

Channel Tunnel Rail Link

Bower Road Post Excavation Assessment Report

January 2002



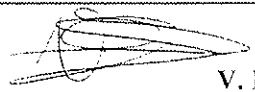
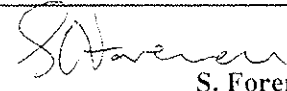
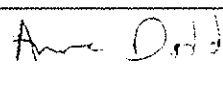
InfoWorks Document Reference:
004-EZR-SOXAR-00066-AA

Channel Tunnel Rail Link
Union Railways (South) Limited

Project Area 440

BOWER ROAD, SMEETH, KENT
ARC 440/ 95+900 - 97+100 /99

WATCHING BRIEF SDI
ASSESSMENT REPORT
FINAL

Prepared By Date: 11/01/02	 V. Diez
Checked By: Date: 11/01/02	 S. Foreman
Approved By: Position: Director PX Date: 11/01/02	 11/01/02 A. Dodd

Contract S/400/SP/0009/P484

Oxford Archaeological Unit
Janus House
Osney Mead
Oxford OX2 0ES

January 2002

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SUMMARY

As part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL), the Oxford Archaeological Unit were commissioned by Union Railways (South) Limited to undertake a watching brief along Project Area 440 between Mersham and Barrowhill in Kent, at Bower Road, Smeeth. The intervention was subsequently classified as a Watching Brief Significant Discovery Individual (WBSDI).

The watching brief recorded a sequence of late Iron Age and Roman activity dating from the late Iron Age to the 4th century AD. Minor evidence for medieval activity or post-medieval was also recorded. In summary, the following dated occupation has been established:

- evidence of limited activity during the late Iron Age represented by a large pond fed by 2 drainage ditches
- the establishment of an enclosure ditch, following the Roman conquest, forming a first field system
- disuse of the first field system and its replacement by a second field system of boundary ditches; these boundary ditches seem to have had a limited life and fell into disuse probably at the end of the 2nd century
- the construction of a substantial posthole building probably linked to farming activity, with an associated enclosure ditch; this is probably datable to the late 2nd century, but may be slightly earlier. A second, heavily truncated posthole building towards the north-west of the site may be associated with the same phase of activity
- modification of the main posthole building, probably in the 3rd century. This agricultural complex seems to have been in use until the late 3rd century, and may have continued into the 4th century. A further two features, a waterhole and a cremation, have been dated to the period AD 180-270
- evidence of continuing occupation in the 4th century was concentrated in the northern part of the site and comprised three pits and a wall, although 4th-century coins were recovered in the area of the main posthole building
- 2 ditches running across the site are stratigraphically later than all the other features on site but did not produce satisfactory dating evidence; they are probably late Roman or post-Roman
- some evidence of medieval or post-medieval activity was identified following stripping south-east of the main area, in the direction of Little Stock Farm. Three walls constituting possible sheep pens were found, and may have formed part of a farm complex; a fourth wall may have been a field boundary.

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1. INTRODUCTION

1.1 Project Background

1.1.1 The Oxford Archaeological Unit (OAU) was commissioned by Union Railways (South) Limited (URS) to maintain a watching brief at Bower Road, Smeeth, between Church Road Sevington and Station Road, from chainage 95+900 to chainage 97+100. The site originally formed part of the general watching brief maintained in CTRL Project Area 440. However, following the discovery of extensive significant remains, the site was subsequently designated a Watching Brief Significant Discovery Individual (WBSDI). This work formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL). The location of the site is shown on Figure 1 and the details of the archaeological works are given in Table 1.

Table 1: Fieldwork events

Fieldwork Event Name	Type	Fieldwork Event Code	Contractor	Dates of Fieldwork
Bower Road	Significant discovery individual Watching Brief	ARC 440 99/95+900-97+100	OAU	6/07/99 - 22/09/00

1.1.2 The area investigated totalled c 0.25 ha, centred on URL grid point 85951E 18812N (OS NGR 605946 138812) The fieldwork was carried out following stripping by the principal contractor, and extended over a period of 14 months, from July 1999 to September 2000. Figure 2 shows the principal archaeological features recorded; the areas coloured blue on the figure were subject to differential stripping standards.

1.1.3 The archaeological Written Scheme of Investigation (WSI) for the watching brief (URS 1999a) was prepared by Rail Link Engineering (RLE), and agreed in consultation with English Heritage and Kent County Council (KCC) on behalf of the Local Planning Authority.

1.2 Geology and Topography

1.2.1 The site lies on Atherfield Clay, overlain by the Cretaceous Lower Greensand Hythe Beds to the north. This geological substrate is overlain by silty clay soils.

1.2.2 The site is located north of the East Stour river, on the edge of the East Stour valley, and lies on ground sloping gradually from north to south.

1.2.3 The area of the watching brief was in arable cultivation prior to the commencement of CTRL works.

1.3 Archaeological and Historical Background

1.3.1 The site is located in an area of modern agricultural land where few historic landscape features seem to have survived. However, the potential for activity and archaeological remains of all periods in the vicinity was highlighted by the desktop assessment (URL 1994), and numerous nearby sites have since been investigated during the course of CTRL works. The present site lies in the centre of a group of CTRL investigations located roughly 1 km apart from each other, comprising (from north-west to south-east): Boys Hall Balancing Pond, Sevington (URS 2000a); West of Blind Lane, Sevington (URS 2000c); Mersham (URS 1999a); the present site;

- Little Stock Farm (URS 1999c); and Church Lane and East of Station Road (URS 2000b).
- 1.3.2 South of Little Stock Farm, on the eastern side of the valley (URS 1994, 1264) scatters of prehistoric worked flint have been identified during fieldwalking. A flint scatter at Church Lane, and a waterlogged environmental sequence recovered at East of Station Road, provide evidence for Mesolithic activity and for the late Mesolithic palaeo-environment in the area (URS 2000b).
 - 1.3.3 Neolithic and Bronze Age flint has been found more widely, to the east of Mersham (URS 1994, 1090), at Church Lane and East of Station Road (URS 2000b), and at West of Blind Lane ((URS 2000c). Traces of possible mid to late Bronze Age field systems have been identified at Church Lane and East of Station Road, at West of Blind Lane and at Boys Hall Balancing Pond (URS 2000a). The excavations at Little Stock Farm found slight evidence for Neolithic and early Bronze Age activity, but much more extensive remains of Late Bronze Age date, comprising structural features and a hearth associated with part of a ditched field system (URS 1999c).
 - 1.3.4 All the sites show an interruption in activity during the early to mid Iron Age, with little or no evidence from this period being recovered. A resumption of activity in the late Iron Age and early Roman period is indicated by the results from all sites. The field system and cremations of this date at Boys Hall Balancing Pond lay in an extensive area of activity dating from this period, which has been revealed by numerous investigations around the site (URS 2000a). The excavation of the West of Blind Lane site has revealed extensive traces of late Iron Age-early Roman ditches that appear to have been laid out in the late Iron Age and to have fallen into disuse in the early 2nd century AD. There was no clear overall pattern in their layout but it seems likely that these ditches formed a field system (URS 2000c). At Little Stock Farm, excavations located a late Iron Age roundhouse associated with an enclosure system and trackway, and two crouched inhumation burials (URS 1999c). At East of Station Road, excavations revealed evidence for a system of roughly rectilinear fields running down to a stream below; the fields appeared to have been laid out in the late Iron Age and to have fallen into disuse early in the 2nd century, possibly in association with woodland recolonisation in the area (URS 2000b). Little or no evidence has been found in the area for Roman occupation after c AD 200.
 - 1.3.5 Some Anglo-Saxon activity has been identified in the area of Mersham, where a 6th- or 7th-century cemetery was identified during the early 19th century (URS 1999a). The recent CTRL excavation at the site recovered residual mid Saxon material, and evidence for probable late Saxon metalworking (*ibid.*).
 - 1.3.6 The village of Mersham is the principal medieval site in the vicinity, and its church is documented as early as 1040 (*ibid.*). The recent CTRL excavations at Mersham have recorded a metalworking site south of the church, principally datable to the period 1050-1200 although probably originating in the late Saxon period (see above). The site appears to have been abandoned from the 13th century until c 1550. Medieval field boundaries and drains were recorded at Little Stock Farm (URS 1999c), associated with a quarry and a possible kiln or hearth. Very little medieval evidence has been recovered from the other sites in the vicinity.
 - 1.3.7 Little Stock Farm is an unlisted building of 16th- to 17th-century date.
 - 1.3.8 Substantial evidence of late Iron Age and Roman occupation has been recovered elsewhere along the route of the CTRL, during both CTRL and unrelated works. Major CTRL excavations at Thurnham Villa in the Medway Valley have revealed a continuous sequence of occupation from the late Iron Age to the late 4th or early 5th

century AD (URS 2001a). The recently discovered Roman small town at Westhawk Farm, Ashford (OAU in prep) lies roughly 6 km west of the present site. This settlement was situated near the junction of two important Roman roads, focused along the road from the Weald to Canterbury. Important evidence for iron production, both smelting and smithing, was recovered, but agricultural activity was also evidenced. A small cemetery area and other scattered burials were also found. Occupation of the excavated part of the settlement was confined almost entirely to the period c AD 50-250, with only minimal evidence of late Roman activity.

2. ORIGINAL PRIORITIES, AIMS AND METHODOLOGY

2.1 Landscape Zone Priorities

- 2.1.1 The priorities set out in the WSI for the watching briefs in CTRL Project Area 440 (URS 1999b) were to recover data to address the following issues:
- 2.1.2 Spatial organisation of the landscape, and changes through time especially the socio-economic landscape of later agriculturalists (2000-100 BC)
- 2.1.3 Ritual and ceremonial use of the landscape, specifically burial practices in the Roman and post-Roman periods.

2.2 Fieldwork Event Aims

- 2.2.1 The general fieldwork aims applied to the Watching Brief site at Bower Road were to record any archaeological features or deposits uncovered during construction, including the retrieval of environmental and economic indicators. Where feasible the fieldwork was orientated towards addressing the aims of the CTRL Research Strategy, with particular reference to the Landscape Zone Priorities, as detailed in the WSI.

2.3 Fieldwork Methodology and Summary of Excavation Results

- 2.3.1 All groundworks were monitored by an archaeologist, in accordance with the WSI (URS 1999b). Works included the removal of topsoil, subsoil, made ground and superficial geological deposits. Where archaeological features were exposed, they were excavated by hand and recorded before any further stripping took place.
- 2.3.2 The key aim for environmental remains was to undertake sufficient sampling to recover palaeo-environmental and economic indicators, and in that objective to make provision for the sampling of a wide range of contexts for potential assessment and analysis for plant and animal micro/macro fossils and soils/sediments. Opportunistic sampling was undertaken to achieve the project aims.
- 2.3.3 The site was machine stripped using a toothless ditching bucket under constant archaeological supervision. Planning of the site was concurrent with the machine stripping. An overall site plan was produced at scale 1:200 and more detailed segments of the site were planned at 1:50. Specific features were planned at scale 1:20. The grid points were located in relation to the URL grid.
- 2.3.4 The main area of the site (Figure 3) shows slight evidence for activity during the late Iron Age, including a large pond (253) fed by 2 drainage ditches (257 and group 176). The immediate post-conquest period is represented by only 2 ditches (group 173 and 183).
- 2.3.5 The main period of activity at the site has been dated from the late 1st century to the late 3rd century. This includes 5 boundary ditches (groups 169, 172, 178, 180, 174 and 742) and a rectangular building (group 550) associated with a drainage ditch (group 181) and an enclosure ditch (group 171). Two posthole alignments (groups 185 and 188) have been assigned to the same phase and may represent fencelines. The complex is likely to represent a farm building with associated enclosures. A small 4th century element in the pottery assemblage, and two 4th century coins, suggest that the building (group 550) and its enclosure ditch (171) remained in use until the late Roman period. A group of 8 postholes in the northern part of the main area probably represent part of a heavily truncated posthole building (Group 686)

but produced no substantial datable evidence. This is considered likely to belong to the main phase of activity.

- 2.3.6 A cremation (107) found at the western edge of the site produced 3 vessels dating to the period AD 180-270.
- 2.3.7 The northern part of the main area revealed evidence of activity datable to the period AD 270-400. The main features were a pit (242) that produced a large quantity of finds (pottery, animal bone, human bone and glass fragments), a drystone wall (group 730) and 3 further pits (229, 721 and 731). The range of finds present in pit 242 suggests that this may have been a special or terminal deposit (see below).
- 2.3.8 A second area of archaeological activity was identified and recorded a short distance to the south-east of the main site. This area, which is illustrated on Figure 2, contained three shallow walls (392-4) that may represent the remains of animal pens; a longer curving wall to the south (454) was perhaps a boundary. Medieval pottery was found in associated layers, suggesting that the walls were of medieval or post-medieval date.

2.4 Assessment Methodology

- 2.4.1 This assessment report was commissioned by URS to the specification for assessment reports produced by RLE, as discussed with English Heritage and Kent County Council (URS 2000d). This specification follows national guidelines prepared by English Heritage and provides additional information regarding level of detail required and formats. The production of the assessment reports was managed by Stuart Foreman (Project Manager), and Valerie Diez (Team Leader). The majority of specialist work was undertaken by qualified external specialists, with the remainder of the work completed by in-house experts.

3. FACTUAL DATA AND QUANTIFICATION

3.1 The Stratigraphic Record

- 3.1.1 The main area recorded during the watching brief (Figure 3) appears to be dominated by numerous ditches that probably formed part of enclosure systems. It is difficult to define an overall pattern across the site within each phase but some spatial organisation can be perceived among these ditches, and at least 6 phases have been identified. It is clear that the buildings and enclosures are part of a more extensive settlement. Although the stratigraphic relationships were not always clear, the intersections between ditches allow most of them to be placed in stratigraphic sequences. The principal exception to this was the differentially stripped area towards the north-west of the site (highlighted on Figure 2), where there has probably been greater truncation of the archaeological features. As a result, no physical relationships have been defined between the main and subsidiary stripped areas, although some patterns can be recognised. Similar difficulties exist with the minor differentially stripped area immediately south of the main site (highlighted on Figure 2).
- 3.1.2 Across the entire site, numerous discrete features (pits and postholes) were directly cut into the natural ground surface and had no stratigraphic links to other features.
- 3.1.3 The large amounts of pottery found on the site provide additional support for the dating and sequencing of features and aid in the association and characterisation of features within the same phase.
- 3.1.4 There was no evidence of activity prior to the late Iron Age period.

Phase 1: late Iron Age

- 3.1.5 The earliest activity was represented by a large pond or water hole (253) situated downslope in a natural run-off area. It was fed by 2 drainage ditches (ditch cut 257 and ditch group 176). These ditches were orientated NNE-SSW and were traced for about 32 m; beyond this point the ditches were obscured by colluvium, but the ditches recorded within the differentially stripped area towards the north of the site are probably the same features, and extend for a further 21 m to the edge of excavation. Ditch group 176 produced small quantities of pottery dating from the late Iron Age. The other features associated with this ditch by stratigraphic relationships did not produce any dating evidence.
- 3.1.6 These features were sealed by a colluvial deposit, which suggests a pause in activity prior to the next phase of ditches.

Phase 2: early Roman to Flavian period

- 3.1.7 The only evidence for the earliest Roman period comprised two ditches (173 and 183) feeding into a probable sump. Ditch 173 produced pottery dating to the period AD 43-80 suggesting it was cut immediately after the Roman conquest. A few sherds of the same period were found in ditch 183, which could possibly be a continuation of ditch 173.

Phase 3a: Roman, late 1st to 2nd century

- 3.1.8 A minimum of 6 boundary ditches have been identified as post-dating the colluvium, and are likely to represent the ditches of a partially revealed field system. Strong stratigraphic evidence supports this phasing. The principal elements of the field system are ditch groups 172, 178, 180 and 169. They are aligned parallel to

each other, orientated NNW-SSE or perpendicular to this orientation (NNE-SSW). Ditch 172 was traced for 121m across the site; ditch 169 was fully exposed, having a total length of 96 m. The associated pottery ranges from AD 80/90 to AD 170/180 in date. Ditch 742 within the differentially stripped area also produced pottery of the same date range.

