Ditch	13	251
G48 Enclosure ditches	79	2,596
G56 Pit	3	41
G57 Ditch	4	38
G59 Ditch	115	1,744
G60 Pits	4	48
G64 Pit	13	52
G65 Ditch	38	679
G66 Ditch	2	7
G67 Ditch	9	73
G68 Ditches	9	305
	1,572	**33,963**

Table 2: Phase 2 — pottery quantification by Group

The pottery survives in fair to good condition, reflected in an average sherd weight of 22g. Over 99% of the assemblage comprises wheel-thrown, grog-tempered late Iron Age vessels in the 'Belgic' tradition, and contemporary handmade coarse wares, the latter mainly occurring in shell/grog- or shell-tempered fabrics (Table 3). Shelly vessels are likely to derive from one of a number of kiln sites known in the vicinity, such as Bromham, Clapham or Stagsden. Sources for the grog-tempered types are unknown, but are likely to be local. Eight coarse-ware sherds (39g) in sand- and shell-tempered fabric types are datable to the early Roman period, and were recovered from late disuse fills.

Fabric	Common name	Vess. No.	Sherd No.	Wt (g)
F03	Grog and sand	18	64	1,054
F05	Grog and shell	53	129	3,678
F06A	Fine grog	42	82	461
F06B	Medium grog	204	371	6,959
F06C	Coarse grog	120	229	7,862
F07	Shell	61	193	4,240
F08	Shell and grog	2	4	130
F09	Sand and grog	114	373	7,885
F22	Grog and organic	1	4	62
F24	Buff shelly	1	1	56
F33	Grog and calcareous	7	20	364
F34	Sand	17	40	385
F39	Grog and mica	9	29	568
		649	**1,539**	**33,704**

Table 3: Late Iron Age pottery fabrics from Phase 2

Diagnostic vessel forms are in the 'Belgic' tradition, the appearance of which in the south-east Midlands is conventionally dated to *c*. 50BC, although the adoption of the tradition may not have become widespread until *c.* 40–50 years later (Hill 2002).

Jars are the dominant vessel form and occur in varying sizes, 120–360mm in diameter. Most have simple everted rims (form B1-1; after Thompson 1982). Lid-seated (C5-1; C5-2; Fig. 10: 1 and Fig. 11: 10), narrow-necked (Fig. 10: 4), bead-rim, cordoned (Fig. 11: 7 and 9) and large storage jars (C6-1; Fig. 10: 2, 3 and 5) also occur, as well as a rippled/corrugated-shouldered jar (B2-1; Fig. 11: 8) and a wide-rimmed, straight-sided jar (C1-3). Other forms are wide-mouthed, bead-rim and plain-lidded bowls (D3-3); rouletted beakers; straight-walled platters (G1-1); butt beakers, including a G5-1; plain barrel-shaped form (G5-1; Fig. 11: 6); bell-shaped (Fig. 11: 12), carinated (Fig. 11: 13) and conical lids (L6); and a single carinated cup (E1-3). Gallo-Belgic imports datable to the 1st century AD comprise four sherds from two Terra Nigra platters (Fig. 11: 11). Twenty sherds represent three rouletted white-ware beakers copying Gallo-Belgic fabrics and forms.

Decorative elements comprise linear and random combing, rouletting, and burnishing. Five vessels have been modified by the drilling of post-firing holes through base and body sherds, probably to facilitate repair. A number of shelly vessels have sooted exteriors and/or internal sooty residues, indicating their use as cooking pots.

4.4 Early Roman: Phase 2.1

Features assigned to Phase 2.1 yielded 1,650 sherds (14.1kg) , representing 319 vessels. This material derived entirely from ditch fills with the largest concentrations from enclosures G9 and G10 (Table 4). Four intrusive Saxon sherds (40g) were recovered from enclosure G11. A low average sherd weight of only 8g indicates that the pottery is more fragmented than the Phase 2 material, although three vessels are each represented by more than 200 sherds, suggesting primary deposition for at least some of the assemblage.

Group	No. sherds	Weight (g)
G9	1,050	4,863
G10	206	3,532
G11	51	641
G18	9	90
G34	20	342
G40	77	1,340
G41	53	582
G58	151	2,349
G61	33	458
	1,650	**14,197**

Table 4: Phase 2.1 — pottery quantification by Group

Late Iron Age pottery totals 618 sherds (9.6kg), representing 283 vessels, and Romanised wares 1,028 sherds (4.4kg), representing thirty-three vessels. The condition and quantity of the former suggests it is unlikely to be residual, and attests the longevity of the Iron Age tradition. This is consistent with the established local pattern, where the use of late 'Belgic' Iron Age wares appears to extend into the early 2nd century (*cf.* Stagsden (Dawson 2000a), Biddenham Loop (Luke 2008), Wilstead/Wilshamstead (Luke and Preece 2010; Ingham 2010), and Marsh Leys Farm (Luke and Preece 2011)).

Fabric	Common name	Vess. No.	Sherd No.	Wt (g)
F03	Grog and sand	18	65	1,404
F05	Grog and shell	20	82	942
F06A	Fine grog	13	15	128
F06B	Medium grog	106	205	2,600
F06C	Coarse grog	34	62	1,879
F07	Shell	25	52	809
F08	Shell and grog	4	6	65
F09	Sand and grog	52	100	1,615
F24	Buff shelly	1	1	12
F33	Grog and calcareous	2	7	67
F34	Sand	6	17	123
F39	Grog and mica	2	6	44
		283	**618**	**9,688**

Table 5: Late Iron Age pottery fabrics from Phase 2.1

Late Iron Age pottery comprises a range of grog-tempered late Iron Age vessels in the 'Belgic' tradition, and contemporary handmade coarse wares comparable with the Phase 2 material (Table 5). The diagnostic assemblage is dominated by jars of varying size, ranging in diameter from 110mm to 340mm. Other forms are beakers, bell-shaped lids (form L1; after Thompson 1982), platters, and single examples of a cordoned bowl, wide-mouthed bowl (G2-2); and carinated cup (E1-2). The base of one

vessel has been modified by the addition of post-firing drilled holes (5mm diameter) to facilitate use as perhaps a strainer.

The Roman assemblage comprises a broadly comparable range of wares to those recovered from the contemporary nearby settlements at Wilstead/Wilshamstead (Luke and Preece 2010; Ingham 2010), Marsh Leys Farm (Luke and Preece 2011)), and along the routes of the Bedford Southern and Western Bypasses (Albion Archaeology in prep; Luke forthcoming). The basic, utilitarian types present, coupled with the relatively small amount of both regional and continental imports, are indicative of a low status, domestic assemblage. The majority of the pottery comprises coarse wares, represented by a standard range of locally manufactured, reduced, sand-tempered wares and a smaller quantity of shell-tempered vessels (Table 6). Grey-ware vessels are likely to derive from nearby pottery kilns: six were identified on the Mile Road allotment site immediately west of Bedford Academy (Dring 1971; HER 979), while fragments of kiln bars were recovered from the Phase 2 and Phase 2.1 enclosure ditches (see section 6.2). Further Roman kiln debris was recorded approximately 400m to the north, near the Southway Home for the Elderly (HER 16284). Grey-ware kilns are also known at Eastcotts (Albion Archaeology in prep.), while the shelly wares are comparable to vessels produced at kilns in Harrold (Brown 1994).

Fabric	Common name	Vess. No.	Sherd No.	Wt (g)
R03	White ware	1	3	13
R03C	Smooth white ware	1	1	16
R03E	White ware with fine shell	1	1	22
R04	Fine ware imports	2	232	1,241
R05C	Orange micaceous	4	219	966
R06B	Coarse grey ware	1	66	368
R06C	Fine grey ware	9	53	337
R06D	Micaceous grey ware	5	156	738
R06F	Grog-and-sand grey ware	1	1	5
R10A	Buff gritty ware	1	5	49
R10B	Buff fine ware	1	2	6
R10D	Buff micaceous ware	1	260	525
R13	Shell	3	6	106
R14	Sand (red-brown harsh)	2	23	77
		33	**1,028**	**4,469**

Table 6: Roman pottery fabrics from Phase 2.1

Vessel forms are few; they include lid-seated jars (Fig. 12: 14), wide-mouthed (Fig. 12: 15), and narrow-necked jars with everted rims, straight-sided bowls, and beakers. Specialised Roman types such as mortaria, amphorae and samian ware are absent from the assemblage. Regional imports are five early Roman white-ware sherds from the Verulamium-region industries. First-century AD Gallo-Belgic imports comprise two lagenae (double-handled flagons), recovered from enclosure ditch G9 (Fig. 12: 17 and 18). A third example appears to be a local copy of these Gaulish imports (Fig. 12: 16), although a source remains unclear. All are comparable to examples recovered from excavations at King Harry Lane, Verulamium (Stead and Rigby, 1989, 142: fig 57, GL6).

4.5 Early Saxon: Phase 3

Sunken-featured buildings G45 and G46 yielded 115 handmade sherds (1.8kg) datable to the early Saxon period. The pottery is hard-fired, undecorated and, in most cases, entirely reduced. Thirty-six individual vessels are represented, with a vessel to sherd ratio of 1:3, and an average sherd weight of 16g. The nine fabric types that are represented (Table 7) fall into four principal groups, based upon dominant inclusion. Ordered by prevalence, these are quartz sand (fabrics A15, A18, A23, A30, A32, A), calcareous (A15), organic (A19), and Mountsorrel granite (A25). With the exception of the latter, which originates from Charnwood, Leicestershire, all other fabrics are likely to have been locally manufactured using available clay sources, with the addition of simple tempering.

Fabric	Common name	Vess. No.	Sherd No.	Wt (g)
A15	Limestone and quartz	2	6	98
A16	Mixed coarse quartz	9	16	155
A18	Fine quartz	7	23	344
A19	Quartz and organic	4	19	146
A23	Sandstone	9	40	932
A25	Granite	1	2	23
A30	Sandstone and mica	1	2	68
A32	Red quartz	2	3	54
A	Non-specific Saxon	1	4	52
		36	**115**	**1,872**

Table 7: Saxon pottery fabrics from Phase 3

Forms are largely undiagnostic; feature sherds comprise simple upright and everted rims (Fig. 13: 19) and a vertical perforated lug (Fig. 13: 20), the latter comparable to an example recovered from Water End East, Great Barford (Timby *et al*. 2007, fig. 8.13: 3). No bases survive. Vessel-wall thickness varies between 3mm and 11mm. The surfaces of most sherds are untreated apart from simple hand-wiping, or burnishing. Three are externally sooted, and one has an internal black residue, the latter possibly resulting from the accidental burning of vessel contents during cooking.

A small quantity of early Saxon pottery was recovered during excavations at the Mile Road allotment site (Bedfordshire County Archaeology Service 1996: HER 979). Early and middle Saxon pottery assemblages are also known from Pear Tree Farm, Village Farm and Manor Farm, along the route of the Bedford Southern Bypass (Bedfordshire County Archaeology Service 1995).

The remainder of the assemblage comprises 137 residual late Iron Age and early Roman sherds (1.7kg), the majority associated with sunken-featured building G44 and probably deriving from underlying Roman pitting G43 (Table 8).

	Pre-Saxon		Saxon	
Group	No. sherds	Weight (g)	No. sherds	Weight (g)
G44	82	1,059	-	-
G45	4	12	35	489
G46	51	652	80	1,383
	137	**1,723**	**115**	**1,872**

Table 8: Phase 3 — pottery quantification by Group

4.6 Pottery Type Series

Pottery fabrics, based on surface appearance and major inclusion types, are summarised in Table 9 by chronological period, using type codes and common names in accordance with the Bedfordshire Ceramic Type Series, currently maintained by Albion Archaeology, and from whom detailed fabric descriptions are available. Bracketed numbers after each fabric code denote sherd numbers. No new fabric types were identified.

Fabric Type	Common name
Late Neolithic/early Bronze Age	
X07 (55)	Beaker
Fabric G,Q, QS: Both vessels are made of grog-tempered fabrics, each containing moderate, small to medium pieces of pale, angular grog. In addition both fabrics contain quartz sand and one has additional sparse, clear and opaque rounded quartz grains up to 3mm long.	
Late Iron Age	
F03 (129)	Grog and sand
F05 (218)	Grog and shell
F06A (107)	Fine grog
F06B (618)	Medium grog
F06C (318)	Coarse grog
F07 (254)	Shell
F08 (15)	Shell and grog
F09 (498)	Sand and grog
F22 (4)	Grog and organic
F24 (2)	Buff shell
F28 (1)	Fine sand
F33 (27)	Grog and calcareous
F34 (61)	Sand
F39 (35)	Grog and mica
Romano-British	
R03 (3)	White ware
R03C (1)	Smooth white ware
R03E (1)	Fine white ware
R04 (252)	Fine ware imports
R05A (2)	Orange sandy
R05C (224)	Orange micaceous
R05D (2)	White-slipped orange sandy
R06B (2)	Coarse grey ware
R06C (59)	Fine grey ware
R06D (159)	Micaceous grey ware
R06F (1)	Grog and sand grey ware
R10A (5)	Buff gritty ware
R10B (2)	Fine buff ware
R10D (260)	Micaceous buff ware
R13 (12)	Shell
R14 (12)	Sand (red-brown harsh)
R26 (4)	Terra Nigra
Saxon	
A15 (6)	Limestone and sand
A16 (16)	Coarse quartz
A18 (23)	Fine quartz
A19 (20)	Quartz and organic
A23 (43)	Sandstone
A25 (3)	Granite
A30 (2)	Sandstone and mica
A32 (3)	Red quartz
A (4)	Non specific Saxon ware

Table 9: Pottery type series

5. OTHER ARTEFACTS

5.1 Methodology

Forty-one 'other' artefacts (including coins), 144.2g of ferrous slag and 168g of vitrified clay were recovered during the investigations. Each object was assigned an identification and functional category, and was quantified by number and/or weight. All ironwork and selected copper alloy items were x-rayed by Lincolnshire Archives (Lincolnshire County Council). The x-ray plates form part of the site archive. A date range was assigned, where applicable, with reference to standard typological works. The assemblage is discussed by Phase, with catalogue descriptions at the end of each Phase discussion. Catalogue descriptions include both illustrated and non-illustrated artefacts, with the figure numbers provided as appropriate.

Catalogue Key: * (illustrated) OA 1 (Other Artefact catalogue no.); object type, material, and description; project phasing information Phase; G (Group no.); Context; RA (Registered Artefact no.); OA Fig. (figure no.)

The coin assemblage was identified by Dr Peter Guest (Cardiff University) and fully described in Section 3 above.

5.2 Prehistoric: Phase 1

Two pits assigned to Phase 1 produced small assemblages of worked flint. Pit G1, in the north-east corner of the site, yielded three flints deriving from differing cores: two are of translucent flint, one a dark grey, the other a grey-brown in colour, while the third piece is an opaque grey-brown flint with tan imperfections. This small assemblage comprises a fragment from a flake core, a large flake which appears to have been struck from its core in order to remove a sizeable imperfection from the striking platform, and a hard hammer-struck end scraper. The end scraper has rather bold/crude abrupt retouch, thins at the proximal end and has a crude notch on each lateral edge near the proximal end, the thinning and notching possibly suggesting it was hafted (OA1). The hard-hammer manufacture could suggest a date of later Neolithic – early Bronze Age, which is the same date as the Beaker pottery from the same pit.

Pit G49 yielded eleven pieces of flint which derive from at least five different cores. Ten pieces are debitage, comprising a core fragment, a primary flake, three secondary flakes, and seven tertiary flakes or parts thereof (two fragments may be shatter). The core fragment has overhangs, the primary flake is short and squat, and some of the flakes possess prominent bulbs of percussion, all traits suggesting a late Neolithic or later date. The single tool present, a knife, was made on a polished flake presumably originating from an axe (OA2). This flake has subsequently been re-worked; semi-abrupt retouch, taken from the ventral surface, is situated down one lateral edge, and both edges appear to have been ground on the dorsal surface. This piece, in common with the debitage, suggests a late Neolithic date for the assemblage.

The flint assemblage from these two pits suggests that there was some activity, although limited, in the late Neolithic or early Bronze Age. This is in accord with evidence for activity of that period to the east of Bedford Academy (HER18235;

Steadman 1999). Further evidence for activity at this time and also in earlier period comes from residual finds encountered in later features (see below).

OA1 End scraper. Flint (dark grey-brown). Hard hammer-struck end scraper with secondary damage (one lateral edge and part of retouched distal end broken off). Dorsal surface of proximal end thinned by removal of narrow flake; crude notch on each lateral edge near proximal end. Length 36.5mm; width 30mm; maximum thickness 8.5mm. Phase 1; G1; context 2480

***OA2** Knife. Flint (opaque grey-brown with cream mottling). Large sub-rectangular flake, dorsal surface retains polish, reworked with semi-abrupt retouch from ventral surface along one lateral edge, opposing edge has nicking. Both lateral edges on dorsal surface appear to be ground. Striking platform and bulb removed by abrupt retouch on proximal end. Post-depositional damage on dorsal surface. Length 72mm; width 35.7mm; thickness 6.7mm. Phase 1: G49; context 2102; RA17; Fig. 14

5.3 Late Iron Age and early Roman: Phase 2

Just seven items were recovered from Phase 2 deposits, three of which are residual flint debitage. One blade core with opposed platforms from ditch G39 suggests sporadic Mesolithic activity, while a tertiary flake from G33 has an overhang on the dorsal surface and a hinge fracture supporting the evidence of occasional later Neolithic/early Bronze Age activity encountered in Phase 1.

The contemporary evidence for late Iron Age activity is restricted in quantity and in distribution, the assemblage deriving from ditch fills G4 in the north-east and G28 to the south-west. Craft activity is represented by two items, and while this does reveal information about the economy of the settlement, the evidence is not closely datable. Woodworking, or perhaps bone-working may be indicated by the possible fragment of an iron gouge or spoon bit (OA3) from G4. A corner fragment of a triangular loom weight (OA4) from G28 attests to weaving, a household-based craft during this period. A fragment of copper alloy wire, also from G28, may have originated from a brooch coil or pin (OA5). The mid–late 1st-century BC Trinovantian coin of Tasciovanus, from the same ditch, provides a *terminus post quem* for this activity (Section 3). Two further coins of Tasciovanus were found in topsoil deposits, as was an Aucissa brooch (OA12) that presumably derived from Phase 2 activity (see Phase 5).

The evidence is suggestive of small-scale crafts carried out to meet the needs of the community, perhaps on a seasonal basis as an adjunct to agricultural activity; the same may be true for the late Iron Age pottery kilns uncovered to the south-west of the investigated area (Dring 1971). The combined evidence suggests a farming community that was largely, if not wholly self-sufficient, although the coins also indicate that the inhabitants did engage in commerce or trade.