- 3.1.9 Late 1st to 2nd century pottery occurred in three regularly aligned postholes (group 185), possibly a palisade. Another possible palisade (group 188) comprising six regularly aligned postholes was located in the same area and could be part of the same phase. However, the pottery recovered from group 188 was insufficient to confirm this dating.
- 3.1.10 North-west of group 188 was a third structure (group 686), comprising eight postholes organised in two alignments. Immediately to the south of the postholes was a short length of a shallow (truncated) linear feature on the same alignment (690) containing the remains of possible ragstone wall footings. It is very likely that these features represent the end of a substantial building suggesting affinities with both aisled and postbuilt types. A recently excavated aisled building from site 34 along the Birmingham Northern Relief Road has a virtually identical arrangement of a double line of postholes with what may be a related external slot; at that site the features were clearly seen to form one end of a substantial aisled building (Paul Booth, pers. comm.). Within Kent, similar types of buildings are known at Thurnham Villa and Westhawk Farm. The pottery recovered from group 686 was insufficient to establish a close date, but the alignment of the postholes is consistent with that of the Phase 3 enclosures and posthole building 550, suggesting that they may be associated.

Phase 3b: Roman, ?late 2nd century

- 3.1.11 In the eastern part of the site, group 550 has been identified as Roman building which is composed of 19 postholes forming a rectangular shape (shown in detail on Figure 4). The building was surrounded by a rectangular ditch (group 181), probably a drainage ditch meant to catch the rainwater from the roof of the building. Ditch 181 probably drained into ditch 171, which appears to define a large rectangular enclosure within which the building was situated. The enclosure formed by this ditch is 100 m in length by an exposed width of 42 m. The building is aligned roughly E-W. Small quantities of pottery from group 550 and group 181 are consistent with the a 2nd-century date. Taken at face value, the pottery could suggest a date around AD 200 for the construction of the building and its enclosure, but it is equally likely that pottery of this date could have been introduced during repairs to the building at this time. The complex was probably a farm building and an associated enclosure.

Phase 4: modifications to the building

- 3.1.12 During a later phase, the building underwent some modifications. Drainage ditch 181 appears to have gone out of use, and a line of five postholes (group 184) was cut into its fills. On the north of the building, stone feature 516 was laid on the top fill of the ditch, possibly to provide a crossing over the partly filled ditch. A rectangular clay lined pit (554) immediately south of the building was probably contemporary with the postholes of group 184; this may have been a tank to collect water from the roof. The short linear feature (group 187) was also possibly associated with the alterations to the building; it is probably a structural beam slot. Unfortunately the dating evidence is not sufficient to define when these changes took place.

Phases 5a and 5b: Roman, 3rd and 4th century

- 3.1.13 The presence of 4th-century pottery in the upper fills of enclosure ditch 171 and a possible internal drainage gully (182) suggests that building 550 and its enclosure continued in use into the Late Roman period. This impression is strengthened by the presence of a 4th century coin in slot 151 to the west of the building complex, and of a very late 4th century coin (AD 388-402) within beamslot 187.
- 3.1.14 Cremation 107, at the western edge of the site, produced 3 vessels dating to the period AD 180-270.
- 3.1.15 Pottery dating from the period AD 180-270 was retrieved from the lower fills of waterhole 372. The top fills of the same feature contained pottery from the period AD 270-300.
- 3.1.16 Pit 242, located towards the north of the site, produced the largest assemblage of 4th-century pottery from the site. Other finds from the pit included fragments from a conical glass beaker datable to the same period, and fragments of ironwork and nails. The bodies of a young calf and a neonatal calf were deposited in the pit, together with skulls of sheep and a pig. A fragment of human mandible was found in the lowest fill of the pit and unidentifiable cremated bone was found in the upper fill. This is highly suggestive of special deposition, and could represent a terminal deposit upon the abandonment of the site.
- 3.1.17 Small amounts of pottery datable to the period AD 270-400 were also recovered from other features towards the north of the site: drystone wall 730 and pits 229, 727 and 731.

Phase 6: late Roman or post-Roman

- 3.1.18 Two ditches (170 and 179) are stratigraphically the latest features on the main area of the site, cutting all other ditches. Insufficient evidence is available to date them more closely. The small quantities of pottery recovered from excavated sections was of early to late Roman date, and the majority (over 80%) came from the top fills. It is therefore likely either that the Roman pottery was redeposited in ditches of later date, or that there has been significant disturbance by later ploughing.
- 3.1.19 Within the subsidiary watching brief area to the south-east of the main site (see Figure 2), three shallow walls (392, 393 and 394) are probably the remains of sheep pens, and a curving wall to the south (454) seems likely to represent the remains of a field boundary. Medieval pottery was found in layer 459, which underlay the probable sheep pen walls, implying that they are of medieval or later date. The present farmhouse at Little Stock Farm is an unlisted building of 16th or 17th century date, and it seems likely that the remains uncovered by the watching brief represent part of the farm complex.
- 3.1.20 Within the differentially stripped area immediately south of the main site (Figure 2) the watching brief identified the remains of two segments of ditch (893 and 887), and one pit (886). Pottery from pit 886 dates from the period AD 70-150. Ditch 893 contained five sherds of early Roman pottery; there was no dating evidence from ditch 887.

Truncation, disturbance and residuality

- 3.1.21 It is clear that the site has suffered from vertical truncation as a result of extensive arable cultivation, and the average surviving depth of ditches varied between 0.30 and 0.50 m. Nevertheless, in the main area of the site the survival of features was better than had been anticipated, and is adequate to support stratigraphic analysis.

the establishment of a phased sequence, and archaeological interpretation. The evidence from the differentially stripped areas is poorer, and it is likely that features in these areas have been lost.

- 3.1.22 With the exception of the posthole building and ditch group 169 it is unlikely that the watching brief has exposed any features to their full extent. Despite this, the character of many of the features is well understood, and limited further research and analysis should allow the identification of others (for example, the posthole structure, group 686).
- 3.1.23 The site also suffers from a high degree of residuality and redeposition, which affects the scope for close dating. The finds assemblages from the topsoil and subsoil layers were very mixed in date, suggesting that later ploughing had had a significant impact on the site. It is also likely that the majority of the finds represent rubbish imported from off the site itself for re-use or disposal, rather than material discarded *in situ* in its primary context. The posthole building itself contained a high proportion of heavily comminuted redeposited pottery. Nevertheless, the combination of stratigraphic and artefactual evidence is likely to be sufficient for the establishment of a reliable sequence of occupation, and to place it in a broad chronological context within the Roman period. The dating of the posthole structures remains unsatisfactory at present, and it is likely that further analysis will allow some refinement of this.

3.2 The Artefactual Record

Late Iron Age and Roman Pottery - Appendix 1.1

- 3.2.1 A total of 4724 sherds of mainly late Iron Age and Roman pottery were retrieved during the watching brief fieldwork at Bower Road, with a total weight of 39.544 g. A further 260 sherds (909 g) were recovered during sieving of environmental samples. The late Iron Age is represented by just a few sherds (41 in total); the remainder of the pottery is of Roman date, spanning the entire period from AD 43 to AD 400, although the bulk of the Roman pottery dates from the period before *c* AD 270.
- 3.2.2 The bulk of the pottery came from sections dug across the various enclosure and drainage ditches, representing all periods of Roman occupation. Good groups representing the period *c* AD 180-270 were recovered from waterhole 372 and cremation 107, and pit 242 contained a good group of later material, dating from the period *c* 270-400. This group is of particular interest since it may form part of a special deposit. Smaller quantities of pottery were retrieved from other features such as pits and postholes. Material found during sieving derived from a similar range of features.

Building Materials - Appendix 1.2

- 3.2.3 A small quantity of ceramic building material was recovered from the excavations, all of which has been examined for this assessment. The total weight is 6.880 kg. Most of the tile dates from the Roman period, with negligible quantities of later material. The types represented are brick, roof tile (tegula and imbrex) and box flue tile, although the small quantity of imbrex suggests that the assemblage does not represent primary destruction deposits of roofing tile, but material that had been reused for a secondary purpose.

Fired clay - Appendix 1.3

- 3.2.4 A small quantity of fired clay was recovered, weighing 0.818 kg; all of this material has been examined for this assessment. The fired clay assemblage is generally too small and abraded to be dated, but appears to include fragments of clay loomweights that may be Roman or pre-Roman in date. The presence of mortar of interest as an indicator of Romanised building in the vicinity, and a fragment of sandy mortar from a structural beamslot in the posthole building may be render from a wall surface.

Flint - Appendix 2.1

- 3.2.5 A total of 120 pieces of worked flint and 6 pieces of burnt unworked flint (weighing 95g) was recovered from the watching brief. It would appear that this material is largely redeposited within later features, although late Mesolithic and Neolithic flintwork in good condition was recovered from cleaning layers in the vicinity of the medieval or post-medieval sheep pens (finds reference numbers 455, 458 and 511); this material was in better condition than the majority of the assemblage and is unlikely to have moved far from its original place of deposition. Diagnostic retouched forms dating from the Mesolithic period through to the early Bronze Age were identified. The area was perhaps a focus for Neolithic to early Bronze Age activity, whilst the Mesolithic artefacts may have derived from a temporary camp.

Glass - Appendix 3.1

- 3.2.6 The Roman glass recovered during the watching brief at Bower Road consisted of 11 fragments, including 1 window fragment, sherds from 4 vessels and 3 beads. Although a small assemblage for a Roman site, the glass ranges in date from the 1st to the 4th century, and a variety of functional types are present. The presence of the glass (especially the vessel and window glass) may be a pointer to Romanised occupation of some status at the site, or more probably in its vicinity.

Metalwork - Appendix 4.1

- 3.2.7 A total of 204 metal objects (including 4 copper alloy items) were retrieved by hand excavation. All come from stratified contexts and are likely to be of Roman date, even though the objects themselves are not datable. The majority of the assemblage is made up of nails from a variety of contexts across the site; the remainder comprises a number of broken fragments from what were probably utilitarian structural items. A single possible mount or strap end was identified.

Coins - Appendix 4.2

- 3.2.8 A small group of nine Roman coins were recovered by hand excavation, and have been provisionally identified and dated. The assessment results suggest a preponderance of 3rd and 4th century coins, although 1st to 2nd century coins are also present, including a sestertius of Vespasian datable to the period AD 69-79. A very late 4th-century coin was recovered from beamslot 187 within the posthole building, and a second 4th-century coin came from a slot, 151, to its west.

Slag - Appendix 5

- 3.2.9 A total of 19 nodules of slag (374 g) were recovered during watching brief fieldwork at Bower Road. There was no evidence for *in situ* metalworking on site, and the slag came entirely from ditch fills suggesting secondary redeposition of material from elsewhere.

3.3 The Environmental Record

Human Bone - Appendix 6

- 3.3.1 A total of six deposits of cremated bone and one broken though complete unburnt disarticulated bone were recovered. They ranged in date from AD 100 to the 4th century. The unburnt fragment was the mandible of an adult male aged 25-35 years. The assessment has confirmed that three of the cremated deposits were human (122, 162, 243). One deposit (367) was mixed human and animal bone. Nothing from deposit 462 was identifiable while deposit 515 consisted entirely of animal bone.
- 3.3.2 Deposit 122 was contained within cremation 107 at the west edge of the site, and associated with three pottery vessels of the period *c* AD 170-300. The other identified human bone came from a range of contexts, comprising pit 242, waterhole 372 and ditch groups 169 and 171.

Animal Bone - Appendix 7

- 3.3.3 A total of 2587 fragments of animal bones were hand-recovered during the watching brief fieldwork at Bower Road. Of these, 1561 fragments (9602 g) were examined for the assessment, with 240 (6837 g) identifiable to species. A further 403 fragments (280 g) were recovered through sieving of environmental samples and examined; of these, 82 fragments were identified to species or group.
- 3.3.4 In general, fragment numbers were too low for detailed interpretations and comparisons of assemblage attributes such as frequency of species and skeletal elements.
- 3.3.5 Only two fragments were datable to the Iron Age. The remainder are from Roman contexts and show the presence of the main domesticates with an apparent predominance of cattle, although this cannot be reliably assessed with such a low fragment count. The species representation is likely to be distorted by a small number of groups of partially complete skeletons. A number of these are of particular interest and may be associated with ritual and ceremonial practice (for example, the large group of material in pit 242).
- 3.3.6 Broadly, the assemblage is suggestive of a producer site where cattle, sheep and pigs were reared both for consumption and for secondary products.

Macroscopic Plant Remains and Charcoal - Appendix 8

- 3.3.7 A total of 55 samples were recovered on site. 24 samples of Roman date were submitted for assessment of their charred plant macrofossil remains and charcoal, of which 20 produced identifiable charred remains. Cereal grain was present in most flots, predominantly *Triticum spelta/dicoccum* (spelt/emmer wheat) and *Hordeum vulgare* (barley). Large assemblages were present in five deposits, two of which came from ditch groups 181 and 171 around the posthole building, and three from two isolated 1st and 2nd century pits. In addition, waterlogged and mineralised remains were present in a sample from pit 242, which may be associated with a special deposit.

Molluscs - Appendix 9.1

- 3.3.8 Calcareous colluvial sediments on the site resulted in good preservation of mollusc shells in the archaeological features which cut them. A total of 31 samples, each of 2 kg, was taken for molluscs from ditches and a pit.

- 3.3.9 Assessment of molluscs from a selection of these samples showed the presence of woodland, open and aquatic habitat fauna, but also suggested that the assemblages were affected by a high degree of residuality. In particular, it is likely that the woodland snails were of early Holocene origin and had been reworked from the colluvial sediment present on the site. It is therefore unlikely that the assemblage can provide a reliable indication of the environment of the Roman settlement.

Oysters and other marine molluscs - Appendix 10.1

- 3.3.10 A small quantity of oyster and other marine mollusc shells were recovered from the excavations. Generally their state of preservation is fair to poor and the numbers of measurable/recordable shells are too few to permit statistical comparisons of their characteristics on either an intrasite or intersite basis.

3.4 Archive Storage and Curation

- 3.4.1 The archive index has been updated and is shown in Table 2. All finds and samples are adequately packaged and no further conservation work is required.

Table 2: Archive index

ITEM	NUMBER OF ITEMS OR BOXES OR OTHER	NUMBER OF FRAGMENTS / LITRES	CONDITION: W = washed; UW= unwashed; M = marked; P = processed; UP = unprocessed; D = digitised; I = indexed
Contexts records	683		I
A1 plans	21		D
A4 plans	14		D
A4 sections	133		D
Small finds	134		P
Films (monochrome)			I
Films (Colour)			I
Flint (boxes)	1 size 3	133	W,M
Pottery (boxes)	4 size 1 1 size 2	4577	W,M
Fired clay (boxes)	1 size 3	272	W,M
CBM (boxes)	2 size 2	89	W,M
Stone (boxes)	1 size 4	81	W,M
Metalwork (boxes)	1 size 4 3 size 8	211	P
Glass (boxes)	1 size 4	11	W,M
Slag (boxes)	1 size 4	15	P
Human Bone (boxes)	1 size 4	6	W,M
Animal Bone (boxes)	3 size 1	2587	W,M
Cremations (boxes)	1 size 4		P
Shell	1 size 3	142	P
Soil Samples (No.)	55		P
Soil Samples (Number of contexts)	30		P

Cardboard boxes

Size 1 = Bulk box	391mm x 238mm x 210mm	0.020 m ³
Size 2 = Half box	391mm x 238mm x 100mm	0.009 m ³
Size 3 = Quarter box	386mm x 108 mm x 100mm	0.004 m ³
Size 4 = Eighth box	213 mm x 102 mm x 80 mm	0.002 m ³

Plastic boxes

Size 8 = Medium	260mm x 184mm x 108mm	0.005 m ³
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4. STATEMENT OF POTENTIAL

4.1 Stratigraphic Potential

- 4.1.1 The Fieldwork Event Aims for Bower Road, and the Landscape Zone Priorities for the watching briefs, are set out in section 2 of this report, above. The present section reviews the success of the fieldwork events and post-excavation assessment in providing stratigraphic data to address these aims and priorities so far, and their potential to support further analysis related to these aims.
- 4.1.2 The Landscape Zone Priorities for CTRL Project Area 440 (URS 1999b) focused on spatial organisation of the landscape and changes through time in the period of later agriculturalists (2000-100 BC), and on evidence for ritual and ceremonial use of the landscape, specifically burial practices in the Roman and post-Roman periods. The Fieldwork Event Aims for Bower Road comprised the recording of features and deposits uncovered during construction, including the retrieval of environmental and economic indicators. Where feasible, the fieldwork was to be orientated towards addressing the aims of the CTRL Research Strategy at Landscape Zone level.
- 4.1.3 The site of Bower Road is located in an area of modern agricultural land where few historical features were believed to have survived. In the event, the watching brief fieldwork revealed archaeological remains of a scale and period that had not been entirely anticipated. Thus, while the potential of the site to address its original research priorities is limited, it is apparent that there is considerable potential to address CTRL research aims for the period 'Towns and their rural landscapes' sub-period (i) 100 BC - AD 410. The potential for the study of the Roman landscape within the 440 project area was alluded to in Appendix B1 Annex 1 of the WSI (URS 1999b), where it was stated that change or continuity in the landscape with the imposition of the Roman administration was a key theme for the area. This has accordingly been incorporated in the statements of potential that follow, based on the period research objectives set out in the CTRL Archaeological Research Strategy (URS 1999b).

Area 440 Landscape Zone Priority 1: Spatial organisation of the landscape and changes through time during the period of the later agriculturalists (2000-100 BC)

- 4.1.4 No stratigraphic evidence relating to this period was recovered at Bower Road and there is therefore no potential to address this research aim.

Area 440 Landscape Zone Priority 2: Ritual and ceremonial use of the landscape, especially Roman and post-Roman burial practices

- 4.1.5 Bower Road has produced evidence for Roman burial practice in the form of cremation 107, but also more ambiguous evidence for other forms of ritual involving the deposition of human remains in pits and possibly in ditches, and in association with both animal bone and other objects. There is thus potential for the data from this site to be included in a broader study of Roman ritual and burial practice at a wider landscape level within the CTRL project. Pit 242 provides rare evidence for possible ritual activity during the late Roman period.

Additional research aims derived from CTRL archaeological research strategy objectives for the period 'Towns and their rural landscapes (100 BC - AD 410)'

How were settlements and rural landscapes organised and how did they function?

- 4.1.6 Bower Road has produced evidence for part of what is likely to have been a substantial rural settlement of the 2nd and 3rd centuries AD, which appears to have continued in use in the 4th century. This is of particular interest since the late Roman period is poorly understood in Kent; moreover, Bower Road seems to offer a striking contrast to the other CTRL sites in the vicinity, where activity seemed to cease in the early 2nd century (see section 1.2.4, above).
- 4.1.7 Despite the problems of truncation and redeposition that have been alluded to above (sections 3.1.21-23), the stratigraphic data obtained from the site are sufficient to support more detailed analysis of the types of structures present on the site and the sequence and chronology of site development. In conjunction with the finds and environmental data, this should allow a more detailed characterisation of the nature of this settlement and its economic base, as well as providing insights into the possible status and cultural affinities of its inhabitants.

4.2 Artefactual Potential

Late Iron Age and Roman pottery (Appendix 1.1)

- 4.2.1 The pottery assists in the dating and phasing of the various site features. Limited further analysis of the pottery in conjunction with other datable finds (for example Roman building material) and the stratigraphic data should help to refine the sequence and dating of occupation on the site.
- 4.2.2 The pottery from Bower Road has some potential to address research objectives of the CTRL project relating to the organisation of settlements, rural landscapes and changes over time: the small size of the assemblage does, however, have a limiting effect. Examination of the composition of pottery assemblages from different parts of the site may supply evidence for both specialised activities taking place in discrete areas and for the social status of the inhabitants. Preliminary examination of the pottery already suggests that the site was of lower status than Thurnham throughout its existence. It should be borne in mind, however, that the main building probably lay outside the excavated area. The small amount of pottery associated with the 19 postholes building (group 550) suggest that it was never lived in but acted as a barn or some other kind of ancillary farmyard building.
- 4.2.3 This pottery, studied in conjunction with other CTRL assemblages from the immediate area and beyond, has the potential to supply information on the changing pattern of pottery supply within an area of south-eastern Kent. This is of significance both to study of the rural economy and to understanding the nature of change following the Roman conquest. Virtually no significant pottery assemblages from this area have previously been published and this part of Kent appears to have had its own industries and significant quantities of wares traded in from East Sussex Ware production sources.

Post-Roman Pottery (Appendix 1.1)

- 4.2.4 All of this pottery was found in residual contexts, and no further work is required on this small assemblage. No conservation is required, and the material should be discarded.

Building Materials (Appendix 1.2)

- 4.2.5 The assemblage provides evidence for the sources and types of building materials used on or near the site in the Roman period. There is some potential for limited further analysis of the distribution of building material, which may help to clarify the nature of structures on the site and thus their status and economic function. Limited further research into the sources of fabrics used will help to identify sources and patterns of supply. The assemblage thus has some potential to contribute to CTRL research priorities concerning the organisation and functioning of rural settlements, and changes associated with the arrival of the Roman administration.

Fired Clay (Appendix 1.3)

- 4.2.6 The fired clay and daub offers no potential for further study, but as it provides evidence for domestic activity (loomweight fragments) and for building superstructure (wall render, mortar) it would merit reporting.

Flint (Appendix 2)

- 4.2.7 The worked flint offers little potential for further work on the assemblage itself, although an examination of spatial distribution may identify concentrations of material. The main potential of the flint lies in the contribution it can make to wider studies at Landscape Zone level, both for the period of hunter-foragers and for the period of early agriculturalists. Flint of Mesolithic to early Bronze Age date has been recovered from most sites in the vicinity of Bower Road, and these groups provide obvious comparators. Study of the sources of the flint would also be of value. These studies would contribute to CTRL research priorities relating to the location and range of human activity during the period of hunter-foragers, and the nature of economic lifeways and economic landscapes during the period of early agriculturalists.

Glass (Appendix 3)

- 4.2.8 The assemblage offers no potential for further analytical work in pursuit of the research aims of the project. However, its presence at the site is a good indicator of Romanised occupation of some status and the glass would merit reporting.

Metalwork (Appendix 4.1)

- 4.2.9 The potential of this assemblage is limited, both because of its small size and the type of objects represented. The nails and nail fragments do not require further specialist investigations. The other objects (14 items) are too fragmented to allow further identification. However, it is recommended that the distribution of metalwork on the site is analysed since it may provide more information concerning the nature of structures, buildings and secondary deposition. This would contribute to CTRL research aims relating to the organisation and function of settlements.

Coins (Appendix 4.2)

- 4.2.10 The only further potential of the assemblage to contribute to the CTRL research strategy lies in the possibility that the identification of seven of the coins might be refined by further consultation of published parallels. This would allow closer dating of the associated features and deposits.

Slag (Appendix 4.3)

- 4.2.11 There was no evidence for metalworking on site, therefore this small assemblage offers no potential for further analysis.

4.3 Environmental Potential

Human Remains (Appendix 5)

Cremations

- 4.3.1 All the cremated deposits, with the exception of 122 are very small and clearly none of them represent the entire remains of any one individual. Therefore they do not have any potential for further osteological analysis.
- 4.3.2 Detailed examination of the more substantial deposit of cremated bone (122) will allow further refinement of age and sex determination, and also possible identification of pathological conditions. Deposit 122 has been identified as an example of multiple burial. It was identified as an adult male, although at least one fragment is the bone of a subadult.
- 4.3.3 It is recommended that the animal bone associated with cremation 367 be identified to species if possible; the identification of animal bone within human cremations has implications for the study of burial practice of the period.

Unburnt disarticulated bone

- 4.3.4 The mandible was in reasonable condition. However, given that only one bone was present a decision was made to carry out full recording at the assessment stage. Therefore no further osteological work is recommended.

Ritual practice

- 4.3.5 The presence of human bone in various features at Bower Road may have significance for the understanding of Roman ritual practices. It is therefore recommended that this material is reported.

Animal Bone (Appendix 6)

- 4.3.6 The assemblage offers little potential for further zoo-archaeological analysis in pursuit of the project research aims, although the bird, fish and small mammal bone can contribute further information about the environment and economy if identified to species. The animal bone nevertheless provides information at a general level about the agricultural regime and diet of the occupants, and would be worth reporting in any final publication.

Macroscopic Plant Remains and Charcoal (Appendix 7)

- 4.3.7 Five rich samples of charred plant remains are recommended for full analysis, as they have the potential to provide information about cereal crops present at the site and the nature of processing activities being carried out. This will contribute to understanding of the organisation and function of the settlement and the way in which the local landscape was exploited. The results can also contribute to any wider study of agriculture at Landscape Zone level, as knowledge of Iron Age and Roman agricultural practice in Kent is very limited.
- 4.3.8 One sample produced mineralised material, which is very unusual for this period. The mineralised material came from pit 242, which is of considerable interest as a possible special deposit. The analysis of the mineralised remains should therefore add to the list of material associated with this deposit, and thus contribute to study of Roman ritual practice.
- 4.3.9 No further work is recommended for the wood charcoal.

Molluscs (Appendix 8)

- 4.3.10 The molluscs have little potential to provide palaeoenvironmental information on the site. The assemblages all contain shells from the colluvial sediments through which the archaeological features were cut, and it is likely that the majority of the shells of woodland molluscs had been re-worked from the colluvial sediments. It is recommended that a very brief summary of the results of the assessment be incorporated in any final report.

Oysters and other marine molluscs (Appendix 9)

- 4.3.11 This assemblage of oysters and marine molluscs offers no potential for further analysis.

4.4 Overall Potential

- 4.4.1 Bower Road offers good potential to address some of the research aims identified for the CTRL project, principally those concerned with 'Towns and their rural landscapes' 100 BC - AD 410.

Hunter-foragers (200,000-4500 BC) into early agriculturalists (4500-2000 BC)

- 4.4.2 The small assemblage of worked flint from the site is broadly of late Mesolithic to early Bronze Age date. No features of this date were found, and much of the flint was redeposited in the late Iron Age and Roman ditches; however, a group of 35 flints found in the area of the medieval/post-medieval sheep pens was in better condition and was thought likely to be close to its original point of deposition.

- 4.4.3 This material is indicative of activity in both research periods. Although there is no potential for further work on this assemblage, it will be of value in a wider Landscape Zone consideration of the location of hunter-forager activity, and in consideration of the landscape and lifeways of early agriculturalists. The flint derives from a number of sources, and study of flint sourcing will contribute to the study of the economic landscape of early agriculturalists.

- 4.4.4 It would be beneficial to consider the Mesolithic flint in conjunction with the Mesolithic flint and waterlogged environmental sequence at the nearby CTRL site of Church Lane/East of Station Rd. The Neolithic and early Bronze Age material should be compared with material of similar date from Church Lane/East of Station Rd, West of Blind Lane, to the east of Mersham (URL 1994, 1090) and at Little Stock Farm, and with the evidence from other areas of the CTRL route. This is discussed in more detail in the assessment report for the CTRL site of Eyhorne Street (URS 2001c).

Farming communities (2000-100 BC)

- 4.4.5 There was no evidence of this period at Bower Road. It is interesting to note that this is in contrast to nearby CTRL sites, where mid to late Bronze Age field systems were tentatively identified at Church Lane/East of Station Rd, at West of Blind Lane and at Boys Hall Balancing Pond; late Bronze Age structural features and a hearth were found at the nearby site at Little Stock Farm.

- 4.4.6 Although Bower Road can add nothing to our understanding of the mid to late Bronze Age landscape, the lack of evidence should be taken into account in consideration of this period in the region.

- 4.4.7 There is a significant lack of evidence of early to mid Iron Age activity in this area, and Bower Road conforms to the pattern observed on all neighbouring sites. It

should be taken into consideration in any synthetic overview of the apparent hiatus in occupation at this time.

Towns and their rural landscapes (100 BC - AD 410)

- 4.4.8 Evidence for late Iron Age occupation at Bower Road was very slight, and suggests that the site formed part of a more extensive field system at that time. At an intra-site level, it can thus offer no potential for study of the mid to late Iron Age, or of the Iron Age/Romano-British transitional period.
- 4.4.9 The very limited evidence from Bower Road can nevertheless be used in wider studies at Landscape Zone level. The close proximity of the six CTRL sites immediately east of Ashford (see section 1.3 above) offers potential for some reconstruction of the late Iron Age landscape and settlement hierarchy in this area. The very large roundhouse excavated at the CTRL site of Little Stock Farm less than 1 km to the east (URS 1999c) is valuable evidence for the form of late Iron Age settlement in the area. The presence of cremations at Boys Hall Balancing Pond, and further evidence from both CTRL and unrelated works in the vicinity of that site, suggests that another focus of late Iron Age occupation was located nearby (URS 2000a 1.3.2-4). This addresses CTRL research priorities relating to the organisation of the landscape at this time.
- 4.4.10 Following the Roman conquest, there appears to have been little immediate change in land use at Bower Road, and the area apparently continued to form part of a more extensive field system controlled from elsewhere. The results from Boys Hall Balancing Pond, West of Blind Lane and East of Station Road support the impression from Bower Road that late Iron Age field systems seem to have persisted through the 1st century AD with little apparent change. None of the CTRL sites in the area provided any evidence for where the centres of occupation lay in this period, and it is of interest to note that the late Iron Age settlement at Little Stock Farm was apparently abandoned, although the pottery evidence for this may not be conclusive. The potential of the Bower Road site for the immediate post-Conquest period therefore lies in its group value, for analysis as an element within a landscape unit that shows evidence for both continuity and possibly significant change. This will directly address CTRL research priorities relating to the effect of the Roman conquest and change in landscape organisation over time.
- 4.4.11 The nature of the evidence from Bower Road changes completely from the turn of the 1st/2nd century AD, when the site appears to have been subject to major development as a probable agricultural estate centre. This centre, perhaps focused on a farmstead villa outside the main watching brief area, seems to have persisted throughout the remainder of the Roman period, arguably into the later 4th century.
- 4.4.12 At an intra-site level, there is considerable potential for further analysis of the nature of this estate centre, to address CTRL research priorities relating to the organisation and function of settlements at this time. Good stratigraphic data and evidence from pottery, coins and glass should allow further refinement of the sequence and chronology of occupation, and the stratigraphic, finds and environmental evidence should be adequate to achieve a more detailed understanding of the nature of the structures on the site and of its economic base. There is some potential from the pottery and ceramic building material assemblages for analysis of trading networks in the area, and various elements of the finds assemblages can provide information regarding the status of the site's inhabitants.
- 4.4.13 The chronology of Bower Road makes the site of particular significance, since there is generally relatively little evidence for settlements and rural landscapes of the later Roman period in the area. The site can therefore make a valuable contribution to the

- Objective 4: How does the development of Bower Road and other nearby rural sites compare with the development of the 'small town' at Westhawk Farm? What common factors, if any, can be perceived in the growth and decline of the town and the rural sites? What is the connection between the town and the rural sites likely to have been, and is there evidence for this in the archaeological record?

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APPENDIX 1 - CERAMICS

1.1 Late Iron Age and Roman Pottery

by Malcolm Lyne

Introduction

1.1.1 Pottery assemblages were recovered during the watching brief at Bower Road. The overwhelming bulk of the material dates to the Roman period, with a very small quantity of medieval pottery of the 13th/14th centuries. The pottery was retrieved by both excavation and the sieving of environmental samples in the laboratory.

1.1.2 The recovery and assessment of the pottery was undertaken in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The pottery was recovered in order to assist in the dating and characterisation of activity at the site, and to provide economic information on the changing patterns of pottery supply in the area, with particular reference to the periods of later agriculturalists and the late Iron Age/Roman transition.

Methodology

1.1.3 In order to aid the establishment of a provisional dated occupation sequence for the site, all pottery assemblages were subjected to general sherd count, weighing and spot-dating. Fourteen of these assemblages were selected as being from contexts crucial for the dating of the various site phases and were further quantified by numbers of sherds and their weights per fabric. These key pottery groups account for 7.6% of the assemblages, 15.7% of the sherds and 16.2% of their total weight.

1.1.4 Fabrics were identified with the aid of a x8 magnification lens with built-in metric scale for determining the natures, forms, sizes and frequencies of inclusions. Finer fabrics were further examined using a x30 magnification pocket microscope with built-in artificial illumination source and all were classified using the Canterbury Archaeological Trust's coding where applicable (Macpherson-Grant et al 1995).

Quantification

1.1.5 The excavation yielded 4724 sherds (39,544 g) of mainly Late Iron Age and Roman pottery from 184 contexts: a further 260 sherds (909 g) were retrieved from the sieving of environmental samples. The numbers of sherds and their weights per context, together with assemblage spot-dates, are listed in Tables 1.1 and 1.2 below.