***OA3** Gouge or spoon bit. Iron. One end possessing a narrow concave blade (width *c*. 13mm (from x-ray); depth 6mm), thickens gradually to rectangular-sectioned stem (width 10mm; thickness 7mm (from x-ray)), opposing end tapering rectangular-sectioned tang (*c*. 7mm by 5mm), with sloping shoulder. Length 128mm. Phase 2; G4; context 2685; RA31; Fig. 15

OA4 Loom weight. Ceramic (pale orange exterior with small core of reduced grey, fine sand-tempered fabric). Corner fragment from a triangular loom weight. No diagonal perforations survive, nor does the full thickness. The corner is rounded and does not possess a channel/groove. The fragment may derive from the apex of the weight. Height 82.7mm; width 98.5mm; thickness >40.9mm. Phase 2; G28; context 2291; RA32

OA5 Wire. Copper alloy. Square to rectangular at either end (both ends broken), rounded square in the middle part. Possibly straightened brooch coil, damaged needle or pin? One end bent over itself. Estimated straightened length 48.5mm; dimensions 2.2mm by 2.2mm. Phase 2; G28; context 2130: RA16

5.4 Early Roman: Phase 2.1

Residual flint accounts for more than half of the Phase 2.1 assemblage. A serrated blade from G10 provides some evidence for Mesolithic activity, while a retouched flake from G58 and a secondary flake from G41 possess narrow blade-like removal scars, suggesting a date in the earlier Neolithic. A core fragment from G11 exhibits overhangs, a trait which may indicate later Neolithic activity. This assemblage of worked flint was dispersed across the excavated area, with items occurring singly in ditch fills.

Iron smithing appears to have been carried out in G11, a large enclosed area in the eastern half of the site. Although the quantity of ferrous slag is limited (93.3g), it was found in association with vitrified hearth lining (168g) and a moderate quantity (*c.* 30g) of both hammerscale (flake) and hammerslag (spheroidal), indicative of smithing. An iron strap fragment was found in the ditch fill of the same enclosure. In addition, the remains of a brooch coil and pin were recovered from western enclosure G40; unfortunately the remains cannot be closely dated, as the brooch's use spans the late Iron Age to the 2nd century.

There is very little to differentiate the majority of the stratified late Iron Age and early Romano assemblages, both producing limited evidence of small-scale crafts, with little indication of imported goods being available or affordable. There is a paucity of personal items within both, in sharp contrast to the general trend in southern England for this period, which saw a marked increase in the deposition of toiletry items (Hill 1997, 98) and a massive increase in brooch deposition (Haslegrove 1997, 51–3). The lack of early Roman coins may be significant, in contrast with the three from the late Iron Age; this absence could suggest a decline in the fortunes of the inhabitants or that the focus of activity had shifted elsewhere.

5.5 Early Saxon: Phase 3

Despite the small size of the 'other' artefacts assemblage from the three isolated sunken-featured buildings (SFBs), it does provide evidence for both subsistence and craft activities. The fills of SFB G44 yielded a reaping or pruning hook, with a socketed handle and a blade that has a curving edge which runs towards the socket (OA6). This form of blade can be paralleled on both Roman reaping hooks (Manning 1985, 53–5) and 'small hooks' (Manning 1985, 56-8), the form having its origins in the Iron Age. OA6 is verging on the small size for a reaping hook, but is larger than Manning's 'small hook' category. Examples of similar hooks were also recovered from Saxon SFBs dated to the late 5th–earlier 6th and 6th–7th centuries at West Stow (West 1985, 146–9; fig 30.4: SFB1 and fig. 48.1: SFB 8); these examples, however, had tanged as opposed to socketed handles. Its presence does strongly suggest that some agricultural or horticultural activity was taking place at Bedford Academy, but it is difficult to say whether the hook was of Saxon date, or either residual or 'scavenged' from earlier Roman occupation in the area — the pottery assemblage from G44 dates entirely to the late Iron Age or Roman period.

The items from SFB G45 all relate to textile working, the spindle whorl OA7) used in the processing of wool and the loom weight fragments (OA8-OA9) in textile production. The spindle whorl has one flat face and conforms to Rogers' form A1, most commonly encountered in deposits from the early Saxon period, with the form on the decline in the later 10th and 11th centuries (Rogers 1997, 1736). The 8.5mm diameter of the whorl's central perforation is appropriate for the typically small spindles in use in the early and middle Saxon period (Rogers 2009, 283). Similar A1 ceramic whorls were found within SFBs at Biddenham Loop (Duncan in prep.). The loom weights, although incomplete, are of the annular variety dating to the early Saxon period (Dunning *et al*. 1959, 23–4) and indicate the use of a warp-weighted loom.

In addition to a residual flint flake, SFB G46 also yielded a very small globular bead of opaque blue-green glass (OA10), likely to have been part of a segmented bead. This bead type is most commonly found in deposits of the 3rd–4th centuries, but examples are also known from 2nd-century contexts (Guido 1978, 92); it may have been residual, or 'scavenged' from nearby Roman deposits. An unperforated pig fibula pin (OA11) was also found in SFB G46, its head area trimmed (trimming marks still visible) and with wear evident on its lower shank and tip. These pins have a lengthy history but are most commonly found in deposits of Saxon and Saxo-Norman date.

Although the evidence for activity in the Saxon period is more dispersed than that for the late Iron Age, it bears certain similarities, in particular with regard to the household-based textile working. The socketed reaping/pruning hook recovered from SFB G44 may imply that agricultural activity played a significant role in the subsistence economy. This modest assemblage suggests that an economy based on small-scale crafts in concert with agriculture persisted, if not continuously, from the late Iron Age into the early Saxon periods.

***OA6** Pruning hook. Iron. Socketed, iron rivet *in situ* near mouth of socket, small hook with curved blade the edge of which runs back toward the handle. Manning type 3 or reaping hook type 2. Near complete. Length *c*. 87mm. Phase 3; G44; context 2403; RA25; Fig. 16

***OA7** Spindle whorl. Ceramic. One flat face, form A1, central perforation *c*. 8.5mm diameter, external diameter *c*. 41mm, ht. 18.2mm. Phase 3; G45; context 2312; RA22; Fig. 16

OA8 Loom weight. Ceramic. Incomplete remains of an annular loom weight, comprising about a quarter of the upper surface of the weight, full thickness not surviving. Estimated external diameter *c*. 120mm; central perforation 60mm; wall width 36.5mm. Phase 3; G45; context 2312; RA20

OA9 RA21 Loom weight. Ceramic. Poorly fired/sun-dried fragments of an annular loom weight. Estimated external diameter 120mm; central hole *c*. 60mm diameter. Phase 3; G45; context 2312; RA21

OA10 Bead. Glass (opaque blue-green). Very small globular bead (possibly part of a segmented bead). Diameter 2.8mm; height *c*. 2mm. Phase 3; G46; context 2464; RA30

***OA11** Pin. Bone. Large unperforated pig fibula pin. Head trimmed, knife cuts visible on shank (not smoothed), tip of pin worn and smooth. Length 107.4mm. Phase 3; G46; context 2464; RA28; Fig. 16

5.6 Post-medieval / modern: Phase 5

Six items were retained from topsoil and subsoil deposits, four of which are coins (Section 3). The Aucissa brooch (OA12) presumably derived from Phase 2 activity; the

type is generally thought to have been introduced to Britain by the Roman army, and has a suggested Claudio-Neronian date (Olivier 1996, 248). The cast and split strap-end, with heart-shaped or bi-lobed terminal, is decorated with ring-and-dot and zig-zag ornament (OA13). Heart-shaped strap ends are considered to be late Roman in date and to have a military connection (Simpson 1976, 201–2). The Bedford Academy strap end, however, also shares characteristics with Type 5A strap ends discussed by Hawkes and Dunning (1961, 63–5). It would appear to be an insular cross between the two forms; either way, it is likely to date to the late 4th or 5th century. Whether this item was originally a personal possession of one of the occupants of the Phase 3 SFBs, or perhaps was scavenged from slightly further afield, is uncertain.

***OA12** Brooch. Copper alloy. Aucissa. Hinged brooch with relatively wide (46mm) and long strip bow, with central groove and raised, decorated ridge (triangular stamps forming chevron pattern) either side, short foot with foot knob and part of catch plate (occupying only length of foot). Top of bow rolled up and over to form hinge; pin does not survive. Bow curvature is distorted by flattening. Length 65mm. Phase 5; G50; context 2002; RA13; Fig. 17

***OA13** Strap end. Copper alloy. Cast strap end, single plate from terminal through body, split in two at mouth (back plate of mouth broken off). Remains of one rivet hole at mouth. The terminal is heart-shaped or bi-lobed, damaged C-shape decoration (or 'fillets') at the 'neck' and a somewhat elongated, splayed panel straight-edged end (sometimes referred to as the butt-end). The terminal is decorated with a triangle of ring-and-dot ornament, with one ring and dot in each lobe of the terminal and a third surmounting them; these appear to be linked with zig-zag ornamentation. The splayed panel has a ring and dot above the neck and a second triangular arrangement of ring-and-dot near the mouth of the strap end. L. 40.6mm. Phase 5; G50; context 2002; RA23; Fig. 17

5.7 Summary

The flint assemblage from Phase 1 suggests that there was some activity, albeit limited, in the late Neolithic. This is in accord with evidence for late Neolithic / early Bronze Age activity to the east of Bedford Academy (HER18235; Steadman 1999). The residual flint assemblage from Phases 2 and 2.1 suggests sporadic Mesolithic, earlier Neolithic and later Neolithic activity in the vicinity, a situation also mirrored at HER18235 (La Niece 1999, 24–6).

Although the three mid–late 1st-century BC coins attest to later Iron Age activity (Section 3), the remaining assemblage is not closely dated. The single stratified coin of Tasciovanus from Phase 2 (G28) does provide a *terminus post quem* for the loom weight and hence attests to a late 1st-century BC date for the household-based craft that used it. Woodworking or bone-working may also have been carried out during this period in enclosure G28.

The forms of both the spindle whorl and the loom weights from SFB G45 support the early Saxon date for Phase 3 activity. The Other Artefacts assemblage from SFB G46, a ‘pig fibula pin’ and a late Roman bead, are not out of place in an early Saxon context, the bead perhaps scavenged from nearby Roman-period occupation. A watching brief within the area of the allotments to the south-west of the Bedford Academy investigations also uncovered some evidence for early to middle Saxon activity (BCAS 1996).

The Other Artefacts assemblage from the Bedford Academy excavations is very small, and as such can only make a modest contribution to understanding the settlement.

However, the wide range of periods represented, from the Mesolithic to the early Saxon period, suggests that the area adjacent to the Elstow Brook retained significance, be it religious or economic, for an extended period.

6. DAUB/FIRED CLAY

6.1 Late Iron Age and early Roman: Phase 2

Ninety-eight fired clay fragments (2.0kg) were collected from Phase 2 features, the majority deriving from enclosure ditches G33 and G36 in the south-west corner of the site. Sixty-three are amorphous pieces (455g) in an oxidised, friable sand-tempered fabric, while the remainder comprise portions of approximately thirteen handmade fired-clay slabs. The latter are distinguished by their finger-smoothed surfaces and edges, and range in thickness from 17mm to 37mm. Although their function cannot be fully determined, such slabs are commonly recovered from late Iron Age and early Roman sites, for example Water End East, Great Barford (Poole 2007, 273), Luton Road, Wilstead (Wells 2010, 139), Biddenham Loop (Slowikowski 2008, 236) and Marsh Leys Farm (Wells 2011, 112). It seems likely they represent pre-fabricated furniture from simple domestic ovens or hearths, or agricultural drying ovens. The material represents secondary deposition of occupation material, which cannot be directly associated with the use of the features from which it was collected.

Sand-tempered fragments of kiln bars (273g) were recovered from ditches G13 and G47. Two pieces derive from a square-sectioned tapering example measuring *c.* 30 x 30mm, and a single piece from a circular-sectioned kiln bar with a diameter of *c.* 25mm. Although no pottery kilns were found within the excavated area, the nearby kilns at the Mile Road allotment site may be the source of these stray finds.

6.2 Early Roman: Phase 2.1

Twenty-six fragments of fired clay (485g) were recovered, including portions of approximately four handmade slabs of fired clay in an organic fabric, the majority deriving from enclosure ditches G10. The slabs range in thickness from 18mm to 20mm and have finger-smoothed surfaces and edges. Slabs are commonly recovered from late Iron Age and early Roman sites, although their function cannot be fully determined.

Sand-tempered fragments of kiln bars (259g) were recovered from enclosure ditches G40 and G41. They comprise two square-sectioned, tapering examples measuring *c.* 36 x 36mm – 32 x 32mm; and a cigar-shaped example *c*. 25mm in diameter.

Amorphous and abraded fragments in an oxidised sand-tempered fabric constitute the remainder of the assemblage.

6.3 Saxon: Phase 3

The fill of sunken-featured building (SFB) G44 yielded two joining pieces of daub (total weight 78g), distinguished by the presence of wattle impressions; and a small organic fragment with finger-smoothed surfaces, representing a possible slab (29g). Seven poorly fired or sun-baked fragments (312g) derived from SFB G45, in a similar fabric to two annular loom weights recovered from the same feature (Section 5), and may represent a dump of loom-weight material. Similar 'raw clay' deposits of unfired and often formless clay have been identified in SFBs at West Stow (West 1985, 138), Mucking (Hamerow 1993, 15–6), West Heslerton (Powlesland 1998, 3.7.6.1) and Catholme (Losco-Bradley and Kinsley 2002, 89). The feature also contained six

reduced, sand-tempered, circular-sectioned fragments of kiln bars (57g), likely to be of Roman date.

6.4 Fired Clay Type Series

Fired clay fabrics, based on surface appearance and inclusion types, were identified using type codes and common names in accordance with the Bedfordshire Ceramic Type Series, currently maintained by Albion Archaeology.

Organic (ORG): (37% total assemblage by weight) — fine pink-buff-orange fabric, dark blue-grey where reduced, with characteristic 'soapy' feel. Inclusions are frequent, ill-sorted organic material, evidenced by elongated voids where the latter has burnt out and occasional sub-angular multi-coloured quartz *c.* 0.1–0.5mm. Used for portable elements of oven furniture.

Sand (SDY): (35%) — friable mid to dark orange-red fabric with variable dark grey-black patches where reduced. Inclusions are abundant sub-rounded and sub-angular quartz *c*. 0.5–0.9mm and occasional red iron ore *c*. 0.5mm. Some larger fragments contain sub-angular/angular flint or chert pebbles ranging in size from 10mm to 20mm. An entirely reduced version is used exclusively for kiln bars.

Sand and Organic: (SAO): (28%) — fine pink-buff-orange fabric, dark blue-grey where reduced. Inclusions are moderate, poorly sorted, sub-angular multi-coloured quartz *c.* 0.1–0.5mm (occasionally ranging to 1.0mm) and frequent organic material, evidenced by elongated voids where the latter has burnt out. Used for portable elements of oven furniture.

7. ANIMAL BONE

7.1 Introduction

Animal bones were recovered from sixty-nine contexts. All bones and teeth recovered both by hand and from the sieved samples were recorded individually on an Access database. Where appropriate, the following information was recorded for each specimen: context; species; anatomical element; zone(s) of bone present; approximate percentage of bone present; observations of preservation (*e.g.* gnawing damage; erosion; weathering; charring; concretions; modern breaks); fusion data; associated bone group number; sieved sample number; pathology; and any other comments. Separate tables linked to the main table by a unique identification number were created for metrical, butchery and tooth ageing data. Tooth eruption and wear descriptions for cattle, sheep/goat and pig follow Grant (1982). The few measurements taken are those recommended by von den Driesch (1976). Unidentified mammal fragments were counted but not subdivided into size categories.

7.2 Results

7.2.1 Phase 1: Prehistoric

A single unidentified mammal fragment was recovered from G35.

7.2.2 Phase 2: Late Iron Age – early Roman

Animal bones were recovered from forty-three contexts within nineteen different groups. The largest assemblage of forty-one fragments came from quarry pit G38, although these included only fourteen identified specimens. Most of the groups produced fewer than ten fragments. Preservation of the assemblages was graded as poor in ten contexts (heavily eroded and/or burnt), quite poor in twenty-three (usually slightly eroded), moderate in nine and quite good in only one. 197 fragments were recovered in total, of which fifty-eight were found in sieved samples. Fifty-five of the fragments were burnt, mainly from sieved samples.

Phase	**1**	**2**	**2**	**2**	**2.1**	**2.1**	**2.1**	**3**	**3**	**3**
	HC	HC	Sieved	Total	HC	Sieved	Total	HC	Sieved	Total
Cattle		29		29	11		11	20		**20**
Sheep/Goat		27	1	28	2		2	4		**4**
Pig		3		3	1		1	1		**1**
Equid		3		3						
Cat		15		15						
Total identified	**0**	**77**	**1**	**78**	**14**	**0**	**14**	**25**	**0**	**25**
Unid. mammal	1	62	57	119	12	2	14	42	10	**52**
Total	**1**	**139**	**58**	**197**	**26**	**2**	**28**	**67**	**10**	**77**

Counts are of numbers of individual specimens (NISP) and include bones in sieved samples
HC = hand-collected

Table 10: Bedford Academy: animal bones recorded by phase

Seventy-eight of the specimens were identified, of which only one (sheep/goat) came from a sieved sample. Cattle provided twenty-nine of the fragments (Tables 10–11).

The assemblage is biased towards mandible fragments and loose teeth, partly reflecting the relatively poor preservation of most of the assemblage.

Five jaws provide ageing evidence. One mandible belongs to a mature adult, and a second to a young adult (fourth premolar just coming into wear), while two mandibles and a maxilla still possess deciduous premolars and belong to immature or sub-adult cattle. Bones of very young animals are unlikely to have survived in some of the deposits. Although this is a very small sample, it is interesting that it includes several immature cattle. Immature and sub-adult cattle were also found quite commonly in late Iron Age and early Roman deposits at other sites in the vicinity, notably Marsh Leys Farm (Maltby 2011a) and Newnham (Maltby 2011b), which could imply that meat production was a more important facet of cattle exploitation than dairy production at that time.

Species	Cattle				Sheep/goat				Pig				Horse	Cat
Phase	2	2.1	3	Total	2	2.1	3	Total	2	2.1	3	Total	2	2
Maxilla	1		1	2	1			1						
Mandible	7		5	12	4			4	1			1	1	
Loose Teeth	6	11		17	3	2		5						
Scapula			2	2	1		1	2						
Humerus	3		1	4	1		1	2	1		1	1		2
Radius	2		1	3	7			7						1
Ulna			1	1	1			1						2
Pelvis			1	1										2
Femur	3		1	4	2			2						2
Tibia	2			2	3			3	1		1	2	1	1
Fibula														1
Astragalus	1		1	2										
Metacarpal			2	2	1		1	2						
Metatarsal	1		3	4	4			4						2
Metapodial	2			2										
1st phalanx	1		1	2										
Thoracic vert.							1	1						
Lumbar vert.									1			1		2
Axis													1	
Total	**29**	**11**	**20**	**60**	**28**	**2**	**4**	**34**	**3**	**1**	**1**	**5**	**3**	**15**

Table 11: Elements of identified species represented at Bedford Academy

Butchery marks were observed on three cattle bones. A mandible from G26 bears five fine incisions on the lateral aspect of the caudal part of the ramus, which were made during the separation of the mandible from the skull. Such marks are common in Iron Age and some Romano-British rural assemblages (Maltby 2010). A femur from quarry pit G38 has two small incisions on the lateral aspect of the shaft close to where the bone had been broken; these may be filleting marks, but are more likely to have been made to expose the bone, thereby making it easier to break open for marrow or pot-boiling.

A cattle humerus from the same context bears heavy blade marks along part of the posterior aspect, which would have removed the meat along with slivers of bone. This method of filleting is characteristic of Romano-British butchery but is generally found

only on nucleated settlements (Maltby 2007; 2010), usually indicating the presence of specialist butchers. Although this is a fairly crude example, it may signify that such a specialist operated at this settlement, further suggesting that this is a Roman rather than an Iron Age deposit. It may also indicate that the site was part of a larger settlement complex in which some of the butchery was carried out by specialists, or at least by someone who was familiar with their methods. Similar butchery has been observed at Kempston Church End, but it has not been encountered in other Romano-British assemblages around Bedford (Maltby 2011a; 2011b; forthcoming).

An astragalus with a lateral length of 62.9mm and a distal breadth of 40.9mm was the only cattle bone measured. These measurements fall within the range encountered on contemporary sites in the region.

Twenty-eight sheep/goat fragments were recorded. Five of these were identified as sheep, but no positive identifications of goat were made. The assemblage is biased towards the larger and more robust elements (Tables 10–11), and includes a large sheep humerus, radius and femur found within pit cluster G43. Only the humerus was measurable, possessing a distal trochlea breadth (von den Driesch 1976) of 32.8mm. This specimen is larger than all but one of over eighty specimens of Roman and Saxon date measured by the author on sites in the Bedford region. In addition, the distal epiphysis of this specimen has only just fused, leaving the possibility that potential post-fusion growth would have increased the size of this specimen slightly further. Additionally, both the humerus and femur have been sawn through their shafts. Such butchery is usually encountered only on post-medieval or modern sites, and it is therefore a distinct possibility that these bones are intrusive.

Four sheep/goat mandibles and one maxilla provided tooth ageing data. Two belonged to mature adults, one to a sub-adult or young adult, one to a sub-adult, and one to a lamb under a year old. The sample is too small to draw any conclusions about mortality patterns.

Only three bones of pig were identified. Pigs tend to be quite poorly represented on Iron Age and Romano-British sites in the region (Maltby forthcoming). A lumbar vertebra from quarry pit G38 bears a heavy blade mark across its ventral surface, made during segmentation of the spine.

Three equid bones were identified. Two are from animals typical of the size of horses found on contemporary sites in the region, one of which is a very fragmented mandible from a mature animal. The third bone, consisting of the distal part of a tibia from enclosure ditch G33, is much more unusual. It is very small, with an estimated distal breadth of 44.6mm — substantially smaller than equivalent measurements taken on equid bones by the author from other Iron Age and Roman sites in Bedfordshire. In a sample of fourteen bones from six other sites, the next smallest specimen (58.5mm) was recovered from the Roman settlement at Newnham, Bedford (Maltby 2011b). The average size of these fourteen specimens was 67.1mm (Table 12), indicating that the Bedford Academy example belonged to a very small equid. It compares closely in size with a modern Shetland pony; alternatively, it could have belonged to a donkey. Donkeys have been identified on several late prehistoric and Roman sites, and they may have been introduced to Britain in small numbers during those periods (Johnstone

2010). Unfortunately, it is not possible to identify this slightly eroded bone to species with certainty using standard morphological comparisons.

Fifteen bones of an adult cat were recovered from G20. Although domestic cats have been found more commonly in Romano-British contexts — small numbers at the Roman settlement at Newnham, Bedford, for example — they have also been found on a few Iron Age sites (Kitchener and O'Connor 2010). They were not, however, found in late prehistoric contexts from any of the sites investigated in the Biddenham Loop, Land west of Bedford and Marsh Leys projects.

Site	Period	Tibia distal breadth (mm)	Archive source
Bedford Academy	Late Iron Age–early Romano-British	44.6	
Biddenham Loop	Early–middle Iron Age	62.1, 64.7, 65.9	Maltby 2009
Clapham	Early–middle Iron Age	65.1	Maltby 2004
Marsh Leys Farm	Romano-British	67.5, 67.9, 78.2	Maltby 2011a
Marsh Leys Farm	Later Romano-British	68.7, 72.3	Maltby 2011a
Newnham	Middle Romano-British	58.5, 73.6	Maltby 2011b
Newnham	Later Romano-British	63.4	Maltby 2011b
Kempston Church End	Later Romano-British	70.8	Maltby 2011c
West Bedford Site SL53	Romano-British	62.0	Maltby 2011c

Table 12: Equid measurements from Iron Age and Romano-British sites in and around Bedford

7.2.3 Phase 2.1: Early Roman

Only twenty-eight fragments were recovered, from seventeen contexts. Preservation was poor in nine contexts and quite poor in the others. This poor preservation is evident in the identified elements, which consist almost entirely of loose teeth (Table 11), eleven from cattle (many of them fragmented) and two from sheep/goat. Pig is represented by a weathered fragment of a humerus shaft.

7.2.4 Phase 3: Early Saxon

Although the assemblage derives from three early Saxon SFBs, the presence of large amounts of Romano-British pottery raises the possibility that some of the bones may also be residual. Seven contexts produced a total of seventy-seven animal bone fragments, with most of the assemblages quite poorly preserved. Most (forty-two) of the bones came from G46; G45 produced twenty-nine fragments, and G44 only six. Fifty-two of the seventy-seven fragments could not be identified; cattle (twenty) dominate the identified material, with sheep/goat (four) and pig (one) also present (Table 10).

Most parts of the cattle skeleton are represented, with mandibles the most commonly identified (Table 11). Two of these belonged to mature adults, and a maxilla also belonged to an adult, while immature cattle are represented by an unfused distal metacarpal and metatarsal. A radius bears knife cuts on the medial aspect of the proximal end made during disarticulation from the humerus, while a scapula bears quite a deep filleting mark running longitudinally along the medial aspect, made with the point of a blade.

A sheep scapula and humerus from G44 belonged to quite large animals. The humerus shaft was sawn through, and it is again probable that these are post-medieval intrusions.

The Phase 3 assemblage is too small and insufficiently secure in its dating to provide reliable information about the meat diet and animal exploitation of the Saxon inhabitants of the site.

8. CHARRED PLANT REMAINS

8.1 Introduction

Thirty-six environmental bulk soil samples were collected during the excavations at Bedford Academy for the potential recovery of charred plant remains and information on the agrarian economy of the site, particularly during the late Iron Age and the early Roman period.

8.2 Methods

Following assessment of twenty-seven samples from Bedford Academy (Albion Archaeology 2012), all twenty-seven were subjected to further analysis (Tables 1–2): one from a late Neolithic/early Bronze Age pit (Phase 1); fourteen from late Iron Age/early Roman ditches, pits and a possible hearth (Phase 2); eight from early Roman ditches (Phase 2.1); and three from post-holes associated with Saxon SFBs (Phase 3).

All quantifiable charred botanical remains were sorted from the flots and identified using a binocular microscope (with a magnification of up to x40) together with modern and charred reference material and reference manuals (Cappers *et al.* 2006; Jacomet 2006). A particularly rich charred plant assemblage from one of the Phase 2 pits in G6 was sub-sampled, 25% being sorted and quantified and the remaining fraction scanned. Approximate estimates were made of the remains in the scanned fraction of this sample as well as for unsorted indeterminate cereal grain fragments (smaller than 2mm), *Corylus avellana* (hazelnut) shell fragments, tuber fragments, charcoal and indeterminate items in all the flots.

8.3 Results

The charred botanical remains are shown by phase in Tables 13–14. Taxonomic order for the wild plants in the tables follows Stace (2005), also used for ecological data together with Brenchley (1911; 1913), Hanf (1983) and Wilson *et al.* (2003). Over 2,000 charred plant items were counted, with the bulk (over 70%) of the material consisting of cereal grains, followed by other seeds (mainly wild plants/weeds) and cereal chaff (the latter just 3% of the quantified remains). Preservation, however, was generally poor and much of the material could only be identified to genus or family.

Virtually all the quantified plant remains were recovered from the Phase 2 (63%) and Phase 2.1 (32%) samples, with relatively small amounts from Phases 1 (2%) and 3 (3% of the counted remains). Phases 2 and 2.1 also produced the four richest assemblages from the site, with particularly large quantities from a Phase 2 pit in G6 and Phase 2.1 ditch G58. The other samples contained only small or moderate charred plant assemblages, with a low item density of less than ten per litre of processed soil. Two samples produced no quantifiable remains.

There follows a discussion of the different categories of plant material and then a breakdown of the botanical remains by Phase and Group, to examine the nature and spatial distribution of any human activities across the settlement and possible changes between different phases of the site.

	Phase	1	2															
	Group	1	3		6		12	17	23	26	28		31	36	38	48	59	65
	sample number	35	40	38	39		42	36	28	20	19	15	12	10	11	41	23	17
	vol sample (l)	30	9	10	20		10	2	20	9	10	8	4	9	10	10	10	10
	%sorted/scanned				25%	75%												
Cereal grains																		
Triticum dicoccum Schubl.	emmer wheat					+									1			
T. spelta L.	spelt wheat					+												
T. dicoccum/spelta	emmer/spelt wheat			1	31	++++		1	2			1			4		1	2
T. cf. *dicoccum/spelta*	?emmer/spelt wheat				9		1							1	5	1		
T. aestivum type	free-threshing wheat				4	+++								1	1			
T. cf. *aestivum* type	?free-threshing wheat			1	7					1					3			
Triticum sp(p).	wheat	3	2	1	87	++++	2			3				3	8	2	5	2
cf. *Triticum* sp(p).	?wheat	6	1	1	63		8			2	2		1	1	9		6	2
Hordeum vulgare L.	barley, hulled twisted	1														1		1
H. vulgare L.	barley, hulled indet.		1			+								1				1
H. vulgare L.	barley, indet.						2										1	
cf. *H. vulgare*	?barley		1				2				1				1			
Avena sp.	oat					++			1						1			
cf. *Avena* sp(p).	?oat				2		2	1	1						3			1
Cerealia	indet. cereal (estimate)	16	15	6	458	+++++	52		10	18	1	2	12	8	66	5	15	28
Cerealia	indet cereal fragments <2mm	+++	+++	++	+++++		+++	+	++	++	+	+	+++	++	+++	++	++	+++
Cereal chaff																		
Triticum spelta L.	spelt glume bases		1		1	++			2	1				1	1			
T. spelta L.	spelt rachis fragments					+												
Triticum sp(p).	wheat glume bases	1				++		1	1	3				7	5		2	3
Triticum sp.	wheat spikelet forks/bases					+									1			1
Other plant/weed seeds																		
Urtica urens L.	small nettle						1									2		
Urtica sp.	nettle	1																
Atriplex/Chenopodium sp.	orache/goosefoots etc.																	1
Stellaria media (L.) Vill.	common chickweed					++												
Polygonum aviculare L.	knotgrass	1				+												
Fallopia convuluvulus (L.) A Love	black bindweed														1			
*Rumex acetosella*a agg.	sheep's sorrel					+						1		1				
Rumex sp(p).	dock	1				+				3			1	3	3			
Polygonaceae indet							1								1			

	Phase	**1**	**2**															
	Group	**1**	**3**		**6**		**12**	**17**	**23**	**26**	**28**		**31**	**36**	**38**	**48**	**59**	**65**
	sample number	35	40	38	39		42	36	28	20	19	15	12	10	11	41	23	17
	vol sample (l)	30	9	10	20		10	2	20	9	10	8	4	9	10	10	10	10
	%sorted/scanned				25%	75%												
Vicia/Lathyrus sp(p).	vetch/tare/vetchling (small)		1		5	+++				1					7	1	2	10
Vicia/Lathyrus/Pisum spp.	vetch/tare/vetchling/pea (small/rounded)					++					2							2
Medicago/Trifolium sp(p).	medicks/clovers (small seeds)		12			+++	9			2	1	1	1	1	1	1		2
Fabaceae indet.	pea family (small round cotyledons)	2	2	1	2	++++	1			8	4	1		1	14	1	2	27
Plantago lanceolata L.	ribwort plantain					+												
Sherardia arvensis L.	field madder				1	++												1
Galium sp.	bedstraws					+												
Carduus/Cirsium spp.	thistles					+									1			
Tripleurospermum inodorum (L.) Sch. Bip.	scentless mayweed					+											1	
Eleocharis palustris/uniglumis	spike-rush																	1
Carex sp.	sedge																	+
Cyperaceae indet.					3	+++	1		7					1	2			1
Arrhenatherum elatius (L.) P. Beauv. Ex J & C Presl	false oat-grass tuber fragments																	
Bromus sp(p).	brome		2	2	4		2		5	1			6	3	2	2		2
cf. *Bromus* sp(p).	?brome																	
Danthonia decumbens (L.) DC	heath grass	5	1	1		+	1				3			3		2	3	15
Poaceae indet.	grasses (large seeds)	3	2	1	10	++	4		1	5	1		3	6	3	1	1	
Poaceae indet.	grasses (small seeds)	4	10	1	1	++++	4	3	4	1	2	1	1	3	7	3		5
indeterminate	tuber fragments			+														++
indeterminate	wood charcoal	+++++	+++	+++	+++++		+	+++++	++++	+++	++++	++++	++	+++	+++++	++++	+++++	++++
indeterminate		+	+	+		+	+	+	+	+	+		+		+	+	+	
Total		**44**	**51**	**16**	**688**		**93**	**6**	**34**	**49**	**17**	**7**	**25**	**45**	**151**	**22**	**39**	**108**

key — item frequency: + = 1–5 items: ++ = 6–25 items; +++ = 26-100; ++++ = 101–300; ++++ = >300items

Table 13: Charred Plant Remains (Phases 1 and 2)

Phase	**2.1**	**3**

	Group	10		11				58		44	45	46
	sample number	29	37	14	18	22	31	33	34	27	16	32
	vol sample (l)	9	10	9	10	9	9	10	30	30	9	10
	%sorted/scanned											
Cereal grains												
Triticum dicoccum/spelta	emmer/spelt wheat							11				1
T. cf. *dicoccum/spelta*	?emmer/spelt wheat	1	1	1		1		21				
T. spelta/aestivum type	spelt/free-threshing wheat							1				
T. aestivum type	free-threshing wheat							2				
T. cf. *aestivum* type	?free-threshing wheat							7		3		
Triticum spp.	wheat			4		3		13		2		2
cf. *Triticum* sp(p).	?wheat	1	2	1		4	1	47				2
cf. *Secale cereale*	?rye										1	
Hordeum vulgare L.	barley, hulled twisted										1	
H. vulgare L.	barley, hulled indet.											1
cf. *Avena* spp.	?oat											4
Cerealia	indet. cereal (estimate)	6	10	6		18	2	267		9	1	10
Cerealia	indet cereal fragments <2mm	++	++	++	+	++	+	++++	+	++		++
Cereal chaff												
Triticum spelta L.	spelt glume bases	1				2	1	3				
T. spelta L.	spelt spikelet forks/bases							1				
Triticum sp(p).	wheat glume bases	1				2	1	10				2
Triticum sp(p).	wheat spikelet forks/bases	1				1		3				
Triticum sp.	wheat rachis							1				
Other plant/weed seeds												
Urtica urens L.	small nettle									3		
Corylus avellana L.	hazelnut shell frags										+	
Polygonum aviculare L.	knotgrass		1					6				
Rumex sp(p).	dock	1		1				5		1		
Polygonaceae indet		1		1				6			1	2
Vicia/Lathyrus sp(p).	vetch/tare/vetchling (small)	1				1		3		2		
Vicia/Lathyrus/Pisum sp.	vetch/tare/vetchling/pea (small/rounded)						1				1	
Medicago/Trifolium spp.	medicks/clovers (small seeds)	4						4				
Fabaceae indet.	pea family (small round cotyledons)	1	2			1		15		1		2
Plantago lanceolata L.	ribwort plantain							1				
Valerianella dentata (L.) Pollich	narrow-fruited cornsalad							1				
Tripleurospermum inodorum (L.) Sch. Bip.	scentless mayweed			1								

	Phase	2.1								3		
	Group	10		11				58		44	45	46
	sample number	29	37	14	18	22	31	33	34	27	16	32
	vol sample (l)	9	10	9	10	9	9	10	30	30	9	10
	%sorted/scanned											
Asteraceae indet			1					1				
Eleocharis palustris/uniglumis	spike-rush							1				2
Cyperaceae indet.				1								
Bromus sp(p).	brome						1	4				
cf. *Bromus* sp(p).	?brome	1	2	1		3		9				
Danthonia decumbens (L.) DC	heath grass	10	9	1				68				
Poaceae indet.	grasses (large seeds)			1		3	1	15		1		2
Poaceae indet.	grasses (small seeds)	4	2	3		1		14				7
indeterminate	tuber fragments	+		+								
indeterminate	wood charcoal	++++	++++	+++	++++	+++	+++++	+++	+	+++	+++++	+++++
indeterminate		+	+	+		+		+	+	+		+
Total		**34**	**30**	**22**		**40**	**8**	**540**		**22**	**5**	**37**

key — item frequency: + = 1–5 items: ++ = 6–25 items; +++ = 26–100; ++++ = 101–300; +++++ = >300items

Table 14: Charred Plant Remains (Phases 2.1 and 3)

8.3.1 Cereals

Cereal grains were present in all the samples and, as noted above, made up just over 70% of the counted material; this figure would have been even greater had it been possible to quantify the variable (but occasionally large) amounts of small cereal fragments in virtually all the samples. Generally, however, the grains were poorly preserved and almost 70% could not be identified. The best represented cereal was *Triticum* (wheat), identified in twenty-four of the twenty-seven samples. Hulled wheat, *Triticum dicoccum/ spelta* (emmer/spelt) was the best represented species and was present in seventeen samples, with a few grains definitely identified as spelt and emmer. The small amounts of cereal chaff in fifteen samples, all of which belonged to hulled wheat, included spelt glume bases, spikelet forks and rachis fragments but no definite emmer chaff, suggesting that spelt was the main hulled grain at the site. A smaller number of *Triticum aestivum* type (free-threshing wheat) grains were recovered from seven samples. There were significantly smaller amounts of other cereals, with just sixteen *Hordeum vulgare* (barley) grains in twelve samples, the well-preserved grains showing the presence of six-row hulled barley, and a similar low number of *Avena* sp. (oat) grains in seven samples. One grain was tentatively identified as *Secale cereale* (rye) from one of the Saxon SFBs.