1.1.6 Table 1.3 gives the breakdown of the excavated pottery by period. This table highlights the small amounts of Late Iron Age pottery from the site, suggesting that the features belonging to this period within the excavated area were peripheral to the main (unexcavated) centre of activity. The considerably greater amounts of Early Roman pottery from the site follow a pattern similar to that at Thurnham further to the west, although Bower Road seems to display a marked fall off in the use of pottery during the early 3rd century. This decline in the quantities of pottery from the site starts earlier than at Thurnham but, as with that site, becomes much more marked during the period c.AD.270-400. Only one assemblage (from Pit 242) is likely to be later than c.AD.370. Direct comparisons with the Thurnham assemblages are made rather difficult by virtue of the fact that Bower Road did not produce the large amounts of pottery from the area stripping of occupation layers encountered at Thurnham. Most of the Bower Road pottery comes from pits.

postholes and sections across ditches. The impression is given that the excavated area was peripheral to the main centre of excavation; an impression re-inforced by the fact that the paucity and residual nature of most of the pottery from the posthole building suggests that it was never actually lived in.

- 1.1.7 Table 1.4 records the detailed breakdown of key excavated assemblages of pottery by forms, numbers of sherds and their weight per fabrics.

Provenance

Late Iron Age

- 1.1.8 Amounts of Late Iron Age pottery are very small and almost entirely lacking in diagnostic sherds. What little that there is comes from Ditch 176 (27 sherds, 120 gm.) and Postholes 212 and 576. Ditch 176 is certainly a Late Iron Age feature.
- 1.1.9 There are no Gallo-Belgic imports and the bulk of the sherds are either in sparse calcined flint tempered (with or without grog or sand) or grog-tempered 'Belgic' fabrics. An absence of rim or other diagnostic sherds precludes further comment.

c AD 43-80

- 1.1.10 The most significant feature of the immediately post-Conquest period is the ditch/sump complex 173. Fill contexts 469,470,471,476, 477 and 479 within the ditch produced 204 fresh-looking sherds (1779 g) and contexts 383,384,385,386 and 388 within the sump yielded 121 more. Cut 468 through the fills of Ditch 173 (Table 4) produced three successive assemblages dominated by 'Belgic' grog-tempered vessels in Fabric B2 (74%). The lowest fill assemblage from context 471 also included a sherd of South Gaulish Samian; indicating a post-Conquest date for the feature. The middle fill (context 470) assemblage included a large fresh flanged bowl sherd in sandy grey Canterbury Fabric R5 and of a form dated by Pollard to c.AD 50-80 (1988, fig.16-50). The upper fill assemblage is dominated by soft oxidised jar sherds in transitional 'Belgic' grog-tempered/Native Coarse Ware, which are unlikely to be earlier than Flavian in date. From this sequence we can infer that Ditch 173 was cut soon after the Roman Conquest and continued in use until some time during the Flavian period.
- 1.1.11 The successive sump fills yielded assemblages similarly dominated by 'Belgic' grog-tempered wares and made up largely of bead-rim jars. A grog-tempered copy of a Gallo-Belgic platter of CAM 23A form is also present (Thompson 1982, Form G1-5) as is another flanged bowl in sandy Fabric R5.
- 1.1.12 Ditch 183, the continuation of Ditch 173, produced further pre-Flavian assemblages from fill contexts 571 and 592. Amounts are very small (8 sherds, 96 g) but include drawable part-profiles from two further 'Belgic' bead-rim jars.

c AD 80/90-170/180

- 1.1.13 The bulk of the pottery from datable contexts belongs to this phase (54%) and includes large assemblages from Ditches 169 (1196 sherds) and 180 (140 sherds). Smaller assemblages come from Ditches 170 (72 sherds) and 178 (13 sherds).
- 1.1.14 The detailed quantification of the pottery from three successive fills in Cut 486 through Ditch 169 (Table 4) shows the continued significance of grog-tempered ware to the site. The lowest fill (489) has such wares making up 80% of all of the pottery, the middle fill (488) has 52% and the upper fill (487) has 76%. The Fabric B2.1 variant with pale siltstone grog seems to be considerably more significant than previously but it is not always easy to distinguish from Fabric B2 when heavily

soot-soaked. Imported wares include reeded-rim bowls, lids and jars in sandy grey Canterbury Fabric R5, flagons from the same source in buff-orange Fabric R6, biconical beakers in Upchurch Fabric R16, South Gaulish and Central Gaulish Samian cups and dishes and roughcast beakers in both Cologne Fabric R25 and Colchester/Sinzig Fabric R33. It is noticeable that Thameside greyware vessels only appear in the uppermost ditch fill assemblage and that Upchurch wares are nothing like as significant as they are in contemporary Thurnham assemblages: only 7% of the pottery from Ditch 169 comes from that source. An unusual Pulborough Samian Dr.27 cup fragment (c.AD.100-130) is present in the assemblage from context 488.

- 1.1.15 The post-built building (Group 550) and its surrounding ditch (181) may belong to this period but produced very little pottery. The various post-pits belonging to the structure yielded a total of 83 sherds (1213 g) of largely comminuted and clearly residual pottery: much of the sherd weight is made up of 4 fresh basal sherds from an indeterminate? Gillam 238 mortarium (838 g) from the surface of unexcavated posthole 535. Further fresher-looking sherds from the postholes are an East Sussex Ware jar rim (c.AD.180-270) from post-pit 539 and two Central Gaulish Samian Dr.37 bowl sherds from post-pit 543 (c.AD.120-160). The nine cuts through Ditch 181 enclosing the structure produced a further 55 sherds (431 g) of comminuted residual Iron Age to late 1st century pottery.
- 1.1.16 All that can be said for certain is that the building is later than c.AD.80/90 because it overlies Ditch 183. The 2nd to early 3rd century sherds from the post-pits might be indicative of a construction date around AD.200 during Phase 4A but could equally well be the result of major repairs to the building at about that time. Continuation of use into the Late Roman period is implied by a few 4th century scraps of pottery from Gully 182 draining the southern end of the building and small scraps of Fabric LR1.1 and Oxfordshire Red Colour-coat from the upper fills of postholes 444 and 577 respectively. The small amounts of pottery associated with the structure suggest that it was never lived in but acted as a barn or some other kind of ancillary farmyard building.
- c AD 180-270
- 1.1.17 The bulk of the pottery of this phase comes from the lower fills of Waterhole 372 (87 sherds, 1636 g), Ditch 171 (163 sherds, 879 g) and the three cremation pots (386 sherds, 2168 g).
- 1.1.18 The pottery from Waterhole 372 fill contexts 102, 103 etc. includes East Sussex Wares, large, fresh sherds from a BB2 'pie-dish' without decoration (Monaghan 1987, Form 5C4.2, c.AD.170-250) and a bead-rim dish of Monaghan Form 5F3.9 (1987, c.AD.170/190-210/230). A Gauloise 4 amphora rim is also present.
- 1.1.19 The pottery from Ditch 171 has much in common with that from the ditch around the post-built structure 550, in consisting very largely of abraded residual material. More contemporary sherds include fragments from jars in Native Coarse Ware Fabric R1, East Sussex Ware cooking-pots and BB2 'pie dishes' of Monaghan Form 5C4.2.
- 1.1.20 The three cremation pots 105, 106 and 273 comprise a large everted-rim jar in underfired brown R1 fabric (c.AD.170-300), containing two beakers in grey Upchurch fabric R16. Both of the beakers are unusual forms: pot 105 is a carinated bag-beaker with rouletted decoration and 106 a? pentice-beaker. All of the pots are heavily broken up.

c AD 270-300

- 1.1.21 The uppermost fill of Waterhole 372 (100, 215) produced 44 sherds (494 g) of pottery characterised by the presence of appreciable numbers of sherds from two straight-sided dishes and a cavetto-rim cooking-pot in Dorset BB1 Fabric R13. Vessels in this fabric are quite rare on most sites in Kent, but when they do occur they are usually late 3rd century forms and quite closely datable.

c AD 270-400

- 1.1.22 Small amounts of 270-400 dated pottery were present in the fills of Enclosure Ditch 171 and show that rubbish was still being deposited in it as late as the early 4th century. Further small amounts of c. AD 270-400 dated pottery came from the fills of Ditch 179, Drystone wall 738 and Pits 229, 727 and 731. By far the largest assemblage of 4th century pottery came from Pit 242 (128 sherds, 698 g) and includes a large grog-tempered beaded-and-flanged bowl sherd of Lyne Form 7A.12 (1994, c. AD.370-400+), similar forms in both Alice Holt/Farnham industry Fabric LR5 and? Preston kiln imitation Alice Holt Fabric LR5.1 and bowls of Young's Types C71 and C75 in Oxfordshire Red Colour-coat Fabric LR10 (1977, c.AD.300-400 and 325-400 respectively).
- 1.1.23 Very little pottery of 4th-century date came from the site but the presence of two pit assemblages and that from the drystone wall near the north-eastern edge of the excavated area suggests that a 4th-century focus of occupation lay in that direction.

Conservation

- 1.1.24 Further analysis of the pottery would not conflict with long-term storage: all of the material should be retained. The only conservation requirements apply to the three cremation pots, which would need to be reconstructed if they are to be drawn for publication.

Comparative material

- 1.1.25 The site is in an area of Kent where very little Late Iron Age and Roman pottery has been published: the only ceramic assemblages from the area quantified to modern standards (but without illustration) are the 1st century one from Harville villa ditch at Wye (Pollard 1988, 231-2) and the large late 4th-century rubbish-pit group also from Wye (Ibid.,243,Bradshaw 1972). Although hardly any pottery from the area has been adequately published, this author has worked on large unpublished but forthcoming assemblages from the small Roman town at Westhawk Farm and from Waterbrook Farm, Ashford (Lyne forthcoming a and b) as well as a large unpublished midden assemblage from the Harville villa (Lyne 1994, 857).
- 1.1.26 Further east in the Folkestone-Dover area, there are a much greater number of published and unpublished sites. Foremost amongst the published material are Willson's two pottery reports in Philp's volumes on the Dover excavations (1981,1989) and the rather out-dated but still useful pottery corpus in the five Richborough volumes (Bushe-Fox 1926,1928,1932,1949; Cunliffe 1968). The pottery assemblages from the five sites along the line of the Folkestone Transfer pipeline have been written up by this author (Lyne forthcoming c) and there are large unpublished Late Iron Age and Roman pottery assemblages from Saltwood (Lyne forthcoming d), Dolland's Moor and Peene (Rady 1990).
- 1.1.27 What examination of the pottery from the Folkestone area indicates, however, is that those sites lay in a different area of pottery supply to those around Ashford during the Late Iron Age and earlier Roman periods. There are very few sherds in the soot-soaked sandy Folkestone area 'Belgic' fabrics B8 and B9 at Bower Road, Smeeth

and Westhawk Farm and hardly any vessels in the later Native Coarse Ware Fabric R1. Conversely, the very fine polished grog-tempered jars and bowls characteristic of later 2nd-century assemblages in the Ashford area are absent from the Folkestone sites. The post AD 270 assemblages from both areas are, however, very similar in breakdown.

Potential for further work

- 1.1.28 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 1.1.29 The pottery from Bower Road, Smeeth has some potential to address those research objectives of the CTRL project relating to the organisation of settlements, rural landscapes and changes within them over the course of time, in particular during the late Iron Age/Roman transitional period: the small sizes of the assemblages do, however, have a limiting effect on this potential.
- 1.1.30 Examination of the composition of pottery assemblages from different parts of the site may supply evidence for both specialised activities taking place in discrete areas and for the social status of the inhabitants. The small sizes of the assemblages severely limit the possibility of detecting areas of specialised activity but preliminary examination of the pottery already suggests that the site was of lower status than Thurnham throughout its existence. It should be borne in mind, however, that the main early Roman building probably lay outside the excavated area.
- 1.1.31 The assemblages quantified in detail in Table 4 are critical for the establishment of a securely dated sequence for activity at the site, and would therefore merit reporting in detail to support the chronology of the site. This recommendation also applies to the assemblages from Ditches 169 and 173, the few fresh sherds from the Building 550 postholes, the assemblages from the waterhole 372 and that from Pit 242. The main emphasis in the pottery report, other than the use of the assemblages to date the features from which they come, should be on the changing patterns of pottery supply during the Roman period, the types of vessel supplied by the various sources and comparison with similarly-dated assemblages from elsewhere in the region. This will address CTRL Landscape Zone Priorities relating to the nature of change at the late Iron Age/Roman transition, and supports the Fieldwork Event Aim priority for the collection of economic data. It may be possible to produce maps similar to those devised by Going to illustrate changing patterns of pottery supply to Chelmsford (1987, figs.52, 53,54,55,56,57,58 and 59).

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1.2 Ceramic Building Materials

by Susan Pringle

Introduction

- 1.2.1 Some 6.88 kg of ceramic building material was recovered during the watching brief at Bower Road.
- 1.2.2 The material was collected in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the project, which are set out in section 2 of the main report above. The material was recovered in order to provide evidence for the date and nature of occupation at the site, particularly at the late Iron Age/Roman transition, and to provide data relating to economic indicators at this time.

Methodology

- 1.2.3 The assemblage is small, and it was therefore decided to carry out a rapid assessment of it all. The material has been scanned for the assessment using a binocular microscope. Ceramic building material has been divided by form, and the fragments counted and weighed. The presence of distinctive fabric types has been noted, but no analytical work has been carried out on the fabrics from the site, as this task is more appropriately carried out at the next stage. Other information recorded includes the presence of combing, tally or signature marks, the presence or absence of glaze, and any complete dimensions. The data were entered on an Excel database.

Quantification

- 1.2.4 The total weight of ceramic building material scanned for the assessment is 6.880 kg. Fragment counts and weights by context are listed in table 1.7.

Roman building material

- 1.2.5 The Roman tile assemblage is small, with only 2.58 kg of securely identified tile. Types represented are brick, roof tile (tegula and imbrex) and box flue tile. The counts and weights for each Roman tile type are shown in table 1.5. The relatively small quantities of imbrex, compared to tegula, suggest that the assemblage does not represent primary destruction deposits of roofing tile, which might be expected in the vicinity of a villa, but is more likely to be material, possibly reused, which has been selected for purposes to do with agricultural or industrial use of the land. No complete tiles, or complete dimensions, were noted.
- 1.2.6 Although detailed fabric work has not been carried out on the material from Bower Road, the following distinctive fabrics were noted:
1. A hard, red fabric with some inclusions of medium quartz sand, and medium moulding sand. This is similar to the most abundant tile fabric from London (MoL fabric group 2815, including fabric 2452), much of which was probably produced at kilns in the Brockley Hill area on Watling Street to the north of London.
 2. A fairly soft, fine, orange fabric, with fine moulding sand; probably a Kentish variant of the London clay fabric group 2815.
 3. A yellowish-white or pale orange, clean fabric with moderate inclusions of colourless or rose quartz, similar to MoL fabric 2454 and CAT fabric 8. This is identical to tiles produced at the tile kiln at the Eccles villa north of Maidstone.

4. Red-firing clay marbled with silty streaks, sparse medium quartz sand, and rounded very coarse inclusions of paler silt/clay and dark red ?siltstone (< c.3mm); well-fired; some streaks are reduced to a bright grey. Fabric A.

5. A light orange fabric with common quartz sand and frequent red and cream clay inclusions, similar to MoL fabric 3238.

6. A range of orange-brown fabrics, with varying amounts of quartz and iron-rich inclusions; some have cream silt, calcareous clay or white calcareous inclusions. This group contains fabrics resembling MoL types 3018, 3028 and 3662.

Post-Roman building material

- 1.2.7 Post-Roman material from the site consists of up to four fragments, weighing 0.05 kg. The count and weight are shown in table 1.6. Three of the fragments are too small and abraded to be positively identified, but they are probably all peg or plain tile. The fabrics vary; the only certain example is in the fine, hard, pale orange, calcareous fabric common to north-east Kent (near MoL fabric 3201), but other fabrics are possibly present. None is glazed, nor were any complete tiles, or complete dimensions, noted. Dating of this tile type is difficult, as peg tiles have changed little since the 12th or 13th century, but the quantity of material is too small to be of significance.

Provenance

- 1.2.8 The provenance of the tile is set out in Table 1.7. To summarise, Roman tile comes from groups 169, 173, 178 and 180 (Phase 2); 171, 181, 182 and 550 (Phase 3), and medieval or post-medieval tile from group 170.

Conservation

- 1.2.9 Further analysis may be needed of the ceramic building material fabrics, and it should not be placed in long term storage until this has been ascertained.
- 1.2.10 There are no special requirements for long term storage, other than the use of robust packaging materials and a dry environment.
- 1.2.11 Retention/discard policy: at this stage, all the material should be retained pending final decisions about the scope of the CTRL post-excavation programme. In the future, if the tile is fully recorded and quantified by fabric and form, the majority can be discarded. The following should be retained: samples of all the fabrics; tiles with distinctive markings, such as combing, tally marks, signature marks or stamps; the quantity retained will probable be equivalent to between 10% and 20% of the assemblage.