The range of cereals during the main phase of activity (Phase 2) shows the presence of mainly hulled (probably spelt) wheat, with smaller amounts of free-threshing wheat, (six-row hulled) barley and oats (the last two cereals completely absent in the Phase 2.1 samples). It was not possible to establish if the oats were from wild and/or cultivated species, although wild oats were more common in prehistoric and Roman Britain (Robinson 2009, 308). This range of cereals is typical for the late Iron Age and Roman periods in southern Britain, with present evidence suggesting that spelt was the main hulled wheat grain during this period together with hulled barley, and less evidence for emmer and free-threshing wheat (Greig 1991, 309). This is also reflected in results from numerous sites in Bedfordshire, where spelt has consistently been found to be the best represented cereal, with smaller amounts of emmer, free-threshing wheat and hulled barley: for example, nearby sites within the Biddenham Loop and around Kempston (Giorgi 2011, Pelling 2008, 240, 285, Scaife 2004a, 271–2) and from further afield, at Stagsden (Scaife 2000, 107 and 109) and the Great Barford bypass (Druce 2007, 367 and 369–70).

It is difficult to make any significant comments on the range of cereals from the other two sampled phases of the site because of the small amounts of the charred plant remains. The late Neolithic/early Bronze Age pit G1 contained traces of grain and chaff from hulled wheat and hulled barley, both of which have been found in early prehistoric sites in southern Britain (Greig 1991, 300 and 302) and at sites close-by in Bedfordshire. Traces of hulled wheat chaff have been found in late Neolithic deposits within the Biddenham Loop (Giorgi 2011) and hulled (emmer) wheat grain in Neolithic contexts from the Bunyan Centre, Bedford (Scaife 1999). Early Bronze Age deposits within the Biddenham Loop also produced evidence for both hulled wheat and hulled barley (Giorgi 2011).

The three Saxon (Phase 3) samples also only yielded small amounts of charred cereal grain, including a few of hulled barley and tentative identifications of free-threshing

wheat, rye and oat, all four cereals being typical for this period in southern Britain (Greig 1991, 315); for example, free-threshing wheat, hulled barley and oats were found in early to mid-Saxon samples from the Biddenham Loop (Giorgi 2011). There was also an emmer/spelt wheat grain and a few hulled wheat glume bases from SFB G46. Evidence for hulled wheat in the Saxon period is unusual, and it is possible that these remains are residual, given that G46 was dug through an infilled Roman ditch.

The cereals in the samples may have been used for bread, made into porridge and gruel, or added to stews or soups (Renfrew 1985a, 15; 1985b, 22), with spelt and free-threshing wheat having excellent baking and milling properties (Jones 1981, 107; Cool 2006, 70). In the Roman period, spelt wheat and barley were used for a very common gruel known as *puls* or *pulmentus*, not unlike modern Italian *polenta* (Renfrew 1985b, 22). Spelt and sometimes barley were used for brewing, although there were no sprouted grains to suggest such a use at this site. Barley was also used as horse feed.

8.3.2 Wild plants/weed seeds

Wild plant/weed seeds made up almost 27% of the quantified remains and were present in virtually all the samples. Individual assemblages, however, were generally small and the majority of seeds not identifiable to species, which limits ecological interpretation.

Grasses (Poaceae) were particularly well represented, making up almost 60% of the wild plant/weed seeds in a samples and including both large-seeded and small-seeded grasses, for example *Bromus* (brome) and *Danthonia decumbens* (heath-grass) respectively, both potential arable weeds. *Danthonia decumbens* today is a plant of sandy, peaty, often damp soil mostly on heaths, moors and mountains, but appears to have been an arable weed in the past until the replacement of the ard by mould-board ploughing (Hillman 1981, 146). However, as well as being potential arable weeds, the large number of grass seeds may represent the accidentally burnt residues of hay, collected from meadows and pastures, possibly from along the banks and floodplain of the Elstow Brook. Other potential grassland plants included occasional records of *Plantago lanceolata* (ribwort plantain).

23% of the wild plant/weed seeds were from small-seeded and mainly unidentifiable legumes in twenty-three samples, but include *Vicia/Lathyrus* (vetch/tare/vetchling), *Vicia/Lathyrus/Pisum* (vetch/tare/vetchling/pea) and *Medicago/Trifolium* (medick/trefoil) seeds. Again, these may simply represent cereal weeds but could also be the accidentally burnt residues of fodder or food crops. These plants thrive in soils with low nitrogen levels and may indicate low or decreasing soil fertility from over-cropping, and could suggest rotation as a means of restoring nitrogen to the soil. A similar conclusion was drawn on the basis of increased numbers of leguminous seeds in Romano-British samples from excavations around the Biddenham Loop and Land West of Bedford (Giorgi 2011)

Other more typical arable weeds were represented by only occasional or small numbers of seeds in just one or several samples, although these may provide an indication of the range of potential soils being used for cultivation during the late Iron Age and the early Roman period. Most of the weeds identified to species, including *Stellaria media* (common chickweed), *Polygonum aviculare* (knotgrass), *Fallopia convolvulus* (black

bindweed), *Rumex acetosella* (sheep's sorrel), and *Tripleurospermum inodorum* (scentless mayweed), suggest the use of light (sandy) loams and sandy soils for growing crops; this corresponds fairly well with the superficial geological deposits around the site which consist of river-terrace deposits of sand and gravel. Spelt may grow in drier and lighter soils as well as damp and heavy soils (Jones 1981, 106). A few seed records for *Carex* (sedge) and *Eleocharis* (spike-rush) could point to the cultivation of damper areas of ground, possibly closer to the Elstow Brook, although equally these plants may have formed part of the grassland vegetation discussed above.

The presence of *Stellaria media* and *Fallopia convolvulus* may suggest that at least some of the crops were spring-sown, although this does not mean that winter-sowing of crops was not taking place. There is insufficient data to establish whether any one particular method of harvesting was being carried out, with tentative evidence for harvesting both by reaping low on the straw — from the presence of low growing weeds, for instance, *Sherardia arvensis* (field madder), *Medicago/ Trifolium*, and high growing weeds, for example *Bromus, Rumex* (docks) — and also harvesting by uprooting, from the presence of twining weeds, for instance *Fallopia convolvulus*, and a few tuber fragments including *Arrhenatherum elatius* (onion couch). As well as a weed, however, *Arrhenatherum elatius* may also indicate the presence of relatively un-grazed grasslands (Robinson 1988).

There follows an examination of the composition of the charred botanical assemblages by Phase, to establish the possible nature of activities producing the remains and any changes between Phases.

8.4 Phase Discussion

8.4.1 Phase 1 (Prehistoric)

The fill of a late Neolithic / early Bronze Age pit in the north-eastern corner of the site produced a fairly small charred plant assemblage, consisting of poorly preserved charred cereal grains including wheat, a glume base showing the presence of a hulled species, and one six-row hulled barley grain. A small collection of weed seeds were mainly from grasses, including *Danthonia decumbens* and a single record for *Polygonum aviculare*, a plant that grows in loams and sandy soils. The cereal grains may have been accidentally burnt during the advanced stages of crop cleaning and food preparation, while the few weed seeds may have been removed by sieving, or by hand-sorting in the case of weed seeds of a similar size to the grain.

8.4.2 Phase 2 (late Iron Age / early Roman)

Enclosure ditches

Charred plant remains were recovered from nine samples taken from enclosure ditches: G3 and G48 in the east; G26, G28, G36 and G59 in the west; and G65 in the centre. The samples produced small to moderate charred plant assemblages, with generally low item densities (fewer than six per litre of processed soil), although the sample from G65 produced slightly more material with a higher item density.

There was no significant difference in the composition of the individual assemblages, with a mix of cereal grains (mainly indeterminate) and weed seeds, particularly from

small-seeded legumes (especially in G65) and large- and small-seeded grasses such as *Danthonia decumbens* and *Bromus* sp. There were also traces of hulled wheat chaff in five samples. These remains largely represent the debris from the final stages of crop cleaning and food preparation, with only a little evidence for the de-husking of hulled wheat. As noted above, large weed seeds such as *Bromus* that are similar in size to the grain would have been hand-sorted during the latter stages of crop cleaning, while most of the weed seeds smaller than the grains would have been separated at an earlier stage using the 'wheat' sieve (Hillman 1981, 5–6). The weeds and chaff may have been burnt as fuel and/or for waste disposal. It is possible, however, that the legumes and grasses represent the accidentally burnt remains of fodder crops. The low densities of material suggest that these activities may have occurred at some distance from the sampled ditch fills.

Discrete features

A sample from one of the pits in G6 in the north-east corner of the site produced a very rich charred plant assemblage, which was sub-sampled, part quantified and part scanned, and had a projected item density of 138 per litre of processed soil. The 25% quantified fraction consisted almost entirely of poorly preserved grains (96%) of mainly hulled wheat and some free-threshing wheat grains, with only traces of hulled wheat chaff and a small amount (4%) of wild plant/weed seeds, almost completely from grasses and legumes. The scanned fraction showed a similar pattern, with proportional increases in the different categories of material, spelt wheat probably being the main grain on the basis of the increased but still limited amount of chaff fragments. As well as large numbers of small-seeded legumes (*Vicia/Lathyrus/Pisum* species) and grasses, a number of other arable weed seeds were recorded in the scanned fraction.

The predominance of virtually cleaned grain in this sample suggests that the bulk of the material derives from the almost fully processed crop, mainly spelt wheat, which was perhaps accidentally burnt while being dried before milling and/or as a result of cooking accidents or a small conflagration. There is very little evidence for activities involving the de-husking of hulled wheat. The small legume seeds and small and large grass seeds may again simply represent cereal weeds and/or the accidentally burnt residues of fodder crops. There were relatively few other weed seeds in the sample, although *Bromus* was well represented in the scanned fraction, and is characteristic of the advanced stages of crop-processing. The few other small arable weed seeds in the samples may have been separated at earlier stages of crop-cleaning.

Samples were taken from five other discrete features: one from a possible hearth G23; one each from pits G12 and G17 in the eastern half of the site; and one each from pit G17 and quarry pit G38 in the western half of the site. The composition of these botanical assemblages is broadly similar and thus shall be discussed together.

G17, G23 and G31 produced only small charred plant assemblages (with low item densities of six or fewer) consisting of cereal grain and wild plant/weed seeds, nearly all from grasses. There was also a hulled wheat chaff fragment in from hearth G23. The grain in the hearth may have been accidentally burnt *in situ* during food preparation, while the remains in the pits may simply be background debris blowing around the site.

The samples from G12 and G38 contained larger amounts of charred remains and a greater item density of 9–15, with cereal grains (and a little chaff in G38) making up almost three-quarters of the quantified remains in both samples. The grains were perhaps accidentally burnt during food preparation and cooking. Other plant remains consisted almost entirely of grass seeds and small legume seeds, representing either arable weeds and/or the residues of accidentally burnt fodder crops. These larger assemblages may have been part of rubbish disposal into these two pits from nearby activities.

8.4.3 Phase 2.1 (early Roman)

All the charred botanical remains from Phase 2.1 were from eight samples associated with ditches G10, G11 and G58 in the eastern half of the site. Seven of the eight contained only traces or small assemblages of charred plant remains (with low item densities of five or fewer), consisting of cereal grains and fragments, occasional hulled wheat chaff fragments in three samples, and wild plant/weed seeds, particularly from large- and small-seeded grasses. This material represents background debris blowing around the site from activities mainly associated with the final stages of crop-cleaning, food processing and possibly from the residues of accidentally burnt hay.

The sample from G58 produced a larger assemblage, with a high item density of 54 per litre of processed soil. The material largely consisted of poorly preserved grain, which accounted for almost 70% of the quantified remains (not including a very large number of unquantified fragments), while chaff made up 3%. Wild plant/weed seeds accounted for the other 27% — almost three-quarters of which were from grasses, particularly *Danthonia decumbens* — while other remains included small leguminous seeds and several characteristic arable weed seeds. The bulk of this material comes from the final stages of crop cleaning and food preparation (grains, chaff, large weed seeds) with a little evidence (small weed seeds) from earlier sieving of the crops. It is also possible that the grass seeds represent the residues of accidentally burnt hay.

8.4.4 Phase 3 (early Saxon)

A sample was taken from each of the three Saxon SFBs G44, G45 and G46, producing only small amounts of charred plant remains, with very low item densities of four or fewer. These assemblages consisted of small numbers of grains, probably burnt accidentally during the final stages of crop cleaning and/or food preparation, and a few weed seeds from crop-processing activities that may have been taking place at some distance from the sampled features. There were also a few charred *Corylus avellana* (hazelnut) shell fragments from G45. One point of interest was the presence of a hulled wheat grain and a few hulled wheat chaff fragments from G46; hulled wheat is unusual in post-Roman contexts but, as noted above, may be the result of residual activity, with G46 cutting an earlier Roman ditch.

8.5 Summary

The charred plant remains from Bedford Academy suggest that hulled wheat, probably spelt, was the main cereal cultivated and used during the late Iron Age and early Roman period, while free-threshing wheat and hulled barley appear to have been only minor crops. The limited evidence from the other sampled phases of the site shows the

use of hulled wheat and hulled barley in the late Neolithic/early Bronze Age, and the presence of hulled barley and possibly free-threshing wheat, rye and oats in the early Saxon period. The weed seed evidence, albeit limited, suggests that the light, well-drained sandy soils of the river terraces may have been used for growing crops.

The dominance of cereal grains suggests that most of the activities represented in the samples were associated with the final cleaning of the grain and food preparation/cooking. The relative paucity of hulled wheat chaff in relation to the number of hulled wheat grains suggests that de-husking activities, which would have taken place immediately before the grain was used, were taking place elsewhere. The large weed seeds, notably *Bromus* and also probably the *Avena* seeds, were of a similar size to the grains and are also indicative of the final stages of crop-cleaning. The wild plant/weed seeds consisted largely of small leguminous seeds and both small- and large-seeded grasses, with a fairly limited range of other potential arable weeds represented by only occasional remains. The legume and grass seeds could simply be amongst the arable weeds separated by the 'wheat' sieve at an earlier stage of crop-processing and burnt as fuel and/or for waste disposal; on the other hand, they could represent the accidentally burnt remains of fodder crops, with grassland vegetation possibly along the banks and floodplain of the Elstow Brook.

The distribution of the charred plant remains in the late Iron Age/early Roman period (Phase 2), from which the majority of the remains were recovered, shows a fairly even but generally low density of charred plant material across the site, with the best assemblages (in terms of size and item density) being from features in the north-east (G6) and south-west (G38) corners of the excavation. This suggests more intense activities in these areas associated with the final stages of crop-cleaning (but not de-husking) and food preparation. There were also moderate assemblages (G12 and G65) nearer the centre of the excavated area. The smaller numbers of samples from the early Roman period (Phase 2.1) were limited to the eastern half of the site, with the concentration of material from enclosure ditch G58 possibly indicating another area of activity. No comment may be made on the basis of the small quantities of charred plant remains from either the late prehistoric sample or the few samples from the early Saxon phase.

9. CHARCOAL

Dana Challinor

9.1 Introduction

Soil samples were taken during the excavations from a range of pits and ditches dating mostly to the late Iron Age/early Roman period (Phase 2), with one Neolithic/early Bronze Age (Phase 1) and three early Saxon (Phase 3) samples. Charcoal was preserved in most of the 36 samples, but the quantities of identifiable fragments (>2mm) were low. Only four samples produced abundant assemblages, and a further ten were also scanned to provide a general picture of fuelwood utilisation.

9.2 Methodology

Charcoal >2mm in transverse section was considered for identification. All of the flots were scanned at low magnification (up to x45) and a randomly selected, representative number of fragments (20–50 depending upon the abundance and diversity of charcoal) were fractured and sorted into groups. Identifications were then confirmed at high magnification using a Meiji incident-light microscope at up to x400 magnification, and with reference to appropriate keys (Schweingruber 1990; Hather 2000) and modern reference material. Observations on maturity or condition were made as appropriate. Classification and nomenclature follow Stace (1997).

9.3 Results

A summary of the results is provided in Table 15, using a key based upon an estimate of fragment count for the whole sample. The condition of the charcoal was variable; it was generally clean, but the quantities were quite low and the size of fragments small. Most samples had between 20 and 40 identifiable fragments, enough to show that taxonomic diversity was relatively high.

	Phase	**1**	**2**								**2.1**			**3**	
	Group number	**1**	**3**	**6**	**12**	**17**	**28**	**38**	**59**	**65**	**10**	**11**	**58**	**45**	**46**
	Sample number	35	40	39	42	36	15	11	23	17	37	31	33	16	32
Clematis vitalba L.	traveler's joy												+r		
Fagus sylvatica L.	beech											+			
Quercus sp.	oak	+	++r	+	+r	+h	+++	+r	+	+	++	+++sr	++		+s
Corylus avellana L.	hazel							+						+r	+
Prunus spinosa L.	blackthorn	+						+				+	+++r	+r	+r
Prunus cf, *avium* L.	wild cherry													+r	
Prunus sp.	cherry type			+	+				+					+r	+
Maloideae	hawthorn group	+	+				+	+r	+	+	+			++r	++r
Cornus sanguinea L.	dogwood			+											
Acer campestre L.	field maple							+			+	+	+	+	+
Fraxinus excelsior L.	ash	+		+r	+r	+++r		+r	+rh		+	++r	+r	+r	+
cf. *Ligustrum vulgare* L.	wild privet							+r							
Indeterminate	diffuse porous									+					
Indeterminate	rootwood				+										

+=low; ++=moderate; +++=abundant; r=roundwood; h=heartwood; s=sapwood

Table 15: Charcoal taxa recovered from the samples

A wide range of eleven taxa were identified, all consistent with native species (Table 16). No complete stems were recorded, although many fragments exhibited moderate

to strong ring curvature (roundwood). Few fragments displayed tyloses, and broad observation on growth-ring sizes suggests relatively fast growth rates.

Family	Genus/species	Notes
Ranunculaceae	*Clematis vitalba* (traveller's joy)	Woody climber, sole native species
Fagaceae	*Fagus sylvatica* L. (beech)	Large tree, sole native species
	Quercus spp. (oak)	Large tree, two native species, not distinguishable anatomically
Betulaceae	*Corylus avellana* L. (hazel)	Shrub or small tree, sole native species
Rosaceae	Prunoideae: *P. spinosa* L. (blackthorn) *P. avium* L. (wild cherry) *P. padus* L. (bird cherry)	Trees or shrubs, native species, though *P. padus* has a restricted native distribution. *P. spinosa* was confidently ascribed on the basis of wide rays, and there was one sample with fragments of smaller rays consistent with *P. avium*. The identification was uncertain as there can be some variation within genera, and *P. spinosa* was also present.
	Maloideae: *Pyrus cordata* Desv. (Plymouth pear) *Malus sylvestris* Mill. (crab apple) *Sorbus* spp. (rowan, service, whitebeam) *Crataegus* spp. (hawthorn)	Subfamily of various shrubs/small trees rarely distinguishable by anatomical characteristics
Cornaceae	*Cornus sanguinea* L. (dogwood)	Shrub, sole native species
Aceraceae	*Acer campestre* L. (field maple)	Tree, sole native species
Oleaceae	*Fraxinus excelsior* L. (ash)	Tree, sole native species
	Ligustrum vulgare L. (wild privet)	Shrub, sole native species

Table 16: Notes on charcoal taxa

9.4 Discussion

9.4.1 Phase 1: Late Neolithic/early Bronze Age

Four taxa were recorded from the single sample (G1) dating to this phase: *Quercus* sp. (oak), *Prunus spinosa* (blackthorn), Maloideae (hawthorn group) and *Fraxinus excelsior* (ash). The association of burnt cereal grains (Section 8) suggests that the charcoal derived from fuel used for advanced crop-cleaning or food-preparation. Blackthorn is a light-demanding species, frequently found in woodland margins, scrub or hedgerows, along with the members of the hawthorn group. All four taxa were frequent in the larger datasets of the later periods.

9.4.2 Phase 2: Late Iron Age/early Romano-British

Eight samples from this phase were examined (Table 15). *Quercus* (oak) was the most frequent taxon, present in all samples, followed by *Fraxinus excelsior* (ash), Maloideae (hawthorn group) and *Prunus* sp. (blackthorn/cherry). Other, occasional taxa included *Corylus avellana* (hazel), *Cornus sanguinea* (dogwood), probable *Ligustrum vulgare* (privet) and *Acer campestre* (field maple). The charcoal assemblages were broadly similar, with some variations in dominance of oak (G28) or ash (G17), but the significance of this is difficult to gauge. It may be that these assemblages represent single-event dumps of spent fuelwood, whereas others may have contained more widespread and/or wind-blown material. There is also a discrepancy in the quantities of material from these assemblages which makes detailed

comparison difficult. The presence of many shrub/hedgerow type trees suggests a relatively open landscape. There was no evidence for the exploitation of wetland taxa such as alder or willow.

9.4.3 Phase 2.1: Early Romano-British

Three early Romano-British samples (G10, G11 and G58) produced similar assemblages to the earlier phase, with frequent *Quercus* (oak), *Fraxinus excelsior* (ash) and *Prunus spinosa* (blackthorn). *Clematis* (traveller's joy) is a woody climber, likely to have entered the assemblage attached to a larger tree, rather than deliberately gathered for fuel. The few fragments of *Fagus sylvatica* (beech) merit a brief note, as this taxon tends only to be recovered sporadically from charcoal assemblages of this date. Pollen records indicate that beech was present in the area at Ruxox in the Romano-British period, although it is also noted that substantial woodland removal had occurred by this time (Scaife 2004b, 281). Charcoal records generally suggest that beech was not widely used for firewood until the Saxon or early medieval periods.

9.4.4 Phase 3: Early Saxon

Samples from two sunken-featured buildings (G45 and G46) produced rich charcoal assemblages with seven taxa: *Quercus* (oak), *Corylus avellana* (hazel), *Prunus* spp, (blackthorn and possible wild cherry), Maloideae (hawthorn group), *Acer campestre* (field maple) and *Fraxinus excelsior* (ash). This relatively high taxonomic diversity indicates that the assemblages are unlikely to represent the burnt structural remains of the buildings, although it is plausible that they contain mixed debris from several sources. No single taxon dominated the samples although there was a fair quantity of hawthorn group. The presence of hazelnut shell fragments in G46 (Section 8) suggests a shared origin with the hazel wood. There is a notable paucity of oak in the assemblage, which, combined with the higher quantities of *Prunus* and Maloideae, might suggest a very open, agricultural landscape. However, the evidence is based upon only two samples and is not conclusive.

9.5 Summary

The charcoal evidence from Bedford Academy is chronologically intermittent, which makes interpretation difficult for the earliest and latest phases of activity at the site. However, there is a general picture for Phase 2 which shows quite high taxonomic diversity. This indicates that the collection of firewood for domestic food preparation and/or late-stage crop processing was fairly indiscriminate, with a range of available wood types being utilised. This is consistent with domestic fuel debris recovered from other late Iron Age and early Romano-British sites in Bedfordshire, such as Shillington Bury (Cartwright 2004) and Great Barford (Challinor 2007). The majority of the wood at Bedford Academy came from branchwood or coppice stems, rather than large, mature trunkwood, signifying that firewood was drawn from managed (composite) woodland and/or scrub/hedgerow-type habitats. Either way, the charcoal implies relatively open conditions, and although oak is frequent, it was not generally abundant within individual assemblages. The limited evidence from the early Saxon period suggests a similar landscape.

10. DISCUSSION

The excavations at Bedford Academy revealed evidence of human activity spanning a period of more than 4,000 years, but with a lack of chronological continuity. The only evidence of prolonged settlement comes from the late Iron Age /early Roman period, with even that lasting for little more than a century; short-lived, small-scale settlements existed before and after this, but the land is likely to have been used for no more than grazing or hunting during much of the intervening periods. Even the excavated late Iron Age and Roman remains attest primarily to agricultural activity, with little direct evidence for occupation within the excavated area.

The following discussion examines how the land at Bedford Academy was utilised and what its relationship was with the surrounding landscape, and considers in particular what the late Iron Age and early Roman remains represent.

10.1 Settlement morphology and chronology

Although the flint assemblage points to sporadic activity from the Mesolithic to the late Neolithic, a situation mirrored by excavations to the east of Bedford Academy (HER18235; Steadman 1999), the earliest evidence of settlement comes from the two Phase 1 pits that date to the late Neolithic / early Bronze Age. These probably represent no more than temporary camps, and there is little evidence of further settlement activity in the following two millennia: the few possible structural features identified amidst the Phase 1 field system are more likely to have been the remains of animal pens than an open settlement. No finds were recovered that were contemporary with these fields, suggesting that they were located at some distance from any domestic activity.

The main period of settlement at Bedford Academy was in the 1st century AD, although the nature and extent of this settlement is uncertain. More than 3,300 sherds of late Iron Age and/or Roman pottery were recovered, weighing 50kg, and the number of enclosure ditches that were dug point to intensive human activity — yet little of this activity appears to have been domestic in character. The recovery of just 225 animal bones from the late Iron Age / early Roman deposits stands out: preservation was poor but not exceptionally so, and substantially larger assemblages have been recovered from contemporary sites nearby with similar ground conditions, such as Marsh Leys (Maltby 2011a) or the numerous sites recently excavated to the west of Bedford (Maltby forthcoming). This implies that the quantity of bone recovered is a genuine reflection of how much was discarded, which in turn suggests that the excavated area did not include the domestic focus of the overall settlement. Its full extent may have been much larger; the presence of a bone in the Phase 2 faunal assemblage that carries the traits of the sort of butcher more usually associated with nucleated Roman settlement is perhaps an indicator that the overall Bedford Academy site was one of the larger settlements in the region, perhaps on a par with the nearby one at Eastcotts (Luke 2010).

Analysis of the pottery distribution appears to support a lack of domestic activity within the excavated area, although the evidence is not conclusive. The largest concentrations tended to be found in ditches such as G3, G28 and G37 (Table 2) that were located towards the north-east or south-west end of the site, although a fairly

large amount was also recovered from pits G43 in the centre. The charred plant remains show a similar pattern: the largest assemblages came from features at the north-east and south-west ends (pits G6 and G38 respectively), which suggests more intense activities in these areas associated with the final stages of crop cleaning and food preparation. Taken together with the lack of evidence for buildings (a few post-holes did survive, so truncation at least cannot be blamed entirely for this), it appears that the excavated area may have lain between two foci of human activity. Even these may not have been domestic in character, however: while the pottery appears to have derived primarily from sources either at or just beyond the north-east and south-west ends of the site, spreading towards the middle, this still does not account for the dearth of animal bone and general paucity of non-ceramic artefacts. The best evidence for domestic activity within the excavated area during the 1st century AD comes from the eastern enclosures in Phase 2.1: they produced substantially more pottery than the western ones; had a central entrance to the south-east, which would have been inconvenient for herding animals and is therefore more suggestive of human traffic; and were perhaps contemporary with G15, two features that may have been related to some sort of structure.

The morphology of the excavated remains strongly suggests that the Phase 2 enclosures were used primarily for the management and manoeuvring of livestock. Figure 6 suggests how the arrangement of races, crushes, and enclosures' corner-based entrances or exits may have been used to control the movement of livestock around the site. Further features may also have been present that did not survive in the archaeological record: the northern access to or from enclosure G13 is likely to have been controlled by drafting gates, while Pryor suggests that locations such as this may have held pens containing well fed decoy sheep, to encourage other sheep to move along the races (Pryor 2006, 105). The complexity of the arrangements and the overall articulation of the enclosures, in particular G13, G21 and G39, suggest that most of the Phase 2 remains relate to an extensive stock-control system that was designed solely for this purpose — the elaborate nature of enclosure G13's initial layout in particular suggests that its sole function was for handling livestock. G13's internal arrangements appear to be without parallel in their complexity in the Bedford region; the closest comparable example is the western enclosure at Hill Field, Wilstead (Ingham 2010, fig. 24), which was broadly contemporary.

Establishment of the settlement at Bedford Academy was a substantial undertaking, especially when one considers that probably less than half of the overall settlement was revealed. The excavated part of it, at least, appears to have been established in a single event: the articulation of the enclosures suggests that G13, G21 and G39 at least were set out simultaneously. Less clear, however, is precisely when this took place: was it before the Roman conquest or afterwards? Most of the pottery recovered is of a type that straddles the transition; the only finds that are conclusively earlier are three coins dating to the late 1st century BC, and these could easily have been in circulation for several decades by the time they were deposited. The change from Phase 2 to Phase 2.1 could have coincided with the transition from Iron Age to Roman, yet it is equally possible that the entire settlement was established post-AD 43. Indeed, evidence from the faunal assemblage suggests a Roman date for at least some of the Phase 2 features: one of the bones displayed filleting of a type that is characteristic of specialist Roman butchers, while cat burials are significantly more common from the Roman period than

the Iron Age. The layout of the Phase 2 enclosures was less rectilinear than is often the case on Roman sites, but this may have been necessitated by the requirements for stock control. A late 1st-century date for the creation of the Phase 2.1 enclosures would also have coincided with a broad change to larger, more rectilinear enclosures that has been observed at other sites across Bedfordshire and further afield (Luke and Preece 2011, 140–1).

The precise date at which the settlement went out of use is also unclear. Indeed, the small assemblage of pottery recovered from the western Phase 2.1 enclosures might indicate that the overall settlement was already shrinking by then, although this could alternatively be accounted for by a change of use in the part of the settlement that lay beyond the western end of the excavated area. Much of the diagnostically Roman pottery is of a type that was made locally and cannot be closely dated, being produced throughout the 2nd to 4th centuries. Late Roman finds, however, are restricted to a few items that may have been scavenged from elsewhere by the site's Saxon inhabitants, whereas the pottery assemblage does include diagnostically early Roman wares — the 2nd to 4th-century Roman wares are therefore more likely to be contemporary with the early Roman material. This suggests that the settlement went out of use in the 2nd century AD, probably in the first half, although it is possible that boundary G9 remained in use for longer. The reason why the settlement went out of use is unclear, but it may be significant that its demise broadly coincided with significant changes at Marsh Leys (Luke and Preece 2011, 139): the region south of Bedford perhaps underwent a degree of restructuring at this point.

Although there is no evidence that the settlement remained in use beyond the 2nd century, the location of the three Saxon sunken-featured buildings (SFBs) suggests that the enclosures were at least still extant as hedged boundaries, with two of them dug through the infilled enclosure ditches and the third adjacent. Evidence for the existence of hedgerows comes from the charcoal assemblage, which shows a continued pattern of hedgerow species within a very open landscape from the late Iron Age through to the early Saxon period. The precise date of the three SFBs is uncertain, but the forms of both the spindle whorl and the loom weights from SFB G45 support the early Saxon date suggested by the pottery. It was relatively common for early Saxon settlements to make use of relict Roman field systems, although examples of SFBs dug through the former enclosure ditches are rarer: only two of the thirty-one excavated to the west of Bedford (Luke forthcoming) were positioned thus, although most of the remainder were located within an area that had been partially defined by Roman ditches. A possible one was also identified at Hill Field, Wilstead (Ingham 2010, 197), although it may have been a non-structural pit. At Bedford Academy, however, there was a long gap between the demise of the Roman settlement and the creation of the early Saxon buildings, meaning that erosion of the earthworks may have been taking place for long enough that the existence of the former ditch no longer presented a significant problem. It may have been considered more important to take advantage of the shelter provided by hedges: if Roman enclosures G41 and G9/G11 had been surrounded by hedgerows lying outside their perimeter ditches, then the location of all three SFBs would have offered them protection from an easterly wind.

It is unclear how expansive the Saxon settlement was. Only three SFBs were identified, with no accompanying pits, although a watching brief within the area of the

allotments to the south-west of Bedford Academy uncovered further evidence for early to middle Saxon activity (BCAS 1996). Excavations in the Biddenham Loop to the west of Bedford recorded a group of six SFBS that were spaced at similar intervals to the Bedford Academy ones (Luke forthcoming), and it is perfectly plausible that further SFBS lie to the east and west of the excavated area. It is unknown whether the three SFBs were contemporary, but it at least seems that the Saxon settlement was relatively short-lived: the pottery assemblage gives no indication that it continued into the middle Saxon period. There are no signs of post-Saxon settlement prior to the 20th century, with the land used for ridge-and-furrow cultivation from the medieval period.

10.2 Economy and trade

The economic basis of the late Iron Age / early Roman settlement, or at least the part of it that was excavated, seems with little doubt to have been pastoralism. The small faunal assemblage offers few clues as to which animals were being kept, but the complexity of the Phase 2 enclosures, with their narrow entrances and races, suggests that sheep were the core species, perhaps shifting towards cattle when the larger Phase 2.1 enclosures were created. The recovery of immature and sub-adult cattle from the Phase 2 deposits, however, does suggest that cattle were being reared during the settlement's earlier phase, with the young age of the animals suggesting that meat production was a more important facet of cattle exploitation than dairy production. If this was the case, however, then it is clear from the small size of the faunal assemblage that the animals were mostly being butchered elsewhere.

Cereals were present, but the dominance of cereal grains suggests that most of the activities represented in the archaeobotanical assemblages were associated with final cleaning of the grain and food preparation or cooking. The early stages of crop processing seem to have taken place elsewhere; this may have been within another part of the settlement that was not excavated, or it might indicate that partially cleaned wheat (probably spelt) was being bought or bartered from an external source. There is no reason why the light, well-drained sandy soils of the river terraces could not have been used for growing crops — they may well have been grown in the prehistoric Phase 1 field system — yet the absence of evidence for the early stages of crop processing, combined with the complexity and extensiveness of the arrangements for livestock management, perhaps indicate that the community at Bedford Academy chose to specialise in pastoral rather than arable farming.

Aside from pastoralism, there is little evidence for any other economic activities that the settlement's inhabitants carried out. The small assemblage of 'other' artefacts indicates that weaving and possibly woodworking or bone-working took place in the late Iron Age / early Roman period, but only single instances were found of the evidence for each. As much evidence for such activities during the early Saxon period was recovered from SFB G45 alone, which contained a spindle whorl and loom weights; this is a further indication that there was very little domestic activity within the excavated part of the late Iron Age / early Roman settlement.

Trading links seem to have been largely restricted to the local area, with much of the pottery likely to have come from kilns elsewhere in Bedfordshire. It may have been made even more locally; kilns were found at the Mile Road allotments (Dring 1971; HER 979), which may account for the recovery of several kiln bar fragments from the

western end of the Bedford Academy excavation. A few regional imports are present amongst the pottery assemblage, but specialised Roman wares such as mortaria, amphorae and samian ware are absent — unusually, sherds from four 1st-century AD Gallo-Belgic vessels constitute the only evidence of continental links. Such vessels are not often found in the Bedford region, with locally produced copies being much more common. This general lack of imported pottery tends to suggest that the site at Bedford Academy was a relatively poor, low-status agricultural settlement, although it may equally be the case that more expensive or exotic portable goods were kept within domestic areas that have not been excavated, or that the inhabitants simply invested all their wealth in livestock.