Comparative material

- 1.2.12 The tile fabrics found on the site should be compared with the Canterbury Archaeological Trust's tile fabric type series, which could provide information on their sources and date ranges, and comparisons could be carried out with material from other Roman sites in north-east Kent. Some of the fabrics are similar to those used in London, which suggests that they have been transported some distance from their place of manufacture.

Potential for further work

- 1.2.13 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.

- 1.2.14 The tiles provide evidence for the sources and types of building materials used on or near the site in the Roman period. In terms of the CTRL research priorities, this is chiefly of interest as an economic indicator of trading patterns and sources of supply in the region during the Roman period. In this respect, there is some scope for comparative work with ceramic building material assemblages from other CTRL sites such as Thurnham Villa, although for the most part these have been small.
- 1.2.15 Limited further analysis of the distribution of ceramic building material and fired clay (see Appendix 1.3) in conjunction with stratigraphic data may reveal further information about the nature of structures on the site, and their status and economic function.

Recommended future work:

The following work should be undertaken in order to produce a publication report.

Task 1: Comparison of the fabrics with those in the Canterbury Archaeological Trust and Museum of London type series, and describe fabrics

Task 2: Quantify ceramic building material (sort material by fabric and form and count and weigh each group; computerise data). The assessment data will be used as far as possible, but the groups will need proper quantification. Select material for illustration

Task 3: Combine stratigraphic data with ceramic building materials and fired clay data, and analyse their use on the site.

Task 4: Write publication report – probably for incorporation into the main body of the publication text.

1.3 Fired clay

Introduction

- 1.3.1 A very small quantity of fired clay was recovered during the watching brief, in total 0.818 kg. The material was recovered in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the CTRL project, which are set out in section 2 of the main document, above. The material was collected in order to provide data relating to change at the Iron Age/Roman transition, and in order to illuminate economic activity at the site.

Methodology

- 1.3.2 As the assemblage is so small, it has been counted and weighed in its entirety, and the presence of features such as original surfaces, impressions or tempering has been noted.

Quantification

- 1.3.3 The fired clay assemblage consists of 204 small fragments with a total weight of 0.818 kg. Most of the fragments, which have an average weight of *c* 8 g, are too small and abraded to provide much information about their use. The fragment counts and weights are listed in table 1.8.
- 1.3.4 Fabric analysis has not been carried out, but the majority of the fired clay is fine-textured and orange, sometimes firing to cream or brown. The most common inclusion is quartz sand, although it is not possible to state whether this has been added or is naturally occurring in the clay beds. A few fragments contain fairly fine organic material, and it is thought that they might represent the very abraded remains of fired clay artefacts, such as loomweights (contexts 300, 304, 381, 470, 489); if so they are probably pre-/Roman in date. Few other impressions were noted, and although some of the material is reduced, there is nothing that strongly suggests the presence of debris from oven linings or kiln structures. One fragment contains shell; this may be a poorly fired pottery fabric (context 466). Mortar was noted on some pieces, which is suggestive of a Roman or post-Roman date (contexts 152, 469, 484, 564); the material in context 564 resembles a sandy mortar, and may be a mixture of clay, sand and lime used to render the surface of a wall. This is of particular interest since it is associated with context group 187, a structural beamslot on the south side of the posthole building.

Provenance

- 1.3.5 The fired clay appears to come from a range of features across the site, most of them probably of Roman date. The provenance of the fired clay is set out in table 1.8. It may be significant that the clay with organic inclusions, possibly abraded artefactual material, clusters in early to mid Roman ditch groups 169 and 173 (with the exception of a fragment found in ploughsoil).

Conservation

- 1.3.6 Further analysis may be needed of the fired clay fragments which may represent artefacts, and it should not be placed in long term storage until this has been ascertained.
- 1.3.7 The condition of the material is fairly abraded, but there is no risk to its preservation. There are no special requirements for long term storage, other than the use of robust packaging materials and a dry environment.

Comparative material

- 1.3.8 The fired clay assemblage has no potential for comparative study.

Potential for further work

- 1.3.9 The fired clay and daub has little potential for further study in pursuit of the CTRL research aims, but the presence of possible loomweights suggests that there may have been occupation, probably of a domestic nature, on or near the site. The presence of possible mortar in a feature related to the posthole building is of interest in terms of understanding the nature and form of this structure. Although there is no scope for further study of this assemblage, it has value as a possible indicator of building superstructure and of economic activity and would merit inclusion in any proposed report.

Table 1.1: Quantification and date of late Iron Age and Roman pottery assemblages (ARC 440/99 95+500-96+300)

Context	Count	Weight (g)	Period	Early Date	Late Date	Comment
100	4	38	RO	AD270	300	
101	2	16				
102	53	912	RO	AD130	200	
103	28	676	RO	AD200	270	
104	4	36	RO			Early Roman
105	57	140	RO	AD200	270	
106	50	234	RO	AD200	270	
117	12	48	LIA; RO			1st C
119	53	684	RO	AD70	150	
120	66	1188	RO	AD250	270	
121	11	124	RO	AD43	150	
124	3	42	RO	AD150	200	
125	5	24	RO	AD150	200	
126	4	24	RO			3rd C
130	4	12	RO	AD240	400	
138	2	4	RO			Early Roman
139	15	105	RO	AD70	150	
141	16	176	RO	3rdC	4thC	
142	3	12	RO			Early Roman
143	32	172	RO	AD100	150	
144	2	14	RO			Early Roman
145	5	28	RO	AD150	200	
146	5	26	RO			Early Roman
148	80	1009	RO	AD70	200	
150	6	26	RO	AD130	200	
152	95	862	RO	AD120	160	
159	4	4	RO	AD130		
				+		
162	3	60	RO	AD70	150	
200	36	180	MD	12th C	13thC	
209	5	24	LIA; RO	LIA	AD100	
213	6	36	LIA			
214	46	468	RO	AD200	270	
215	40	456	RO	AD270	300	
217	7	44	RO			Late 1stC
219	3	8	LIA; RO	LIA	AD70	
230	3	56	RO			4th C
231	16	156	RO	AD50	100+	
234	2	78	RO	AD70	150	
236	2	34	RO	AD70	150	
239	15	132	RO	AD170	250	
240	2	14	LIA; RO	LIA	AD70	
243	128	698	RO			4th C
244	17	112	RO	AD130	200	
245	11	54	RO	AD100	150	
246	26	116	RO	AD100	150	
250	38	414	RO	AD270	400	
260	14	72	RO			Early Roman
262	33	107	RO			Early Roman
272	4	16	RO			Early Roman
273	279	1794	RO	AD200	270	
276	3	46	RO	AD130	160	
277	22	554	RO	AD100	150	
280	5	24	RO	AD100	150	
288	2	24	RO			Early Roman
290	11	70	RO	AD70	200	

Context	Count	Weight (g)	Period	Early Date	Late Date	Comment
293	1	10	LIA; RO	LIA	AD70	
294	5	12	RO			Early Roman
300	26	242	RO	AD70	150	
301	566	1960	RO	AD100	200	
304	7	50	RO	AD170	250	
305	12	98	RO	AD43	70	
306	8	120	RO			Early Roman
307	20	90	RO			Early Roman
311	5	130	RO	AD270	400	
313	16	80	RO	AD150	230	
324	22	120	RO	AD43	100	
327	4	50	RO			Late 1st C
328	8	86	RO			Early Roman
331	2	20	RO			Early Roman
337	8	12	RO	AD200	270	
338	17	114	RO			Early Roman
349	30	86	RO	AD200	270	
352	13	118	RO	AD200	270	
367	102	876	RO	AD100	150	
369	11	128	MD			
371	139	1556	RO	AD150	200	
376	7	144	RO			Early Roman
380	16	59	LIA; RO	LIA	AD70	
381	121	784				Miscellaneous (mixed)
383	30	326	RO	AD43	70	
384	32	430	LIA; RO	LIA	AD70	
385	12	158	LIA; RO	LIA	AD70	
386	35	276	LIA; RO	LIA	AD70	
388	12	150	RO			Early Roman
401	1	12	RO			Early Roman
403	10	18	RO			Early Roman
409	2	16	RO	AD43	150	
410	1	12	RO			Early Roman
417	2	6	RO			Early Roman
418	2	6	RO			Early Roman
421	2	10	RO			Early Roman
424	3	10	RO			Early Roman
429	39	414	RO			2nd C
432	1	12	MD			
435	6	36	RO	AD240	400	
439	1	4	RO			
441	39	104	RO	AD70	100	
443	1	18	RO			
446	11	72	RO	AD270	400	
455	17	88	MD			
457	3	30	RO			4th C
458	28	136	RO			2nd C+
459	53	334	MD			
462	101	616	RO	AD200	270	
463	11	47	RO	AD200	270	
464	3	3	RO			Early Roman
466	27	124	RO; MD	AD270	MD	
469	56	345	RO	AD43	70	
470	36	354	RO	AD43	70	
471	69	750	RO	AD43	70	
473	1	8	RO			Early Roman
476	3	10	RO			Early Roman
477	13	84	LIA; RO	LIA	AD70	
479	27	136	RO	AD43	70+	
481	46	116	RO			

Context	Count	Weight (g)	Period	Early Date	Late Date	Comment
482	13	92	RO			Early Roman
484	14	98	RO	AD240	400	
487	225	1759	RO			
488	159	1556	RO	AD70	150	
489	28	638	RO	AD70	150	
492	4	74	LIA			
493	6	62	RO	AD70	150	
496	7	52	LIA; RO	LIA	AD100	
501	12	118	RO			3rd C+
502	169	1084	RO; MD	4thC	Médiéval	
504	19	112	RO	AD270	400	
506	13	132	RO	AD270	350	
508	18	32	RO	AD270	400	
510	11	28	RO	AD270	400	
511	73	538	LIA; MD			
514	5	44	LIA; RO	LIA	AD70	
519	7	28	RO	AD130	270	
521	24	62				
528	2	248	RO	AD80	150	
530	1	4	RO	AD70	150	
536	4	838	RO			2nd C
538	2	1	RO			
540	1	10	RO	AD200	270	
544	19	228	RO	AD120	200	
549	202	3023	RO	AD130	200	
552	2	16	RO			
555	6	22	RO	AD43	70	
557	9	72	RO	AD70	150	
559	4	16	LIA; RO	LIA	AD70	
561	1	10	LIA			
563	2	12	RO			Late 1st C
569	9	40	RO			
571	3	42	RO	AD43	70	
573	36	131	RO	AD43	200	
575	8	94	RO	AD43	70	
581	7	58	LIA			
584	9	54	RO	AD120	200	
585	3	26	RO	AD120	200	
592	5	54	RO	AD43	70	
637	2	10	RO			
656	5	80	MD			
660	1	6	RO			Early Roman
673	4	6	RO			
687	10	70	RO			Early Roman
691	1	2	RO			Early Roman
695	10	46	RO	AD120	200	
697	1	2	RO	AD120	200	
701	1	14	RO			
705	75	788	RO	AD130	200	
707	19	380	RO	AD100	AD200+	
708	5	44	RO			Early Roman
712	3	20	RO			Early Roman
714	2	28	RO			Early Roman
717	23	46	LIA			
725	9	64	RO			4th C
732	6	92	RO	AD270	400	
734	5	114	RO			
736	2	14	RO			2nd C
739	2	26	RO			
740	13	90	RO	AD270	400	

Context	Count	Weight (g)	Period	Early Date	Late Date	Comment
751	2	26	RO	AD200	270	
872	3	34	MD			
889	13	178	RO	AD70	150	
890	7	278	RO	AD70	150	
891	12	346	RO	AD70	150	
892	2	28	RO			Early Roman
Totals	4724	39544				

Table 1.2: Quantification of Roman pottery recovered during sieving

Context	Count	Weight (g)	Period	Early Date	Late Date	Comment
102	5	12	RO	AD130	200	
103	15	54	RO	AD200	270	
104	1	4	RO			Early Roman
124	7	28	RO	AD150	200	
125	5	26	RO	AD150	200	
126	6	12	RO	AD200	300	
148	9	14	RO	AD70	200	
159	3	1	RO	AD130	200	
162	15	64	RO	AD70	150	
215	32	96	RO	AD270	300	
243	3	6	RO			4thC
250	13	54	RO	AD270	400	
338	1	4	RO			Early Roman
367	73	100	RO	AD100	150	
418	5	10	RO			Early Roman
508	29	66	RO	AD270	400	
554	3	4	RO			Early Roman
557	1	2	RO	AD70	150	
564	2	4	RO			Early Roman
891	32	348	RO	AD70	150	
Totals	260	909				

Table 1.3: Summary of late Iron Age and Roman pottery by phase

Phase	Main locations	Spot Date	No of Contexts	Count	Weight g
Phase 1	Ditch 176	Late Iron Age	5	41	224
Phase 2	Ditch+Sump 173, ditch 183	AD43-80	23	385	3492
Phase 3	Ditches 169, 742, Building 550, Slot 151, Pit 886	AD80-180	54	2063	18935
Phase 4A	Ditch 171, Waterhole 372	AD180-270	21	942	8235
Phase 4B	Top of Waterhole 372	AD270-300	2	44	494
Phase 4B/C	Pits 242, 727, 731	AD 270-400	19	331	2706
Misc. Roman			47	229	2888
Medieval, post-med + u/s			13	689	2570
Totals			184	4724	39544

Table 1. 4: Excavated key Iron Age and Roman pottery assemblages from Bower Road

Context	Count	Weight	Period	Early Date	Late Date	Comments
492. Fill of ditch 491, sub-group 176						
	1		2 LIA	LIA	0	LIA.B4
	1		52 LIA; RO	75BC	AD100+	B2 Closed
	2		20 LIA	LIA	0	B9.3 Bead-rim jar
493. Fill of ditch 491, sub-group 176						
	3		54 LIA; RO	LIA	AD100+	B2.Jar
	2		4 RO	AD70	175	R5 Reeded rim bowl
	2		4 RO	AD43	60	R16 217.1 Beaker
471. Lower fill of ditch 468, sub-group 173						
	40		434 LIA; RO	0	70	B2 Black
	27		268 LIA; RO	0	70	B2 Oxidised
	5		46			B2.1
	1		2 RO	AD43	110	R42
470. Fill of ditch 468, sub-group 173						
	34		354 RO	AD43	70	B2 Black
	1		28 RO	AD43	70	R5 Flanged bowl
469. Top fill of ditch 468, sub-group 173						
	17		108 LIA; RO	LIA	AD100+	B2 Black combed jar sherds
	1		8			B2.1
	34		228 RO	AD70	100+	B2/R1 Transitional jar
489. Primary fill of ditch 486, sub-group 169						
	1		4 EIA			Sparse calc. Flint: Early Iron Age
	14		326 LIA; RO	LIA	AD100+	B2 Black
	1		6			B2 Oxidised
	7		216 LIA; RO	LIA	AD100+	B2.1.Black
	1		6			B2.1.Oxidised
	2		50 RO	AD50	175	R5.Reeded rim bowl
	3		22 RO	AD50	175	R5.Reeded rim bowl + lid
	1		8 RO	AD43	250	R16
488. Secondary fill of ditch 486, sub-group 169						
	28		472 RO	AD50	150	B2 Black
	6		48			B2 Oxidised
	8		232 RO	AD70	150	B2.1 Fl.Bowl
	17		222			B2.1 Jar
	9		98			B2.1 Oxidised jar
	16		108 RO	AD70	150	R5.Jar, lid
	20		140 RO	AD70	180	R6.Flagon
	13		38 RO	AD50	130	R16.Biconical
	1		2 RO	AD130	200	R25.Roughcast beaker
	4		4 RO	AD130	200	R33.Beaker
	1		8 RO	AD70	110	R42. ?DR.42 Platter
	1		14 RO	AD100	130	R46.1 Pulborough Samian, Dr.27 Worn
	6		12			R71
	14		12			Fired clay
487. Top fill of ditch 486, sub-group 169						
	113		850 RO	AD70	180	B2 Black
	6		58			B2 Oxidised
	38		472 RO	AD70	150	B2.1.Black