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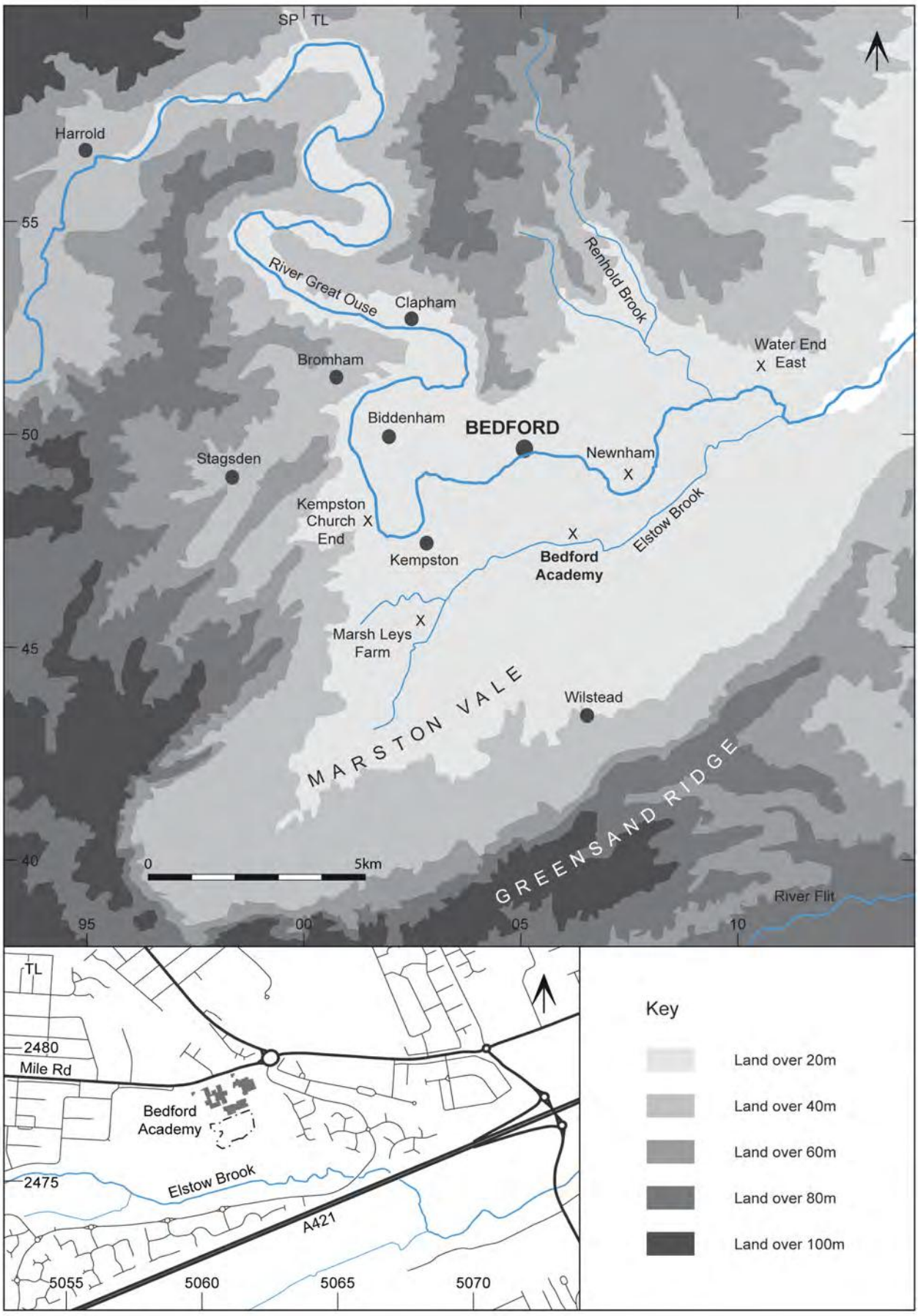


Figure 1: Site location plan

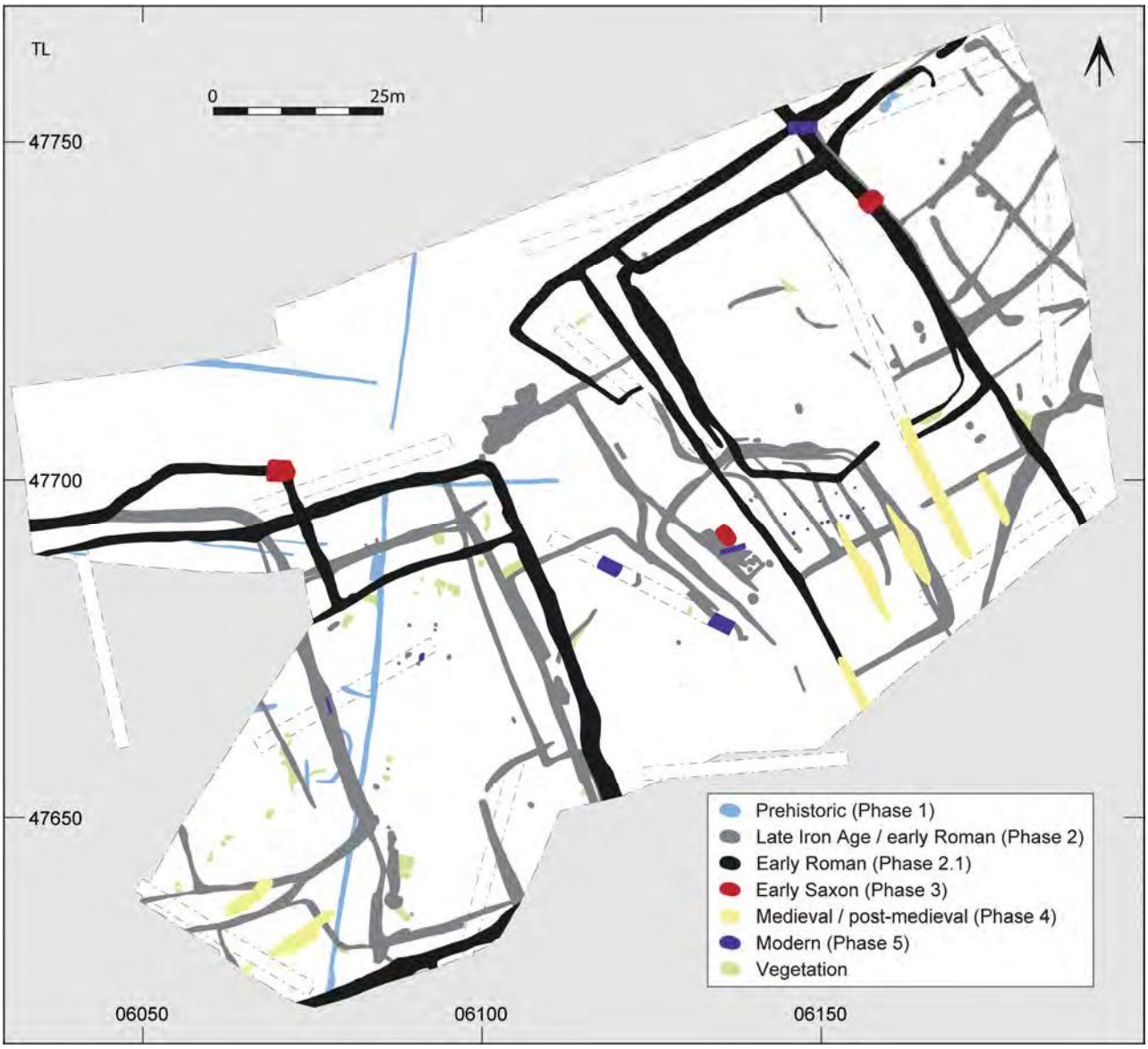


Figure 2: Phased all-features plan

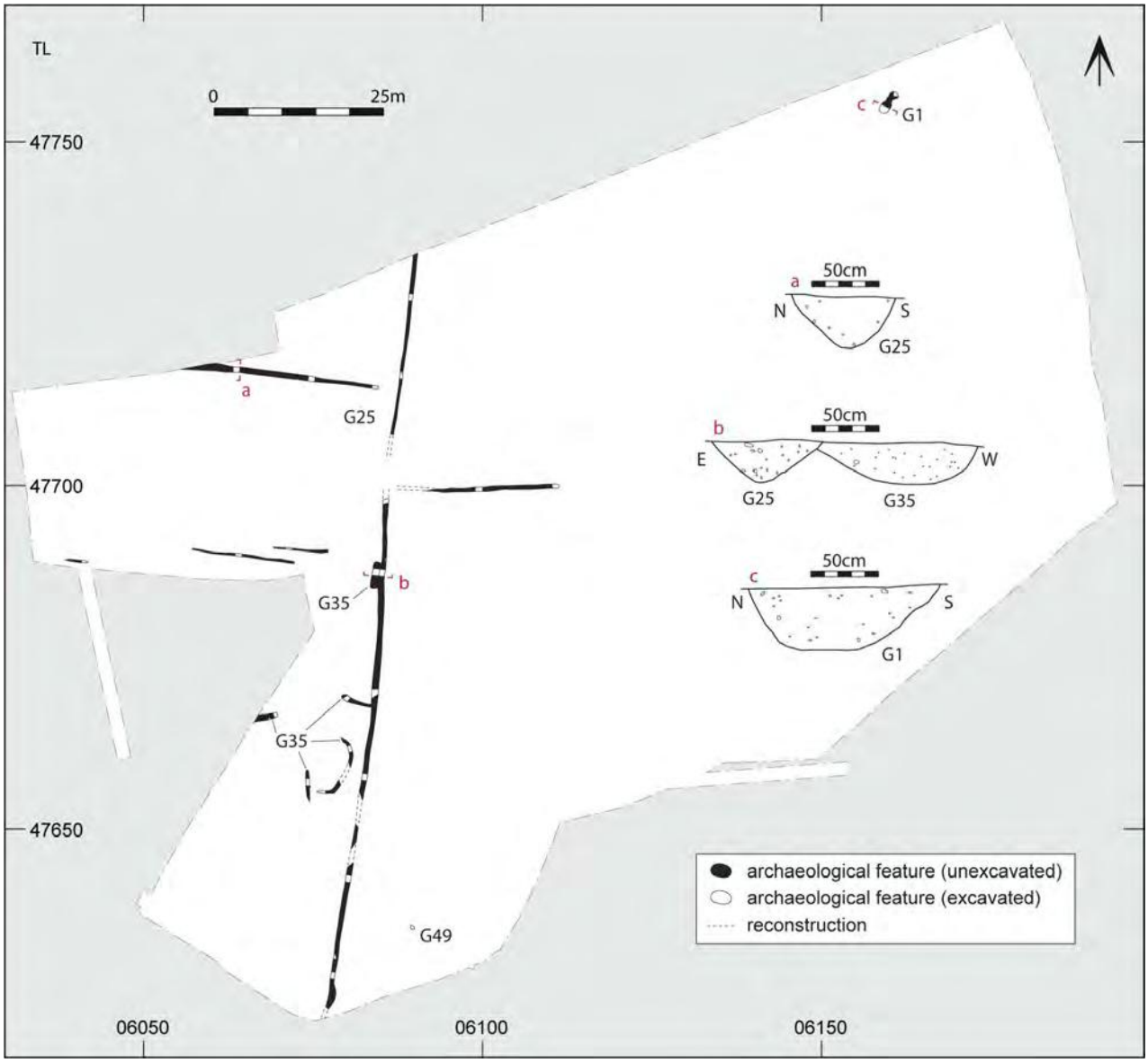


Figure 3: Phase 1 (prehistoric) — plan and selected sections

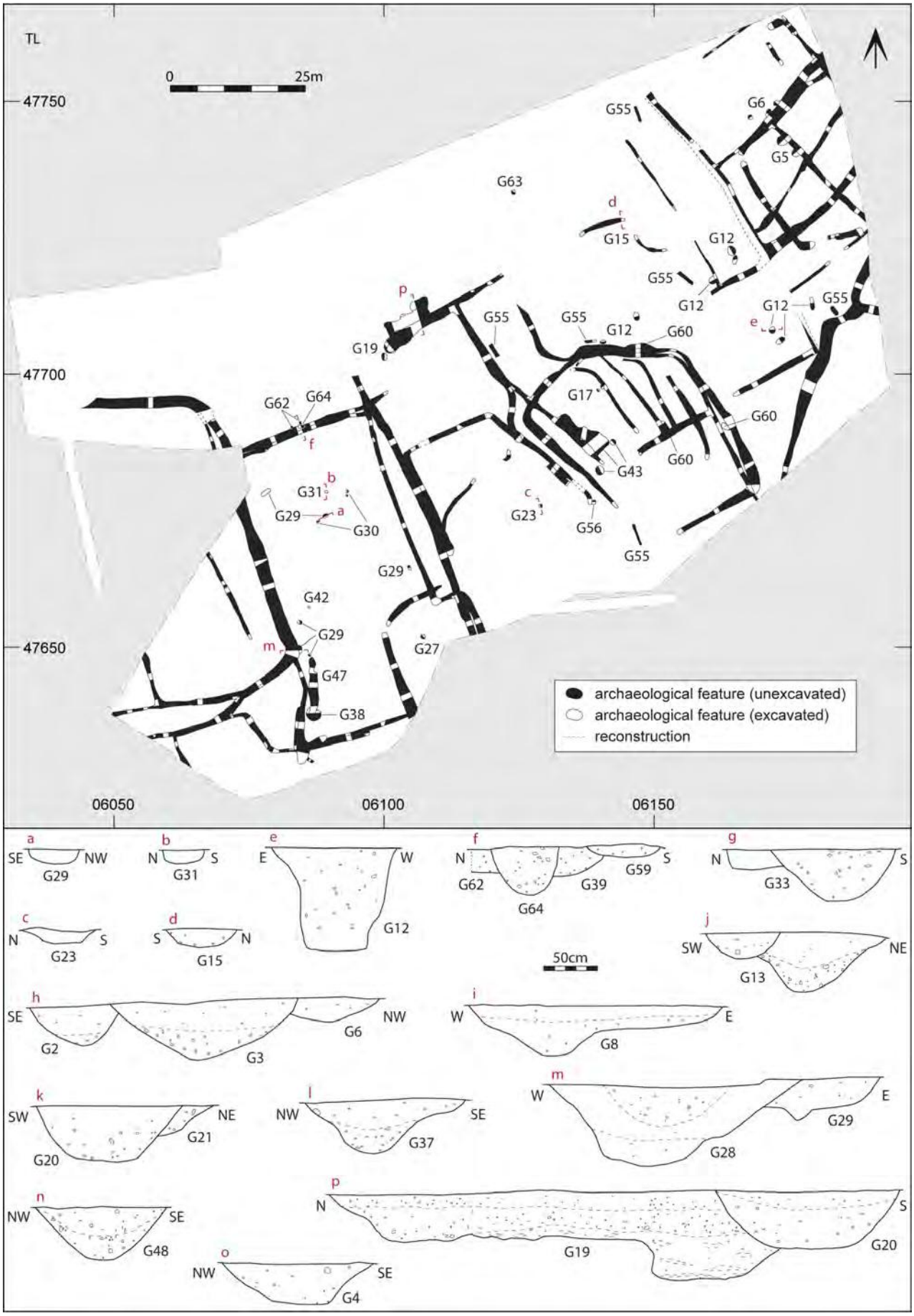


Figure 4: Phase 2 (late Iron Age / early Roman) — plan (with only discrete features labelled) and selected sections

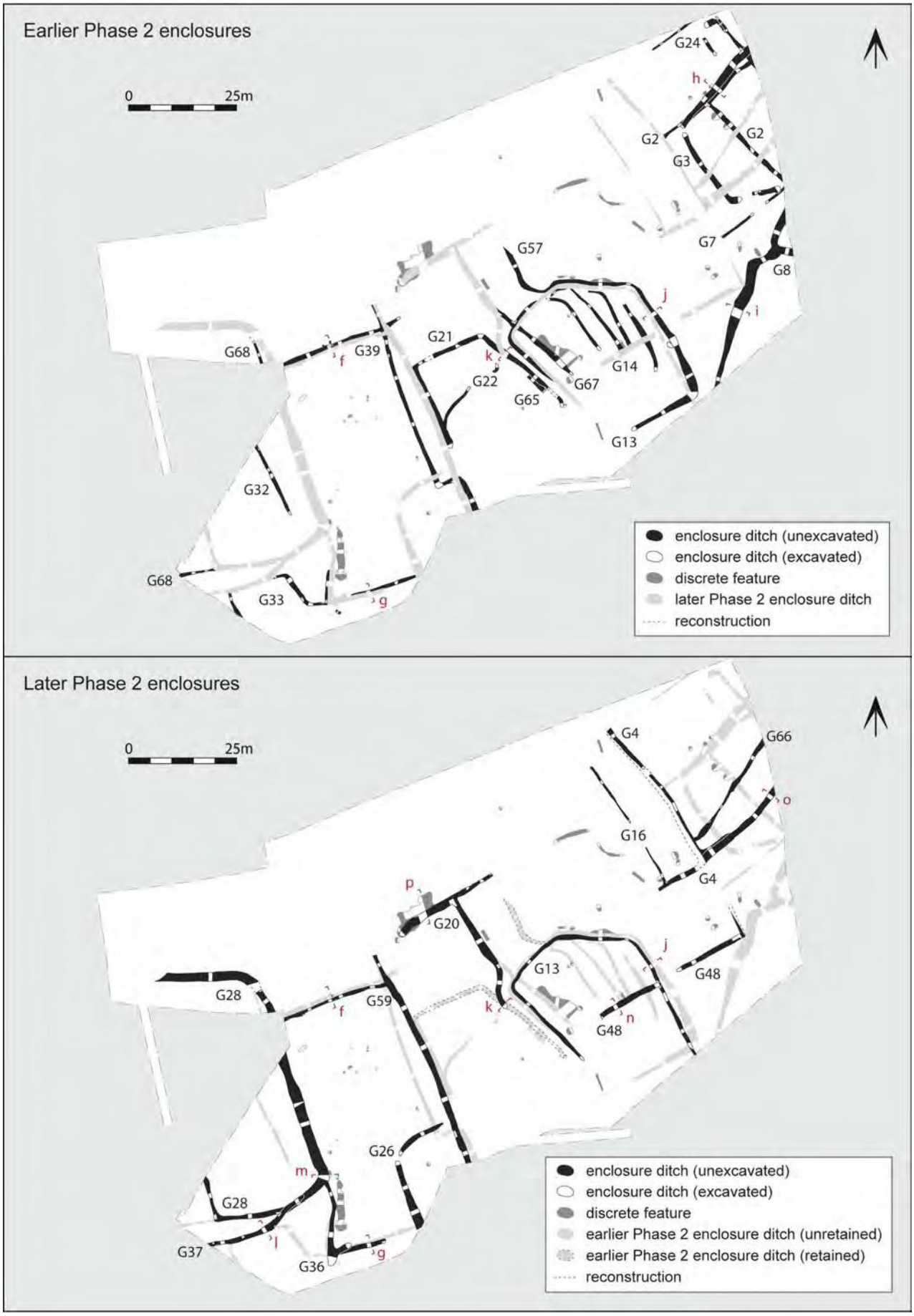


Figure 5: Development of the Phase 2 enclosure system

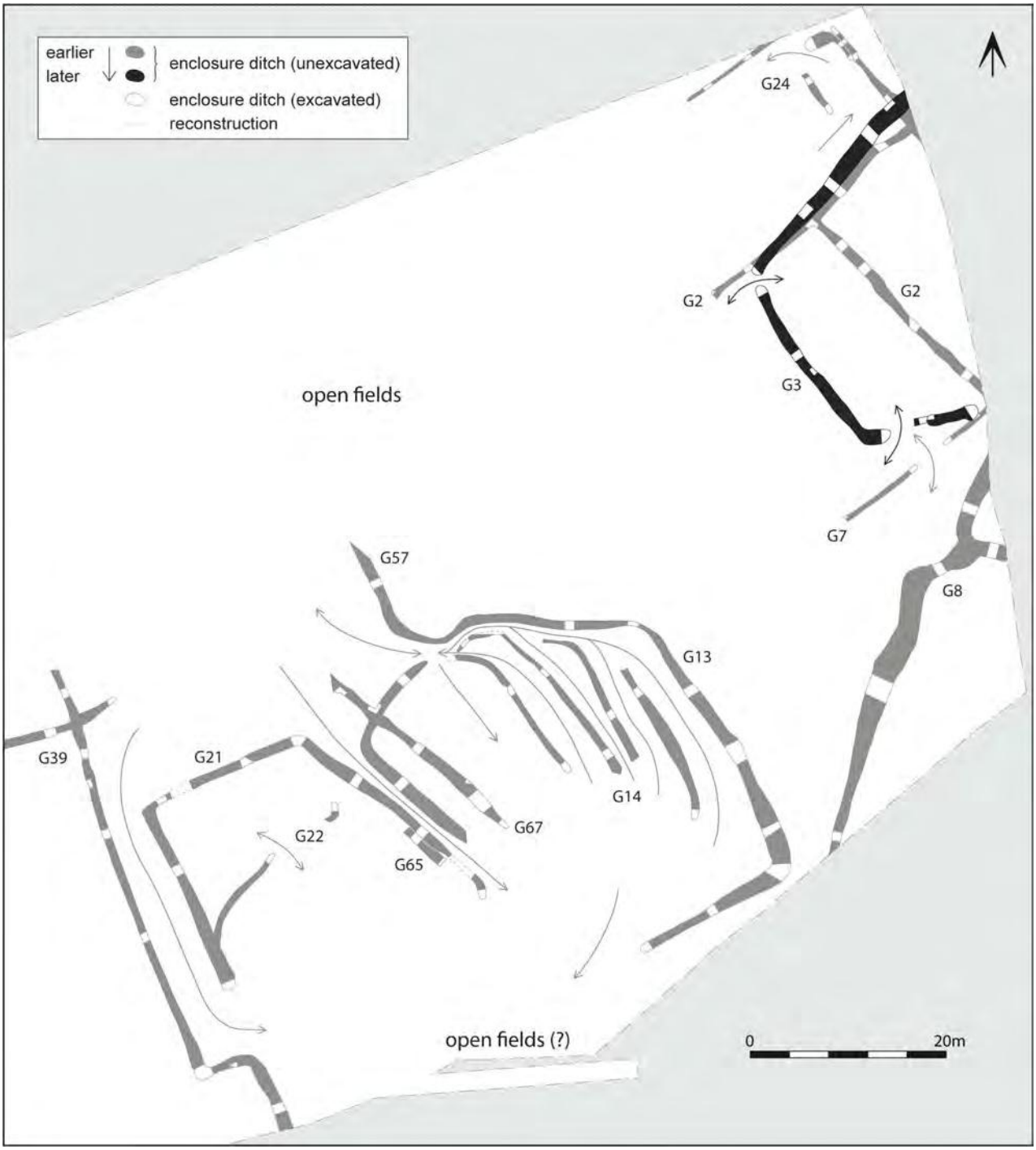


Figure 6: Hypothetical movements of stock around earlier Phase 2 enclosures

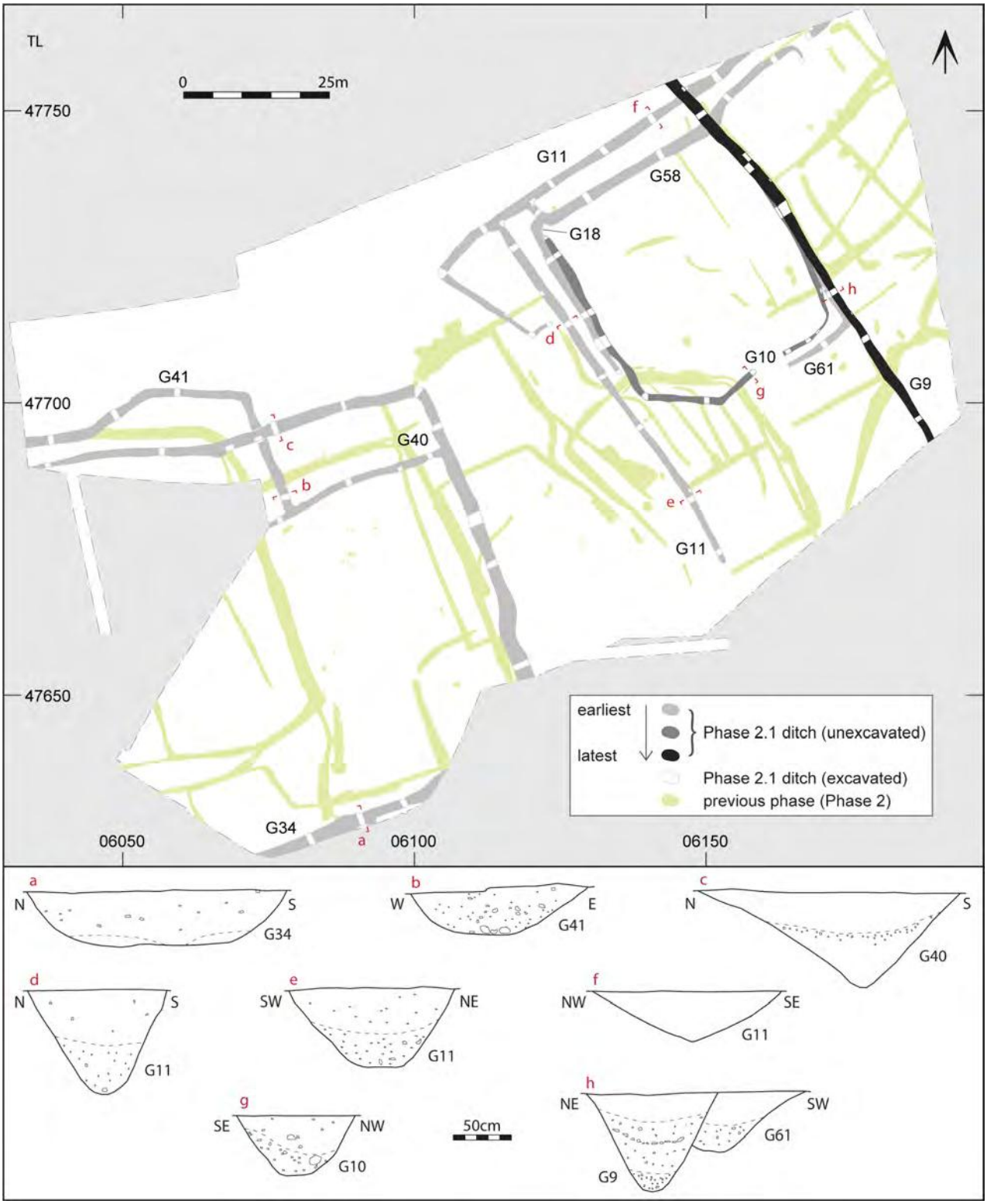


Figure 7: Development of the Phase 2.1 (early Roman) enclosure system and selected sections

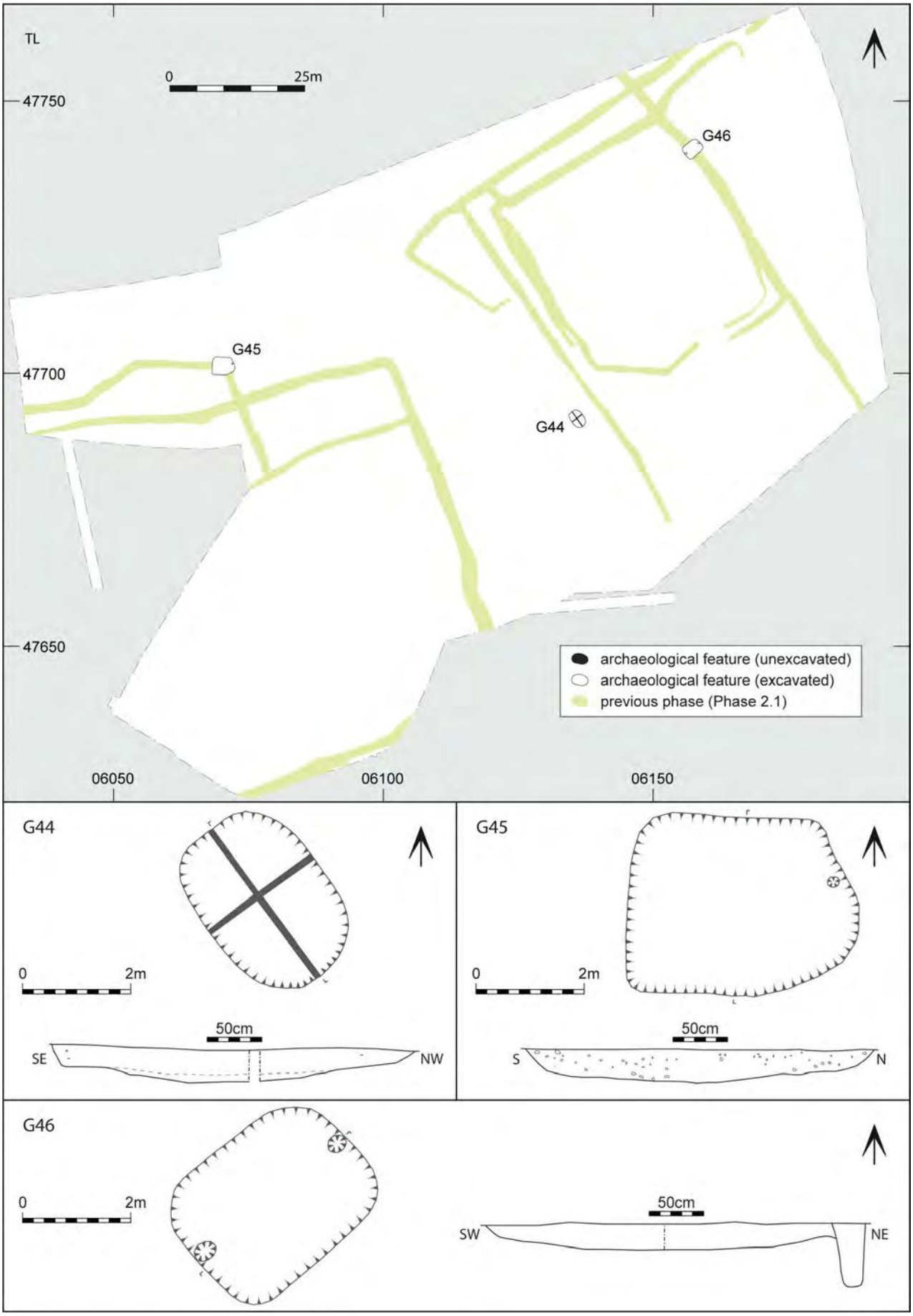
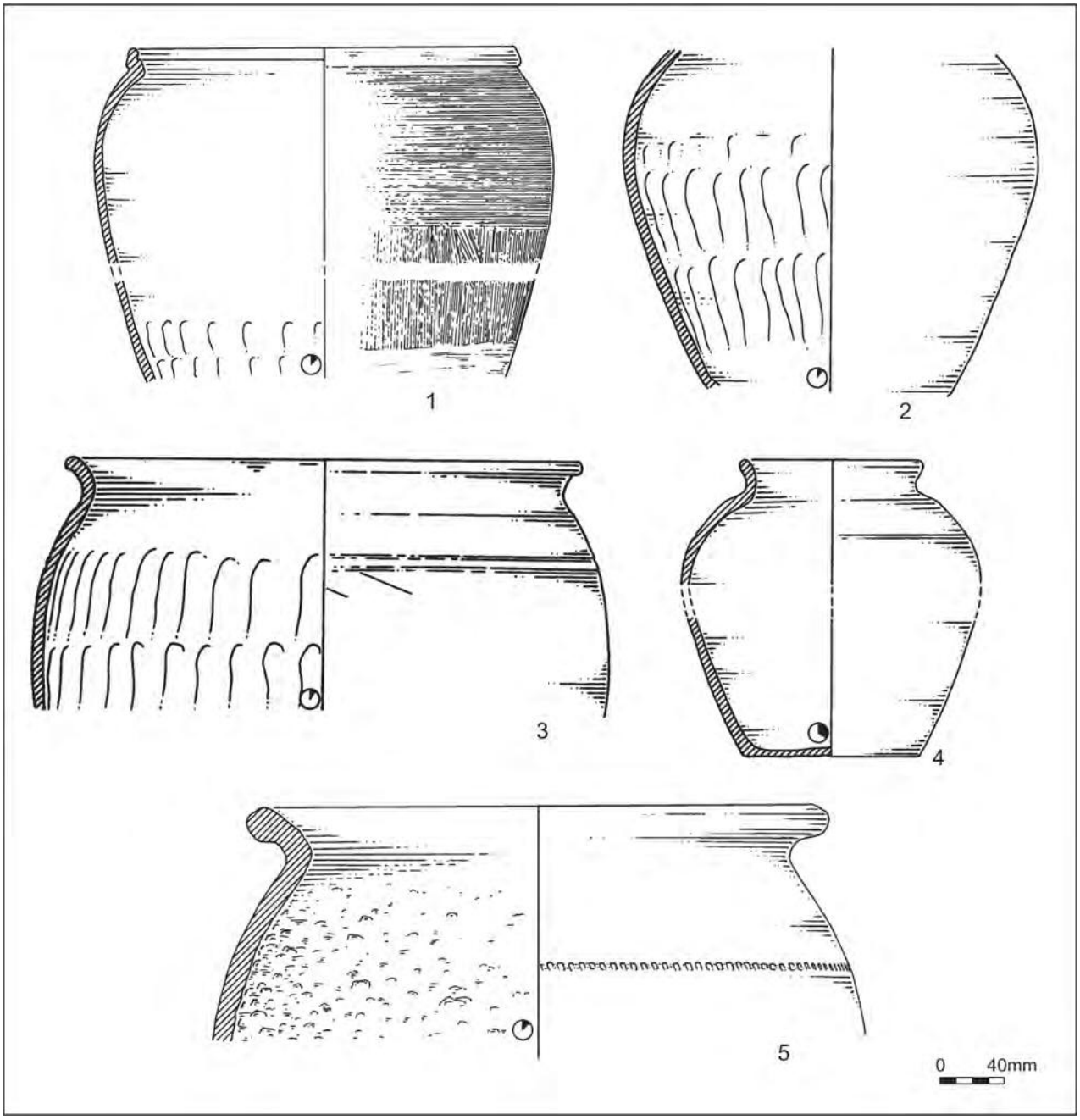


Figure 8: Phase 3 (early Saxon) — overall plan and detail of the SFBs

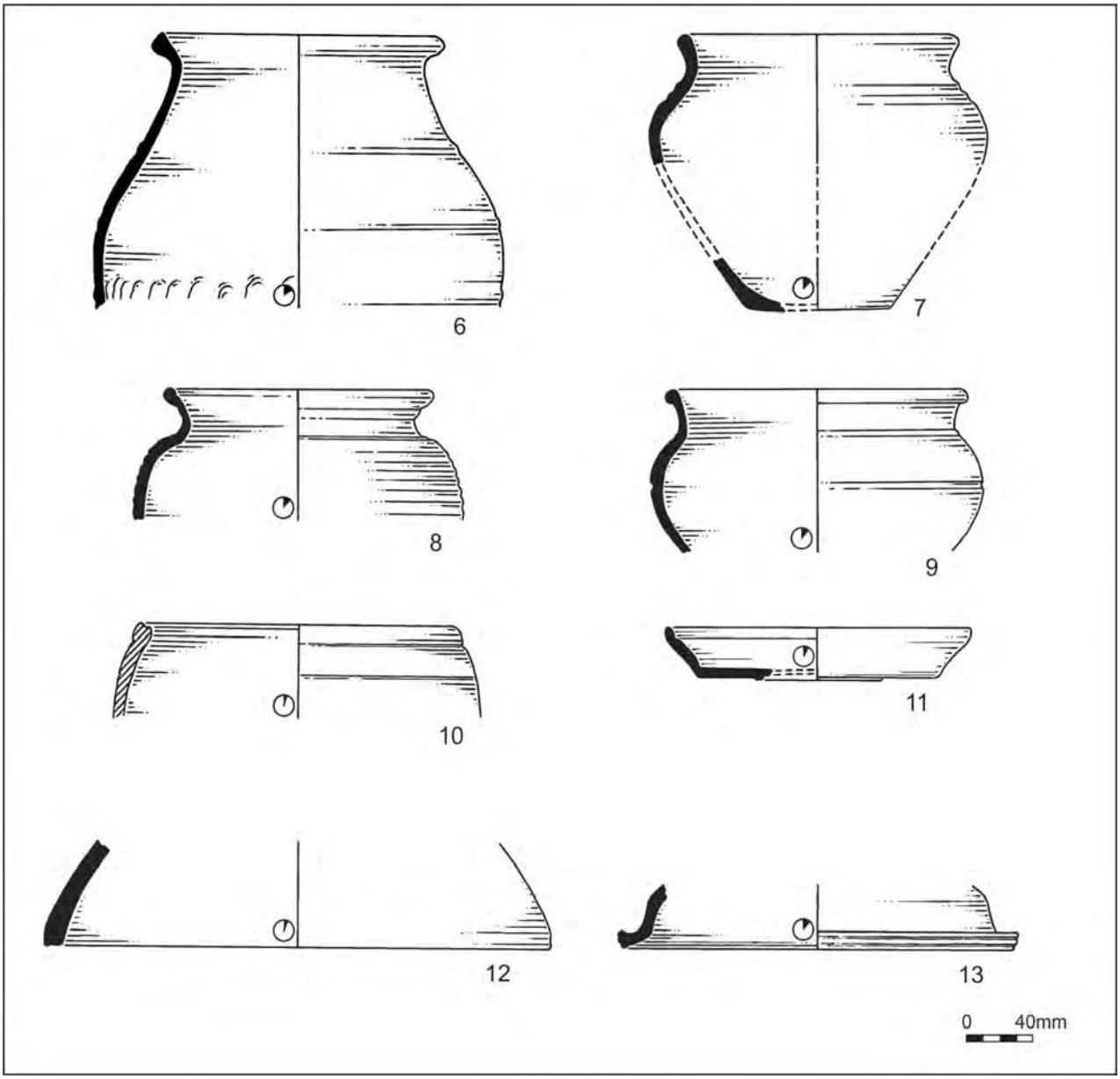
Figure 9: Beaker pottery with fingernail-impressed decoration, lipped rim and pinched-out cordon



Catalogue

1: G37 Lid-seated jar with rilled and vertical combed decoration: fabric F07
2: G37 Large jar: fabric F09
3: G37 Large storage jar with everted rim: fabric F09
4: G7 Narrow-necked jar with everted rim: fabric F09
5: G48 Large storage jar with rouletted decoration: fabric F05

Figure 10: Selected pottery from Phase 2 deposits



Catalogue

6: G37 Barrel-shaped butt-beaker: fabric F06B
7: G38 Cordoned jar: fabric F06B
8: G59 Jar with rippled shoulders: fabric F39
9: G32 Cordoned jar: fabric F06B
10: G2 Lid-seated vessel with horizontal grooved decoration: fabric F09
11: G4 Platter Form Cam. 13: fabric R26
12: G37 High bell-shaped lid: fabric F09
13: G59 High carinated lid: fabric F34

Figure 11: Selected pottery from Phase 2 deposits

Catalogue

14: G41 Lid-seated jar: fabric F05
15: G10 Wide-mouthed jar with horizontal combed decoration: fabric F06B
16: G9 Lagena with plain collar and undercut rim: fabric R10D
17: G9 Lagena with plain collar and undercut rim: fabric R04
18: G9 Lagena with plain collar: fabric R04