Context	Count	Weight	Period	Early Date	Late Date	Comments
	8	144	RO	AD70	150	B2.1.Oxidised inc combed
	7	50	RO	AD70	175	R5
	2	6				R6
	10	36				R16
	2	3				R17.Flagon
	2	5	RO	AD130	200	R33.Roughcast beaker
	1	1	RO	AD70	110	R42.DR.36
	1	50	RO	AD120	200	R43.DR.33
	1	6				R Flagon
	1	12				R71. Flagon
	16	80	RO	AD150	300	R73.3H5-2 Jar
	2	6				RX
	7	10	LIA: RO	LIA	AD70	BER15
	3	12				Fired clay
	1	16				Tile
573. Fill of ditch 572, sub-group 181						
	2	18	RO	AD43	100+	B2
	22	98				B2.1 inc furrowed
	2	2	LIA: RO	LIA	AD100	B8.Pellets
	1	2	RO	AD70	175	R5.
	1	2	RO	AD50	130	R16 Biconical
	1	1				R17
	1	2	RO	AD43	110	R42. DR.27
	2	2	LIA: RO	LIA	AD70	BER15
	4	4				Fired clay
521. Fill of posthole 520 in aisled building sub-group 550						
	1	2	LIA			LIA.B4
	11	34	RO	AD70	150	B2
	1	2				B2.1
	1	2	RO	AD70	100	B2/R1
	3	16	RO	AD50	80	B5
	1	2	RO	AD50	180	R6
	1	1				R16
	3	3				RX
464. Lowest fill of ditch 461, sub-group 171						
	1	2	LIA: RO	LIA	AD100	B2 Black
	2	1				R16.
463. Secondary fill of ditch 461, sub-group 171						
	8	42	LIA: RO	LIA	AD100	B2 with some vesicles
	1	2	LIA: RO	LIA	AD100+	B2 Black
	1	1	LIA: RO	LIA	AD100	B9?
	1	2				Fired clay pellet
462. Upper fill of ditch 461, sub-group 171						
	23	274	LIA: RO	LIA	AD100	B2 with some vesicles
	4	82	LIA: RO	LIA	AD100+	B2 Black
	1	8				B3
	12	38	RO	AD43	100	BER11.Beaker
	12	69	RO	AD170	300	R1.
	4	20	RO	AD70	200	R9.Flagon
	3	18	RO	AD200	270	R14.Pic dish
	11	13				R16. Closed

Context	Count	Weight	Period	Early Date	Late Date	Comments
	10		18 RO	AD70	130	R16.Beaker
	5		12 RO	AD43	80	R17.Butt-beaker
	1		4			R50.Amphora
	10		22			R73.Closed
	10		30			RX.V.Abraded
	3		8			Fired clay
262. Single fill of ditch 261, sub-group 179						
	2		16 LIA; RO	LIA	AD100	B2.Black
	9		38			B2.1.
	1		1 LIA; RO	LIA	AD100	B8
	2		12 RO	AD170	300	R1
	3		6 RO	AD70	200	R6
	2		8			R16
	1		2			R17
	1		4			R50.Amphora
	1		2			R75.Closed
	1		6 RO			RX.Str-sided dish: 4thC
	10		12			Fired clay

Table 1.5: Counts and weights for each Roman tile type (securely identified material only)

Tile type	Count	Weight (g)
Brick	18	3750
Tegula	18	1775
Imbrex	1	30
Flue tile	3	340
Tile	32	620
Total	72	6515

Table 1.6: Post-Roman material by count and weight

Context	Count	Weight (gm)	Type	Comments
53	1	20	peg tile	Calc fabric nr 3201, but slightly siltier, with sparse coarse moulding sand
457	2	20	peg?	Nr 2587, but more frequent iron-rich incls. and higher fired, reduced areas in matrix
458	1	10	peg?	Red fabric, slightly sandy - could be pot??
Total	4	50		

Table 1.7: Building materials from Bower Road ARC 440/99 95+900-96+300

Context	Count	Weight (gm)	Type	Period	Early date	Late date	Comments	Type of context
53	1	20	peg	MD; PM	AD 1050	1900	Calc fabric nr 3201, but slightly siltier, with sparse coarse moulding sand.	
102	1	370	brick	RO	AD43	400	Fabric A: white clay streaks present, similar fabric 3200.	Fill of waterhole 372
102	1	25	tile	RO	AD43	400	2815 - soft, orange and micaceous.	Fill of waterhole 372
102	2	10	f/c	?			Orange with fine black specks x 1; sandy lt orange-brown x 1; both abraded.	Fill of waterhole 372
103	1	50	tegula	RO	AD43	400	2815	Fill of waterhole 372
103	2	25	tile	RO	AD43	400	Fabric A x 1; orange with silt & iron incls. v.fine qtz x 1	Fill of waterhole 372
120	1	60	brick	RO	AD43	400	sandy - 3004 nr 3028?	
141	2	420	tegula	RO	AD43	400	Conjoin; fab nr 3238, but iron-rich.	Fill of ditch 140
141	1	20	tile	RO	AD43	400	Orange version of 2454.	Fill of ditch 140
152	9	55	f/c	?			Fine, light orange clay x 7; lt brown with coarse sand x 2 (1 with mortar attached or mixed in).	
214	1	40	tile	RO	AD43	400	Fabric A - brick or	

Context	Count	Weight (gm)	Type	Period	Early date	Late date	Comments	Type of context
215	3	10	f/c	?			tegulaula. Fine orange x 2; sandy x 1	
231	1	10	tile	?			Sandy orange, nr 2815.	
239	1	50	tegula	RO	AD43	400	Orange silty, irony, blocky fabric nr 3226.	
239	2	10	tile	?			Fabric A - scraps.	
243	1	100	tegula	RO	AD43	400	Fine sandy, iron- rich, brownish-red ?silty lumps, reduced core.	Upper fill of pit 242
243	1	10	f/c	?			Sandy lt brown daub - abraded.	Upper fill of pit 242
245	1	35	tile	RO	AD43	400	Fabric A, tegula or brick.	Group 170, primary fill of ditch 249
246	1	5	tile?	?			Prob abraded cbm, fabric nr 3238.	Group 170, upper fill of ditch cut 249
250	1	10	f/c	?			Very sandy fired clay or daub, abraded surfaces.	Lower fill of pit 242
250	1	20	tile	RO	AD43	400	Flat form, ?tegula or ?brick. Orange, fine sandy, some silt, nr 3238.	Lower fill of pit 242
250	1	15	tile?	?			Sandy iron-rich brown fabric, either tile or very hard daub. I flat surface.	Lower fill of pit 242
260	1	5	tile	RO	AD43	400	2815 - abraded brick or tegulaula	Group 178, upper fill of ditch cut 258
262	1	5	f/c	?			sandy daub?	
267	4	1300	brick	RO	AD43	400	2815 and fabric A.	
293	1	3	f/c	?			Pale orange and cream, fine textured, abraded.	Group 180, fill of ditch (=287)
293	1	5	tile?	?			Orange, very sandy; decayed tile or daub. Abraded.	Group 180, fill of ditch (=287)
294	2	20	tile	RO	AD43	400	Nr 3238, no surfaces.	Group 180, fill of ditch (=288)
300	5	25	f/c	?			Some fine, some sandy, 1 with organics.	
301	3	20	f/c	?			Abraded sandy fabric.	
304	14	135	f/c	?			Orange brown clay or daub, mixed with organics - dung? 2 have smoothed flattish surfaces.	
305	3	10	tile?	?			Tile or v hard f/c; mixed red and white clays, and coarse dk rose qtz.	Group 169, fill of ditch
306	1	10	tile?	?			Tile or v hard f/c; mixed red and white clays, and coarse dk	Group 170, fill of ditch

Context	Count	Weight (gm)	Type	Period	Early date	Late date	Comments	Type of context
367	3	240	brick	RO	AD43	400	rose qtz. 2815, fine sandy orange.	Group 169, upper fill of ditch 368
367	2	110	tile	RO	AD43	400	1 is prob brick.	Group 169, upper fill of ditch 368
367	10	30	f/c	?			Fine, lt orange clay; 1 or 2 frags are smoothed.	Group 169, upper fill of ditch 368
371	1	100	brick	RO	AD43	400	Fabric A, 36mm thick.	Group 180, upper fill of ditch 370
371	1	45	tegula	RO	AD43	400	2815 fabric nr 2459; sooted.	Group 180, upper fill of ditch 370
371	7	90	tile	RO	AD43	400	2815, and fine orange sandy version of 2815; fabric A nr 3019 x 4; all scraps.	Group 180, upper fill of ditch 370
371	1	20	tegula	RO	AD43	400	2815	Group 180, upper fill of ditch 370
381	3	255	brick	RO	AD43	400	Misc fabrics, all orange with silt and iron incls.	Subsoil
381	1	5	tile	?				Subsoil
381	1	10	f/c	?			Lt brown, lot of fine sand & some organics - daub or clay? Burnt black.	Subsoil
383	3	2	f/c	?			Crumbs of sandy orange clay	
386	2	10	f/c	?			Streaked red and white clays, v.coarse dk rose qtz.	
416	1	20	f/c	?			Fine lt orange clay (part reduced) - a groove could be a wattle mark, but uncertain.	
435	2	20	f/c	?			Fine very sandy clay - light orange.	
441	1	5	f/c	?			Fine very sandy clay - light orange.	
455	1	5	tile	?			2815 orange type	
457	2	20	peg?	MD; PM	AD10 50	1900	Nr 2587, but more frequent iron-rich incls, and higher fired, reduced areas in matrix.	Fill of linear ditch 456
458	1	10	peg?	MD; PM	AD10 50	1900	Red fabric, slightly sandy - could be pot??	
462	5	635	tegula	RO	AD43	400	Nr 3662, less sandy version	Group 171, fill of ditch 461
462	1	30	imbre x	RO	AD43	400	Nr 3662, less sandy version	Group 171, fill of ditch 461
462	1	5	tile	RO	AD43	400	Nr 3662, less sandy version	Group 171, fill of ditch

Context	Count	Weight (gm)	Type	Period	Early date	Late date	Comments	Type of context
								461
462	6	20	f/c	?			Very sandy lt brown clay - abraded.	Group 171, fill of ditch 461
466	1	5	f/c?	?			Orange surface, black core - contains shell so may be pottery.	
469	6	15	f/c	RO?			Crumbs, some look mortared.	
470	18	25	f/c	?			v fine lt orange clay x 4; brown with organics x 14.	
471	27	25	f/c	?			Various fabrics - all tiny scraps.	Group 173, fill of ditch 468
471	2	10	tile?	?			Conjoin. Very burnt tile?	Group 173, fill of ditch 468
484	4	25	f/c	?			Very sandy lt brown: abraded, 1 ?mortared.	
487	1	20	brick	RO	AD43	400	Chip; red fabric nr 3028.	Group 169, fill of ditch 486
487	7	20	f/c	?			Mostly pale pinkish-mauve calcareous clay; 1 or 2 could be scraps of object.	Group 169, fill of ditch 486
487	1	35	tile	RO	AD43	400	3238	Group 169, fill of ditch 486
487	1	5	tile	RO	AD43	400	v abraded, fabric nr 3018.	Group 169, fill of ditch 486
488	26	65	f/c	?			Small scraps, orange fine or sandy.	
489	10	25	f/c	?			Orange fine clay abraded; 1 with organics could be small part object??	
504	2	25	tile	RO	AD43	400	Nr 3238 flake x 1; sandy orange iron-rich x 1.	Group 181, fill of ditch 503
506	1	215	brick	RO	AD43	400	37mm thick.	Group 182, fill of ditch 505
508	4	15	f/c	?			3 small abraded; 1 has surfaces ?form.	
510	1	10	tile	RO	AD43	400	2815, v.abraded.	Group 171, fill of ditch 509
515	4	10	f/c	?			Abraded crumbs.	
549	1	340	brick	RO	AD43	400	Fabric 2454; 50mm thick. Part small clay blob on top surface - accident or tman?	Group 175, fill of ditch 340
549	3	125	tegula	RO	AD43	400	Fabrics 2815 (incl finer sandy version) and ?3238.	Group 175, fill of ditch 340

Context	Count	Weight (gm)	Type	Period	Early date	Late date	Comments	Type of context
564	13	45	f/c?	?			Abraded brown sandy bits - some look nr mortar - natural calc clay or daub/cob??	
585	1	80	tile	RO	AD43	400	Fine sandy orange-red fabric; brick or tegula, abraded.	Group 550, fill of post-hole 517
645	1	1	f/c	?			Crumb of fine, sandy orange clay.	
695	6	75	f/c?	?			2 conjoin: fine, hard-fired clay or rather soft tile, abraded.	Group 742, fill of ditch 696
695	1	10	tile?	RO	AD43	400	Lt orange fabric, frequent v coarse red iron-rich incls and sparse v.coarse qtz.	Group 742, fill of ditch 696
707	3	340	flue	RO	AD43	400	Fabric 2452, knife-scored lattice keying; 1 plain face.	
707	1	770	brick	RO	AD43	400	3238 & Fabric A, 1 nr fabric A	
707	2	200	tegula	RO	AD43	400	Fine orange sandy.	
707	1	80	brick	RO	AD43	400	Fine orange sandy.	
707	1	40	tile	RO	AD43	400	Conjoin; 3238, flake from tegula or brick.	
717	6	5	f/c	?			Tiny crumbs	
888	2	120	?	?			Clay with iron deposit??	Fill of ditch 887
889	4	60	f/c	?			V.sandy x 1; iron rich sandy x 2; fine clay with surfaces x 1 - all abraded.	
891	1	2	f/c	?			Fine clay; v. abraded.	Primary fill of pit 886
891	2	130	tile?	RO ?			Sandy iron-rich fabric - very poorly fired and abraded brick?	Primary fill of pit 886
891	1	130	tegula	RO	AD43	400	3238	Primary fill of pit 886

Table 1.8: Fired Clay from Bower Road ARC 440/99 95+900-96+300

Context	Count	Weight (gm)	Type	Period	Comment	Type of context
102	2	10	f/c		Orange with fine black specks x 1; sandy lt orange-brown x 372 1; both abraded.	Fill of waterhole
152	9	55	f/c		Fine, light orange clay x 7; lt. brown with coarse sand x 2 (1 151 with mortar attached or mixed in).	Fill of beam slot
215	3	10	f/c		Fine orange x 2; sandy x 1	Upper fill of waterhole 372
243	1	10	f/c		Sandy lt brown daub - abraded.	Upper fill of pit 242

Context	Count	Weight (gm)	Type	Period	Comment	Type of context
250	1	10	f/c		Very sandy fired clay or daub, abraded surfaces.	Lower fill of pit 242
262	1	5	f/c		sandy daub?	Group 179, only fill of gully 261
293	1	3	f/c		Pale orange and cream, fine textured, abraded.	Group 180, fill of ditch (=287)
300	5	25	f/c		Some fine, some sandy, 1 with organics.	Group 169, fill of ditch 321
301	3	20	f/c		Abraded sandy fabric.	Group 169, fill of ditch 321
304	14	135	f/c		Orange brown clay or daub, mixed with organics - dung? 2 have smoothed flattish surfaces.	Group 169, fill of ditch
367	10	30	f/c		Fine, lt orange clay; 1 or 2 frags are smoothed.	Group 169, upper fill of ditch 368
381	1	10	f/c		Lt brown, lot of fine sand & some organics - daub or clay? Burnt black.	Subsoil
383	3	2	f/c		Crumbs of sandy orange clay	Group 173, upper fill
386	2	10	f/c		Streaked red and white clays, v. coarse dk rose qtz.	Group 176, fill
416	1	20	f/c		Fine lt orange clay (part reduced) - a groove could be a wattle mark, but uncertain.	
435	2	20	f/c		Fine very sandy clay - light orange.	Tree throw/animal burrow
441	1	5	f/c		Fine very sandy clay - light orange.	Group 171, fill of ditch
462	6	20	f/c		Very sandy lt brown clay - abraded.	Group 171, fill of ditch 461
466	1	5	f/c?		Orange surface, black core - contains shell so may be pottery.	Group 171, fill of ditch 465
469	6	15	f/c		Crumbs, some look mortared.	Group 173, fill of ditch 468
470	18	25	f/c		v fine lt orange clay x 4; brown with organics x 14.	Group 173, fill of ditch 468
471	27	25	f/c		Various fabrics - all tiny scraps.	Group 173, fill of ditch 468
484	4	25	f/c		Very sandy lt brown; abraded, 1 ?mortared.	Group 172, fill of ditch 483
487	7	20	f/c		Mostly pale pinkish-mauve calcareous clay; 1 or 2 could be scraps of object.	Group 169, fill of ditch 486
488	26	65	f/c		Small scraps, orange fine or sandy.	Group 169, fill of ditch 486
489	10	25	f/c		Orange fine clay abraded; 1 with organics could be small part object??	Group 169, fill of ditch 486
508	4	15	f/c		3 small abraded; 1 has surfaces ?form.	Group 171, fill of ditch 507
515	4	10	f/c		Abraded crumbs.	Group 171, fill of ditch 507
564	13	45	f/c?		Abraded brown sandy bits - some look nr mortar - natural calc clay or daub/cob??	Group 187, fill of ditch 433
645	1	1	f/c		Crumb of fine, sandy orange clay.	
695	6	75	f/c?		2 conjoin; fine, hard-fired clay or rather soft tile, abraded.	Fill of ditch 696

Context	Count	Weight (gm)	Type	Period	Comment	Type of context
717	6	5	f/c		Tiny crumbs	Group 176, fill of ditch 716
889	4	60	f/c		V. sandy x 1; iron rich sandy x 2; fine clay with surfaces x 1 - all abraded.	Latest fill of pit 886
891	1	2	f/c		Fine clay; v. abraded.	Primary fill of pit 886

APPENDIX 2 - LITHICS

2.1 Flint

By Hugo Lamdin-Whymark

Introduction

- 2.1.1 A total of 120 pieces of worked flint and 6 pieces of burnt unworked flint (weighing 95 g) were recovered during the watching brief at Bower Road. The flint was collected in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The flint was collected in order to provide evidence for the dating and nature of occupation in the landscape, especially during the period of later agriculturalists (2000-100 BC), and for ritual and ceremonial use of the landscape.

Methodology

- 2.1.2 In order that unworked and naturally occurring material could be excluded from further analysis, all of the flint was briefly scanned and recorded, with information regarding dating, technology and general condition being noted. The material was added to an Access database. All of the burnt flint was scanned and weighed; general comments on the condition of this material were also made.

Quantification

- 2.1.3 A total of 120 pieces of worked flint and 6 pieces of burnt unworked flint (weighing 95 g) was recovered. This material is summarised below in Tables 2.1 and 2.2.
- 2.1.4 The assemblage contains diagnostic retouched forms dating from the Mesolithic period through to the early Bronze Age. The limited size of the assemblage makes it difficult to speculate on the nature of early use of the site. However, the presence of numerous retouched artefacts (29 flints, 24% of assemblage) of both late Mesolithic and Neolithic date indicates that various activities were performed on site. Two fabricators may indicate the lighting of fires, whilst the scrapers and piercers may indicate hide preparation. This location may therefore have represented the site of a brief late Mesolithic camp and a Neolithic activity area or habitation site. Only three cores were present in the assemblage and cortical flakes appeared underrepresented, perhaps indicating little knapping was performed on site or alternatively that cores were prepared elsewhere, perhaps at the source of the raw material.

Provenance

- 2.1.5 The majority of the assemblage was redeposited in Iron Age and Roman ditches and discrete features.
- 2.1.6 A total of 35 flints were recovered from cleaning layers in the vicinity of the medieval or post-medieval sheep pens (finds reference numbers 455, 458 and 511); this material was in better condition than the majority of the assemblage and is unlikely to have moved far from its original place of deposition. The diagnostic artefacts and technology indicate that this flint dates from the late Mesolithic and Neolithic.

Condition

- 2.1.7 Much of the flint has suffered some post-depositional damage; cortication is mixed. Several pieces of burnt unworked flint were also recovered; this material was very

Context	Count	Period	Comments
573	1		1 flake
584	3		2 flakes (1 burnt), 1 end scraper
656	4		4 flakes
669	1		1 flake
712	1	Early Neolithic?	1 retouched flake
717	2		1 flake, 1 blade-like flake
736	1		1 flake
872	2		1 flake, 1 retouched flake
<i>Total</i>	<i>120</i>		

Table 2.2: Catalogue of burnt flint from Bower Road ARC 440/99 95+900-96+300

Context	Count	Material	Comments
148	1	10	
656	1	70	
673	2	5	
717	1	8	
819	1	2	

APPENDIX 3 - GLASS

3.1 Glass

by Rachel Tyson

Introduction

- 3.1.1 A total of 11 fragments of glass were recovered during the watching brief at Bower Road. The majority of the glass was recovered by hand excavation with only 1 item being retrieved from samples.
- 3.1.2 The recovery and study of the glass was undertaken in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The recovery of this material was undertaken to contribute towards establishing a dated occupation sequence for the site's development and determining the status, economic orientation and patterns of contact and trade of the site.

Methodology

- 3.1.3 As the assemblage is very small, all the glass was inspected and recorded. A basic archive catalogue was created. This will provide sufficient information for a full catalogue at the analysis stage, and the fragments themselves would not need to be inspected again.

Quantification

- 3.1.4 The assemblage comprises 1 window fragment, sherds from 4 vessels and 3 beads. Although a small sample for a Roman site, the glass ranges in date from the 1st to the 4th century, and a range of functional types are present. The glass is summarised in Table 3.1 and the range of Roman material is briefly described in the sub-sections that follow.
- 3.1.5 The dark blue vessel fragments, although small and of uncertain form, provide evidence for 1st to early 2nd century use of glass (Price and Cottam 1998, 15). The window glass fragment from context 103 is cylinder-blown, and therefore dates to the 3rd century or later (Price 1996, 396), while the conical beaker fragments are likely to be 4th century (Price and Cottam 1998, 129-31). The beaker and bead from late Roman pit 242 with possible ritual deposits are of particular interest, and it is not uncommon to find these beakers or beads in Roman burials (Price and Cottam 1998; Guido 1978).
- 3.1.6 The beads, particularly the yellowish bead from sample 23 (context 367, ditch group 169), are all long-lived types to which it is not possible to attribute a precise date. The context date is probably the most reliable for dating the blue wave-decorated bead (AD 270-400), although there are similar examples stratified in 2nd century AD deposits, and Anglo-Saxon examples (Guido 1978 & 1999). The yellowish bead could date anywhere between the 3rd century BC and the 2nd century AD; the type is found on Roman sites such as Silchester, but was generally more popular among native Britons (Guido 1978, 12). The blue-green bead is probably most likely to be late Roman – opaque green and blue beads were amongst the finds from graves of AD 310-80 at Lankhills, Winchester (Guido 1978, 95 and 220).
- 3.1.7 The fragments are consistent with the probable context dates of the glass, with the exception of the small rim fragment from context 477 (see below), which may be a little later than the date given by the context, although it is uncertain which form it is

from. The blue-green bead suggests a late Roman date for undated context 418, while a 1st or early 2nd century date is suggested by the fragment in undated context 381.

Conservation

- 3.1.8 This Roman glass is chemically stable and needs no conservation input. The glass is in good condition and will not have suffered from differential preservation on different parts of the site. The current packaging is adequate for long term storage. It is not normal practice to discard Roman glass.

Potential for further work

- 3.1.9 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 3.1.10 The glass from this site can contribute to the original Fieldwork Event aims by assisting with dating the occupation sequence for the site. However, the potential is limited to rather broad date ranges of a century or more.
- 3.1.11 Because of its small size, the potential of this assemblage to assist in establishing the status, economic orientation and pattern of contact and trade of the settlement is very limited. Nevertheless, the presence of glass (especially window and vessel glass) is an indicator of Romanised occupation of some status, either on the site or more probably somewhere in its vicinity. While no further analytical work on the assemblage itself is required, the significance of its presence should be taken into consideration in any further analysis of the site, and the material itself should be reported in order to support this.
- 3.1.12 A summary for publication could be produced using this assessment as a basis. The following work would be needed:
- An archive catalogue and report should be prepared of all of the glass, together with drawings of the fragments indicated in table 3.1.
 - A short note should be prepared for publication, indicating the range and character of the glass and presence of fragments in a possible ritual deposit. Drawings should be prepared of the fragments indicated below.

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Guido M, 1978 *The Glass Beads of the Prehistoric and Roman Periods in Britain and Ireland*. London, Research Report of the Society of Antiquaries of London **35**

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Price J, 1996 Glass, in R P J Jackson and T W Potter, *Excavations at Stonea, Cambridgeshire 1980-85*, British Museum Press, 379-409

Price J and Cottam S, 1998 *Romano-British Glass Vessels: A Handbook*, CBA Practical Handbook in Archaeology **14**

Table 3.1: Glass, context, dating and description

Context	Special number	Count	Type	Period	Date Range	Comments
103	106	1	window	RO	3rdC	Blue-green fragment, cylinder blown
250	28	1*	bead	RO	?2nd-4thC	Fragment of blue annular bead with yellow wave decoration
250	96	4*	vessel	RO	4thC	Rim fragments of greenish/colourless conical beaker with abraded bands
381	-	1	vessel	RO	1st-early 2ndC	Small fragment of dark blue glass with white trail
418	6	1*	bead	RO	?3rd-5thC	Tiny blue-green bead
477	-	1*	vessel	RO	?late 1st-2ndC	Small fragment of greenish-colourless rolled-in rim, possibly jar
557	3	1	vessel	RO	1st-early 2ndC	Tiny fragment of dark blue glass
-	Sample 23	1*	Bead	RO	?3rd/ 2ndC BC - 2ndC AD	Small yellowish annular bead

* Recommended for drawing

APPENDIX 4 - METALWORK

4.1 Metalwork

by Valerie Diez

Introduction

- 4.1.1 A total of 204 metal objects were recovered during watching brief fieldwork at Bower Road. All the items were retrieved by hand excavation.
- 4.1.2 The recovery and assessment of the metalwork was undertaken in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The retrieval of this assemblage was undertaken to assist with identifying status and the economic orientation of the settlement and to refine understanding of its development.

Methodology

- 4.1.3 In order to achieve a more accurate quantification of the research potential of the assemblage, all material was rapidly inspected and identified. This has allowed the identification of a large number of iron nails which require little further investigation.
- 4.1.4 All the metalwork was assessed by inspection of the X-radiographs (with inspection of the objects where appropriate).
- 4.1.5 It should be noted that in Table 4.1, under 'count', the number entered does not always correspond with the number of fragments. The assemblage contains a large number of nails or nail fragments, which have a tendency to fragment. The number of fragments present when the find was X-rayed is given in the description field. The total number of nails relates to the number of heads represented, providing a minimum number estimate.
- 4.1.6 Information about context description and date has been taken into consideration in the assessment that follows.

Quantification

- 4.1.7 All the metalwork is listed by context in Table 4.1.
- 4.1.8 The assemblage is dominated by structural items, mainly iron nails (70 items). Apart from nails and nail shanks, 14 objects were identified most of which are broken fragments of utilitarian, probably structural, ironwork and fittings. Except for one item, they were all broken and could not be attributed to a specific type. They comprise two strips with rivets or possible rivet holes (sf 76 and 90), one ring fragment (context 103) and one complete ring or collar (sf 4), two hooked objects (sf 1 and 124), some chain links (sf 77) and various unidentified fragments (6 items).
- 4.1.9 One object may belong to the category of personal equipment (context 464). It is a probable fitting fragment, oval shaped with a small knob on each side. It is possibly a mount or a strap end.
- 4.1.10 None of these items was datable.

Provenance

- 4.1.11 All the objects come from stratified contexts. They have been recovered from a range of features all over the site, although large numbers seem to derive from the fills of ditch group 169. The lack of evidence for earlier or later occupation at the site suggests that most of this material is likely to be of Roman date, although not in itself intrinsically datable.
- 4.1.12 The metalwork is in moderately good condition, so it may be assumed that the small size of the assemblage reflects the level of discard and is not the result of poor preservation on the site.

Conservation

- 4.1.13 The current packaging is adequate for long term storage. This assemblage does not require further conservation work.
- 4.1.14 It is not normal practice to discard Roman metalwork.

Comparative material

- 4.1.15 The limited potential of the assemblage provides no scope for comparative study.

Potential for further work

- 4.1.16 The objects themselves offer no potential for further analysis in support of the CTRL research aims.
- 4.1.17 The size of the assemblage and the type of items present supports the impression given by the pottery (Appendix 1.1, above), that the posthole building itself was a barn or ancillary building to a main focus of occupation elsewhere. Therefore, although the objects themselves have no intrinsic potential for further analysis, a closer study of the distribution of metalwork on the site (particularly nails) may help to clarify the nature of structures, buildings and secondary deposition on the site. This may be expected to contribute to CTRL research aims at Landscape Zone level concerning the nature of the Iron Age/Roman transition and changes in patterns of occupation and agricultural exploitation during the Roman period.

Bibliography

RFG & FRG, 1993 Roman Finds Group & Finds Research Group AD 700-1700, 1993 *The guidelines for the preparation of site archives and assessments for all finds other than fired clay vessels*

4.2 Assessment of the Roman coins

By Paul Booth

Introduction

- 4.2.1 Nine Roman coins were recovered during watching brief fieldwork at Bower Road.
- 4.2.2 All coins were retrieved by hand excavation.
- 4.2.3 The recovery and assessment of the coins was undertaken in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The principal purpose of recovering coins was to assist the establishment of a dated occupation sequence for all phases of the site's development.

Methodology

- 4.2.4 All the coins were X-rayed and then examined briefly. All the coins were in very poor condition, being very corroded, and identification was not possible without conservation work being undertaken. Therefore, the nine coins have been cleaned and stabilised in order to allow provisional identifications based on a quick scan. In some cases, close dating was still not possible after cleaning owing to the degree of wear or corrosion.

Quantification

- 4.2.5 Details of the date and context for each coin found at Bower Road are provided in Table 4.2.
- 4.2.6 The assemblage is too small for any comment on chronological trends, although the assessment results suggest a preponderance of 3rd and 4th century coins.

Provenance

- 4.2.7 Coins were recovered from all areas of the site. Ditch 174 contained one coin dated to the mid 1st century. Two coins of 2nd century date were recovered from ditches 170 and 742. Late 3rd and 4th century coins were retrieved from ditches 171, 181, 179 and from slot 151. A very late 4th-century coin was recovered from beamslot 187 within the posthole building.

Conservation

- 4.2.8 All coins are in poor condition. They have already been cleaned and stabilised for identification and no further work in conservation is required. It is not normal practice to discard Roman coins.

Comparative material

- 4.2.9 Due to the very small size of this assemblage and the poor condition of the coins, there is no potential for comparative studies.

Potential for further work

- 4.2.10 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Aims.
- 4.2.11 The only further potential of the assemblage to contribute to the CTRL research strategy lies in the possibility that the identification of seven of the coins might be

refined by further consultation of published parallels. This would allow closer dating of the associated features and deposits. The two other coins (SF 99 and 134) are in very poor condition and can not be identified with more precision.

4.3 Assessment of Iron Slag

by Valerie Diez

Introduction and methodology

- 4.3.1 A total of 19 pieces of slag (374g) were recovered by hand excavation during watching brief fieldwork at Bower Road.
- 4.3.2 The material was collected in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The material was collected in order to provide data relating to change in organisation of the landscape at the Iron Age/Roman transition, and economic and environmental indicators for the site during the same period.
- 4.3.3 The small assemblage was quantified and rapidly scanned.

Quantifications and provenance

- 4.3.4 The total weight of slag was 374g. The breakdown by context is given in table 4.3. The majority is iron slag.
- 4.3.5 Only small amounts of slag were present in each relevant context, suggesting that these represented scattered redeposited material rather than the remains of *in situ* metalworking. Twelve fragments were found in 386, fill of ditch cut 382 (group 173). Other slag fragments derive from ditch fills (group 169 and group 181), subsoil layer 381, and context 740, the backfill of a robbed wall. No other evidence of metalworking activity has been identified on the site.

Conservation

- 4.3.6 The slag, although unwashed, is stable and unlikely to be affected by any factors of preservation. Iron slag, being fayalitic, requires no special storage conditions. Decisions as to whether the assemblage can be discarded should await final decisions about the analysis and post-excavation stages of the CTRL projects.

Potential for further work

- 4.3.7 Due to the very small size of the assemblage and the absence of metalworking on site, the potential of this assemblage is very limited. The slags recovered in Bower Road seem unlikely to answer any of the Landscape Zone Priorities or Fieldwork Event aims. Therefore no further work is required.