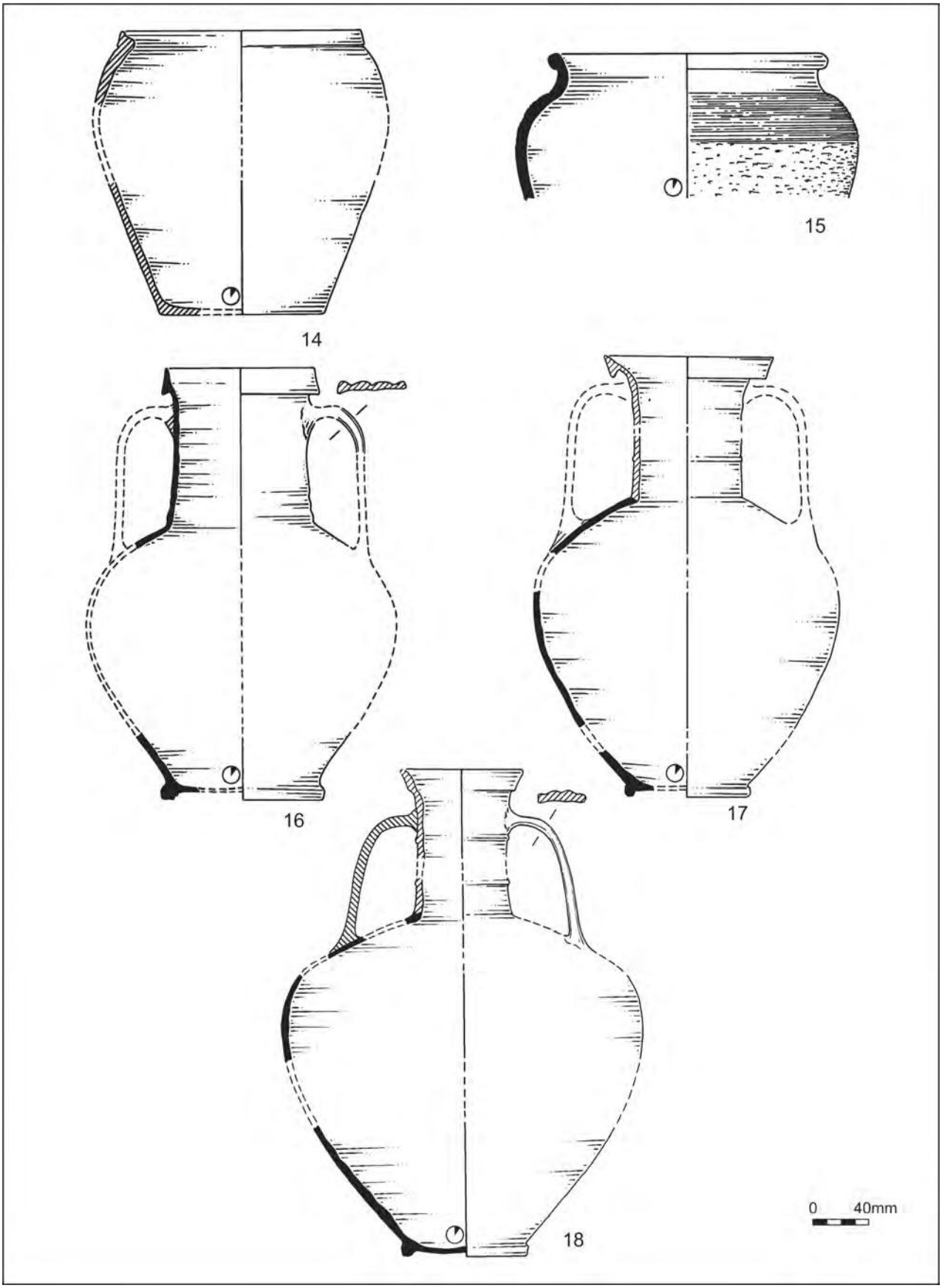
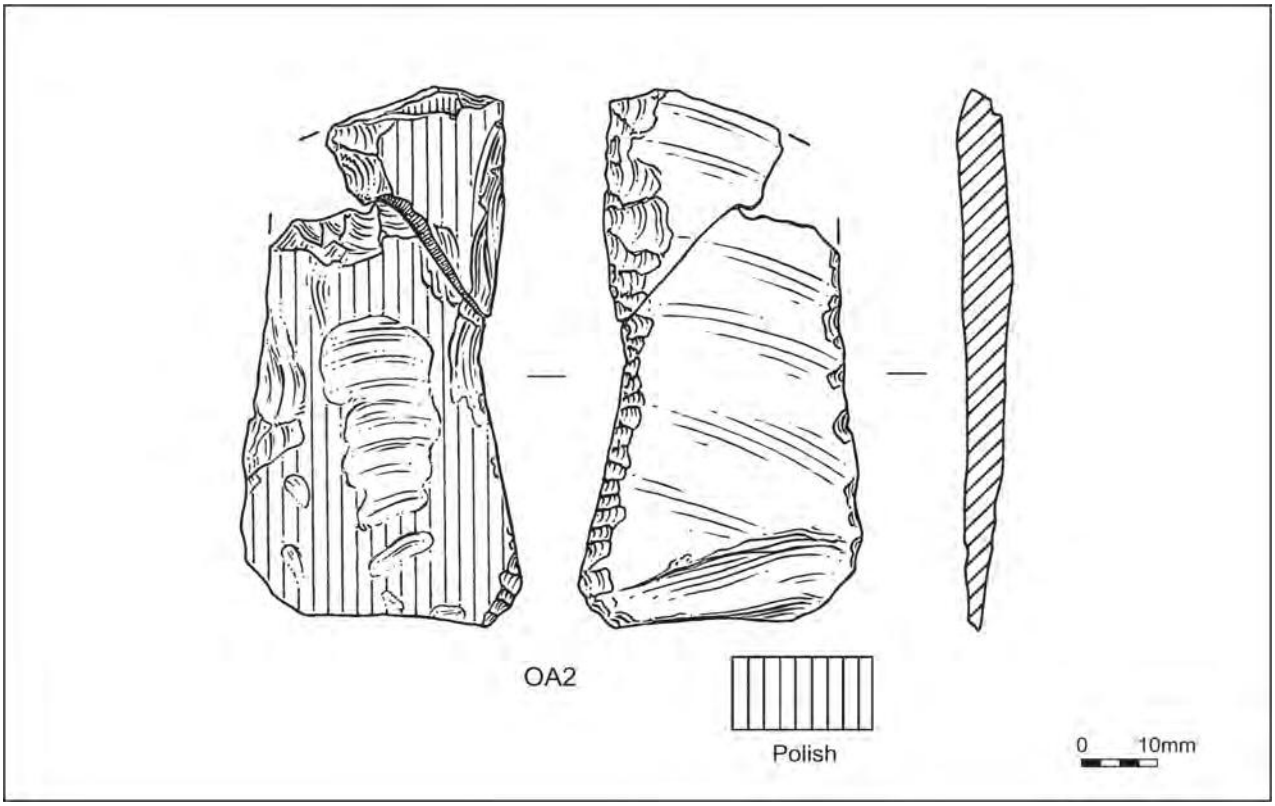


Figure 12: Selected pottery from Phase 2.1 deposits



Catalogue

19: G46 Vessel with everted rim: fabric A15
20: G46 Large body sherds from a lugged vessel: fabric A18

Figure 13: Selected pottery from Phase 3 deposits

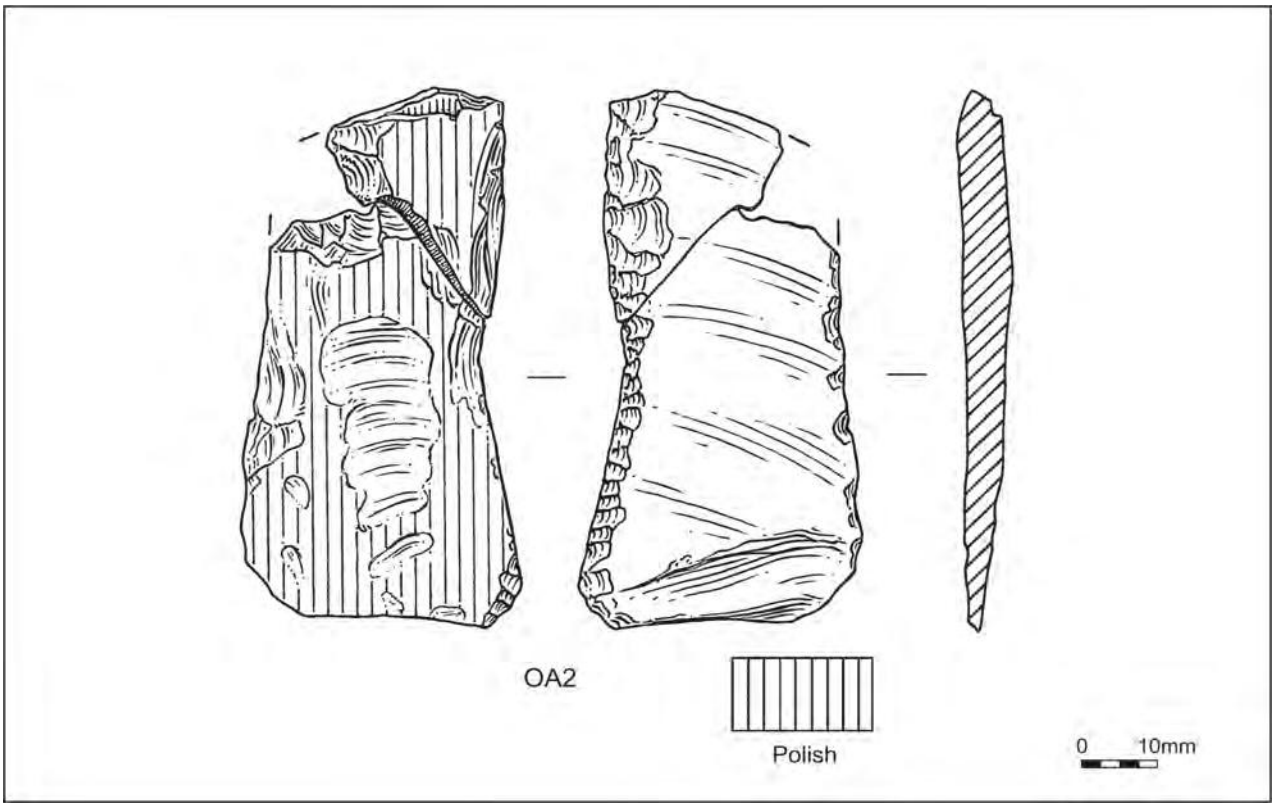


Figure 14: Flint knife from Phase 1

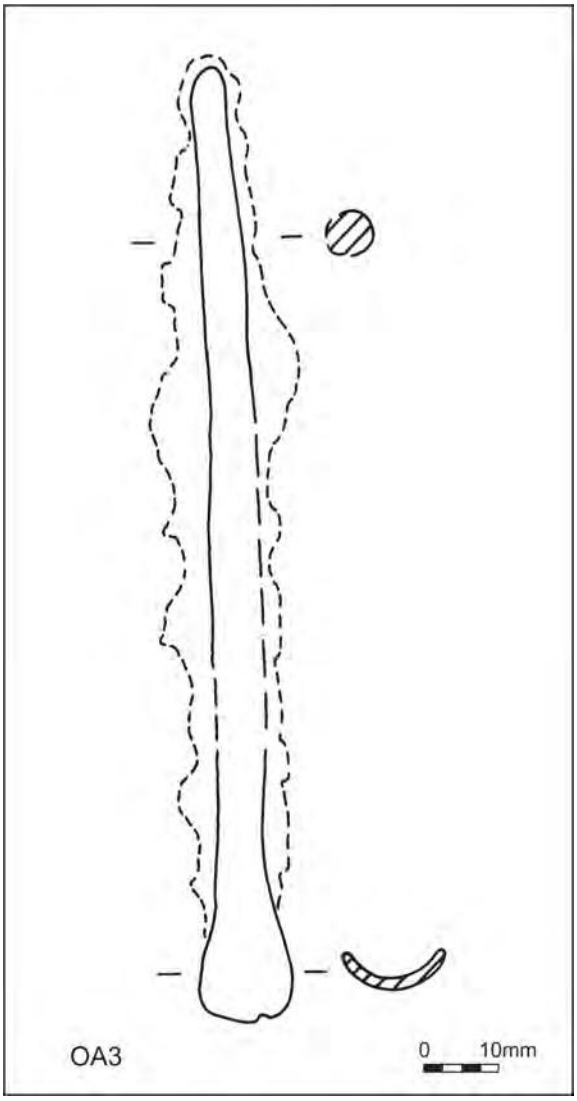


Figure 15: Iron gouge or spoon bit from Phase 2

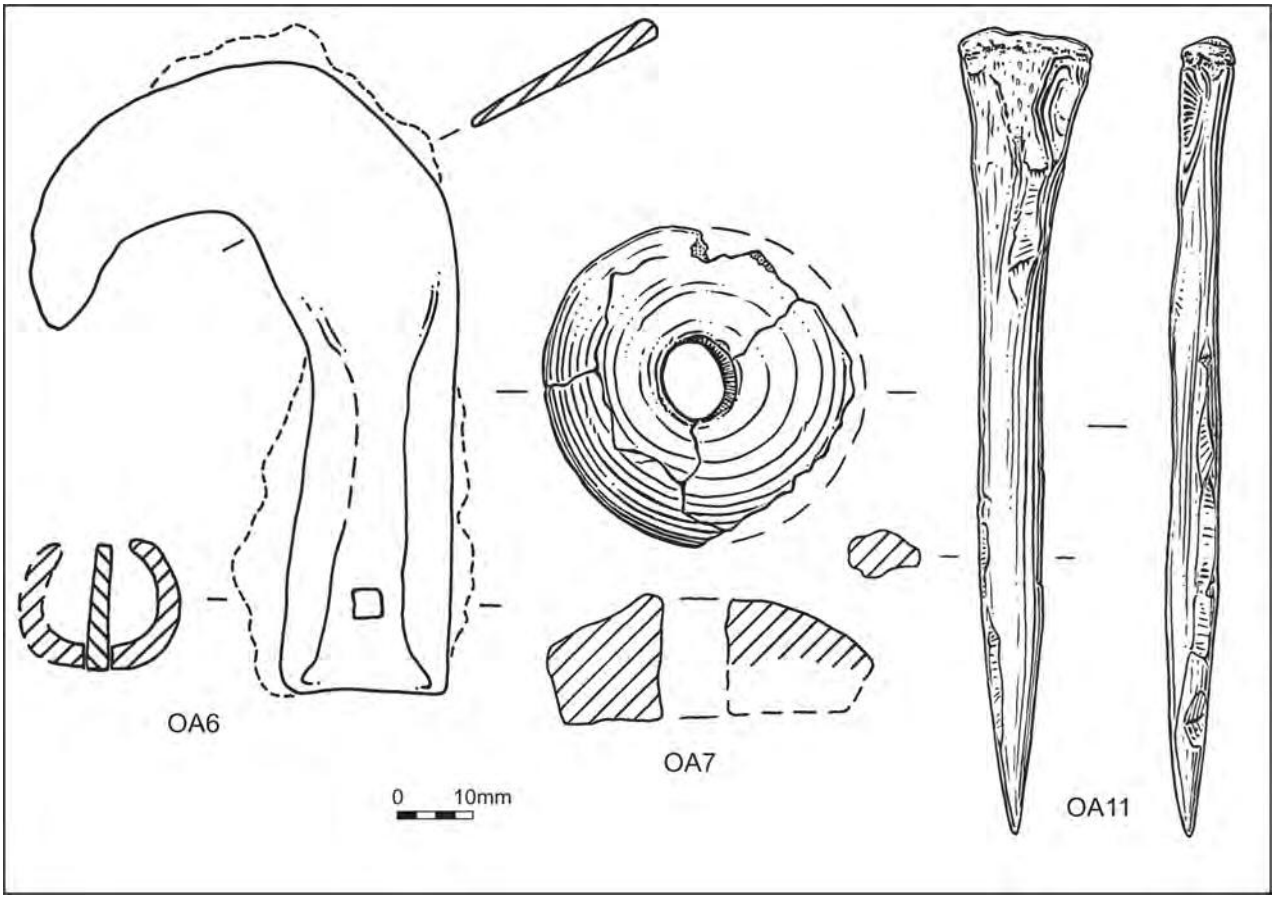


Figure 16: Selected other artefacts from Phase 3 deposits

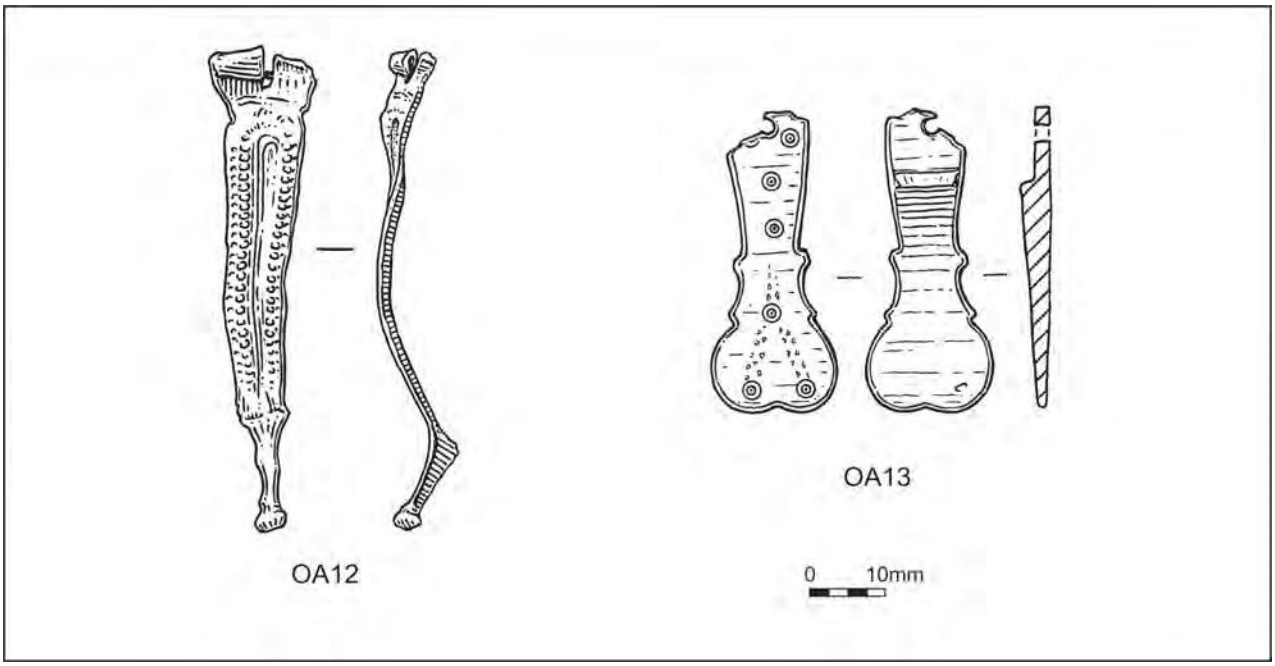


Figure 17: Selected other artefacts from Phase 5 deposits

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