Table 4.1: Details of metalwork by context

Context	Special number	Material	Count	Period	Simple name	Comments
101	103	Iron	1	?	Nail	Head
102		Iron	1	RO	Nail	Shank
102	105	Iron	1	RO	Nail	Shank
103		Copper alloy	1	RO	Ring fragment	
103		Iron	5	RO	Nails	shank fragments + 1 head
104		Iron	1	RO	Nail	Shank
106		Iron	3	RO	Nails	Shanks
126		Iron	1	RO	Nail	Head
126	107	Iron	1	RO	Nail	head (2 frags)
148	113	Iron	1	RO	Nail	Head
148	114	Iron	1	RO	Nail	Shank
152	108	Iron	1	RO	Nail	Shank
152	109	Iron	1	RO	Nail	Head
152	110	Iron	1	RO	Nail	Shank
152	111	Iron	1	RO	Nail	Shank
152	112	Iron	1	RO	Nail	Head
162		Iron	1	RO	Nail	Shank
214		Iron	4	RO	Nails	shank frags
215		Iron	1	RO	Nail	Head
215	90	Iron	1	RO	Sheet	square fragment, possibly with rivet through it?
243		Iron	1	RO	Nail	Shank
243	93	Iron	1	RO	Nail	Head
243	115	Iron	1	RO	Nail	Head
246		Iron	3	RO	Nails	2 heads + 1 shank
250	97	Iron	1	RO	Fragment	irregular shaped fragment
250	98	Iron	1	RO	Fragments	small irregular shaped fragments, very corroded
250	116	Iron	1	RO	Nail	Shank
250	117	Iron	1	RO	Nail	Shank
272	100	Iron	1	RO	Nail	Shank
277	102	Iron	1	RO	Nail	Shank
290	101	Iron	1	RO	Nail	Head
300	66	Iron	1	RO	Nail	Shank
300	67	Iron	1	RO	Nail	Shank
300	68	Iron	1	RO	Nail	Shank
300	69	Iron	1	RO	Nail	Shank
300	70	Iron	1	RO	Nail	Shank
301		Iron	1	RO	Nail	Shank
301	62	Iron	1	RO	Nail	Head
301	63	Iron	1	RO	Nail	Head
301	64	Iron	1	RO	Nail	Shank
301	65	Iron	1	RO	Nail	Shank
305	71	Iron	1	RO	Nail	Shank
324	72	Iron	1	RO	Nail	Head
324	73	Iron	1	RO	Nail	Head
326	77	Copper alloy	1	?	Chain links	7 oval links
338	76	Iron	1	RO	Strip	2 fragments, incl 2 rivet holes with 1 rivet <i>in situ</i>
349	75	Iron	1	RO	Nail	Shank
367		Iron	21	RO	Nails	8 heads, 13 shanks
367	82	Iron	1	RO	Nail	Shank
371		Iron	6	RO	Nails	2 heads, 4 shanks
371	78	Iron	1	RO	Nail	Shank
371	79	Iron	1	RO	Nail	Shank

Context	Special number	Material	Count	Period	Simple name	Comments
371	83	Iron	1	RO	Nail	Head
371	85	Iron	1	RO	Nail	Shank
377		Iron	1	RO	Nail	Shank
381	84	Iron	1	?	Nail	Shank
384	81	Iron	1	LIA; RO	Nail	Head
415	19	Iron	1	?	Nail	Shank
418	20	Iron	1	RO	Shank	possibly nail shank
421	22	Iron	1	RO	Nail	Head
429	23	Iron	1	RO	Nail	Shank
429	24	Iron	1	RO	Nail	Shank
429	25	Iron	1	RO	Nail	Shank
429	26	Iron	1	RO	Nail	Shank
429	27	Iron	1	RO	Nail	Shank
441		Iron	1	RO	Nail	Shank
443	28	Iron	1	RO	Nail	Shank
443	29	Iron	1	RO	Nail	Shank
462		Iron	1	RO	Nail	Head
464		Copper alloy	1	RO	Fitting	possible mount or strap end
487	31	Iron	1	RO	Nail	Shank
487	32	Iron	1	RO	Nail	Head
487	33	Iron	1	RO	Nail	head? (3 frags)
487	34	Iron	1	RO	Nail	Head
487	35	Iron	1	RO	Nail	Shank
487	36	Iron	1	RO	Nail	Shank
487	37	Iron	1	RO	Nail	head?
487	38	Iron	1	RO	Nail	Shank
487	39	Iron	1	RO	Nail	Shank
487	40	Iron	1	RO	Nail	Shank
487	41	Iron	1	RO	Nail	Shank
487	42	Iron	1	RO	Nail	Shank
487	43	Iron	1	RO	Nail	Head
488	44	Iron	1	RO	Nail	shank (2 frags)
488	45	Iron	1	RO	Nail	Head
488	46	Iron	1	RO	Nail	Head
488	47	Iron	1	RO	Nail	shank (2 frags)
488	48	Iron	2	RO	Nails	Head
488	49	Iron	1	RO	Nail	head (3 frags)
488	50	Iron	1	RO	Nail	Shank
488	51	Iron	1	RO	Nail	Shank
488	52	Iron	1	RO	Nail	Head
488	53	Iron	1	RO	Nail	Head
488	54	Iron	1	RO	Nail	head (4 frags)
488	55	Iron	1	RO	Nail	Head
488	56	Iron	1	RO	Nail	Head
488	57	Iron	1	RO	Nail	Head
488	58	Iron	1	RO	Nail	Head
488	59	Iron	1	RO	Nail	Head
488	60	Iron	1	RO	Nail	Head
489	61	Iron	1	RO	Nail	Head
494	74	Copper alloy	1	?	Pin?	strip with circular section, possibly pin shaft
501		Iron	1	RO	Nail	Shank
502		Iron	1	RO	Disc	
502		Iron	1	RO	Nail	Shank
504		Iron	5	RO	Nails	shank frags
508		Iron	1	RO	Nail	Head
508	123	Iron	1	RO	Strip	rectangular section, broken at both ends
510		Iron	1	RO	Nail	Shank
510	1	Iron	1	RO	Hook	hook at each end, one with a square

Context	Special number	Material	Count	Period	Simple name	Comments
						section. shank expanded and rectangular in section
511		Iron	1	LIA; MD	Nail	head?
521		Iron	5	?	Nails	Shanks
528	4	Iron	1	RO	Ring/collar	ring or collar
528	94	Iron	1	RO	Nail	Shank
528	95	Iron	1	RO	Nail	Shank
542	17	Iron	1	?	Nail	Head
549	11	Iron	1	RO	Nail	Head
549	12	Iron	1	RO	Nail	Head
549	86	Iron	1	RO	Nail	Shank
549	87	Iron	1	RO	Nail	Head
549	88	Iron	1	RO	Nail	Head
549	89	Iron	1	RO	Nail	Head
552	2	Iron	1	RO	Nail	Head
552	3	Iron	1	RO	Nail	Head
555		Iron	1	RO	Nail	Shank
556	119	Iron	1	?	Nail	Shank
556	120	Iron	1	?	Nail	Shank
556	121	Iron	1	?	Nail	Shank
556	122	Iron	1	?	Nail	Shank
557		Iron	6	RO	Nails	1 head, 5 shanks
559	5	Iron	2	LIA; RO	Nails	2 heads
561	6	Iron	1	LIA	Nail	Head
567	8	Iron	1	?	Nail	Shank
567	14	Iron	1	?	Nail	Head
567	21	Iron	1	?	Object	triangular fragment with rectangular section
573	10	Iron	1	RO	Nail	Head
573	13	Iron	1	RO	Nail	Head
575	18	Iron	1	RO	Nail	Head
581	15	Iron	1	LIA	Nail	Head
584	16	Iron	1	RO	Nail	shank (2 frags)
695	124	Iron	1	RO	Object	angled object with a hooked end
695	125	Iron	1	RO	Nail	Shank
695	126	Iron	1	RO	Nail	head (2 frags)
695	127	Iron	1	RO	Nail	Shank
695	128	Iron	1	RO	Nail	Shank
695	129	Iron	1	RO	Nail	Shank
695	130	Iron	1	RO	Nail	Shank
712	131	Iron	1	RO	Nail	shank (2 frags)
725	132	Iron	1	RO	Nail	Head
725	133	Iron	1	RO	Nail	Shank
891		Iron	2	RO	Nails	Shanks

Table 4.2: Summary of the coins

Context	Context type	Special number	Material	Period	Early Date	Late Date	Comments
152	Beam slot cut	118	Copper alloy	RO	364	378	AE3/4. Standing figure and ?captive of GLORIA ROMANORUM etc
280	Upper fill of ditch group 179	104	Copper alloy	RO			Late 3rdC. ?Barbarous radiate. Poor condition
245	Ditch group 170	91	Copper alloy	RO	145	175	Sestersius. ?Faustina Junior. Very poor condition
376	Ditch group 174	80	Copper alloy	RO	69	79	Sestersius. Vespasian. SPQR OB CITES SERVATOS. Poor condition
462	Ditch group 171	99	Copper alloy	RO			Late 3rdC. ?Barbarous radiate. Very poor condition

Context	Context type	Special number	Material	Period	Early Date	Late Date	Comments
528	Subsoil, seals all Roman features	30	Copper alloy	RO			?2ndC. Sestercius. Very poor condition
564	Ditch group 187	7	Copper alloy	?	388	402	AE4. House of Theodosius. VICTORIA type
567	Ditch group 181	9	Copper alloy	?	321	323	AE3. BEATA TRANQUILITAS
707	Top of ditch group 742	134	Copper alloy	RO	1stC	2ndC	?As/quadrans. Worn, very poor condition

Table 4.3: Quantity of slag

Context	Type of context	Number of slag	Weight in g
304	Fill of ditch group 169	1	62
381	Subsoil, seals all roman features (same as 528)	2	14
384	Primary fill of ditch group 169	1	9
386	Fill of ditch group 173	12	271
469	Fill of ditch group 173	1	2
573	Fill of ditch group 181	1	4
740	Backfill over robbed wall remains group 730	1	12
<i>Total</i>		<i>19</i>	<i>374</i>

APPENDIX 5 - HUMAN REMAINS

5.1 Human Remains

by Angela Boyle

Introduction

- 5.1.1 A small quantity of cremated and unburnt disarticulated human bone was recovered during watching brief fieldwork at Bower Road. The unburnt disarticulated material was hand excavated. In excavation cremation contexts were subject to 100% recovery as whole-earth samples and subsequently wet-sieved. Material from the >2 mm fraction were retained en masse.
- 5.1.2 The recovery and assessment of human remains was undertaken in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The material was collected to address research aims relating to ritual and ceremonial use of the landscape, particularly late Iron Age/Roman burial practice.

Methodology

- 5.1.3 All cremated material was quantified by weight and scanned in order to determine age, sex, and potential for further analysis. Each deposit was recorded on a pro forma record sheet, which includes context, context type, period, weight, identifiable fragments, age, sex, and minimum number of individuals. The >2 mm fraction was scanned with a view to determining whether or not it should be sorted for small fragments of human bone.
- 5.1.4 Unburnt disarticulated material was examined to determine preservation, completeness, age and sex where possible, as well as potential for further analysis.

Quantification

- 5.1.5 Cremations and unburnt disarticulated material are summarised in Tables 5.1 and 5.2.

Cremations

- 5.1.6 A total of six deposits of cremated bone were identified on site as potentially human. The identification of three of these was confirmed during assessment (122, 162, 243). One deposit (367) was mixed human and animal bone. Nothing from deposit 462 was identifiable, while deposit 515 consisted entirely of animal bone.

Unburnt disarticulated bone

- 5.1.7 A single mandible was identified as that of an adult male aged 25-35 years. Hypoplastic lines were present on the left and right mandibular canines. These are the result of a disturbance caused by infection or malnutrition during the formation of dental enamel in childhood. The dental inventory appears in Table 5.3.

Provenance

- 5.1.8 The material derived from a variety of contexts which are summarised in Tables 5.1 and 5.2. Cremation deposit 122 (cut number 107) was located towards the west edge of the site and had been deposited in a large jar datable to the period c AD 170-300 together with two ancillary vessels, both Upchurch beakers of unusual form (see Appendix 1.1, above). Two fragments of human bone were recovered from late

Roman pit 242; an unburnt disarticulated mandible from lower fill 250 and a small deposit of unidentifiable bone from upper fill 243. This pit also contained probable special deposits of animal bone, pottery and glass and may represent a terminal deposit. Further very small fragments of unidentifiable cremated bone were recovered from a middle fill of waterhole 372, and from ditch groups 169 (context 367) and ditch group 171 (context 462).

Conservation

- 5.1.9 The material does not require any conservation for the purposes of long-term storage. Under the terms of the CTRL Act, 1996, all human remains are to be reburied.

Comparative material

- 5.1.10 Comparative material includes the small assemblage of similar date which was recovered from Westhawk Farm and from a number of sites also examined along the line of the CTRL. These include Waterloo Connection and Boys Hall Balancing Pond.

Potential for further work

- 5.1.11 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.

Cremations

- 5.1.12 All the deposits, with the exception of 122 are very small and have no potential for further osteological analysis. An average adult cremation can weigh between 1000-2400 g if complete (McKinley 1997, 68; observations at modern crematoria). Clearly, then none of these deposits represent the entire remains of any one individual.

- 5.1.13 Detailed examination of the more substantial deposit of cremated bone (122) will allow for further refinement of age and sex, and also the possible identification of pathological conditions.

- 5.1.14 Both animal and human bone were identified in deposit 367 and it is recommended that the animal bone be identified to species if possible. The identification of animal bone within human cremations has implications for the study of burial practice of the period. Sheep/goat was present within a proportion of the Iron Age cremation burials at Westhampnett (McKinley et al 1997, 73) and has also been identified within cremation deposits from Westhawk Farm, Ashford, Kent as well as a number of cremations at the CTRL site at Waterloo Connection.

Multiple burial

- 5.1.15 A single example of a multiple burial has been tentatively identified during the assessment phase. Deposit 122 was identified as an adult male; however, at least one fragment is the bone of a subadult.

Unburnt disarticulated bone

- 5.1.16 The mandible was in reasonable condition. However, given that only one bone was present a decision was made to carry out full recording at the assessment stage. Therefore no further osteological work is recommended.

Ritual practices

5.1.17 The presence of human bone in pits, ditches and the waterhole may have significance for the understanding of ritual practices during the Roman period. Although no further osteological work is required for this material, it should be taken into consideration in general analysis of the site and should be reported to support any conclusions drawn. Reporting can be based on the present assessment with the exception of cremation 107, where further information may be derived from additional osteological analysis.

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Table 5.1: Summary of cremation deposits

Context	Context type	Period	Weight	Identifiable fragments	Age	Sex	Comments
122	fill of vessel 273	AD 200-270	554 g plus unsorted residue	skull vault. long bone shaft	adult	male	subadult fragment also present
162	fill of waterhole 372	AD 100-270	>1 g	long bone shaft fragment	?	?	no further work
243	upper fill of pit 242	4th century	> 1 g	nothing identifiable	?	?	no further work
367	upper fill of ditch 368	AD 100-150	3 g	skull vault	?	?	at least one unburnt animal rib fragment
462	fill of ditch 461	AD 200-270	> 1 g	nothing identifiable	?	?	nothing identifiable
515	fill of ditch 507	?	4 g				all animal bone

Table 5.2 Summary of unburnt disarticulated human bone

Context	Context type	Period	Preservation	Completeness	Age	Sex	Comments
250	lower fill of pit 242	4th century	Medium	100%	25-35 years	male	Hypoplastic lines on both canines

Table 5.3: Summary of dentition

8	7	6	4	3	1	1	1	3	4	5	6	7	8

- tooth and socket absent
/ post-mortem loss

APPENDIX 6 - ANIMAL BONE

6.1 Animal Bone

by Julie Hamilton

Introduction

6.1.1 A total of 2597 fragments of bone were recovered by hand from 116 contexts during watching brief fieldwork at Bower Road. A further 403 (280 g) fragments were recovered from environmental samples, sieved through meshes of 10 and 4 mm.

6.1.2 The animal bone was collected in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. The material was recovered in order to provide data relating to change in landscape organisation over time, especially at the late Iron Age/Roman transition, and to provide evidence of the economy and environment of the site at this time.

Methodology

6.1.3 Bones and teeth were identified using a comparative collection and standard references such as Schmidt (1972) and Hillson (1992). The assemblage was recorded on a computer spreadsheet (Excel) allowing details of context, species, element, side, completeness, age/sex data, pathology, measurements, alteration and condition to be recorded for each fragment; numbers of unidentified fragments and weights per context were also recorded. Total fragment numbers and, where useful, minimum numbers of individuals (based on the commonest element, with side taken into account, and fusion state for long bones) were calculated from these records. Ageing of domestic animals followed Silver (1969), Payne (1973, 1987), Grant (1982), and Levine (1982), sheep and goat bones were distinguished according to Boessneck (1969), and cattle horn cores were classified following Armitage and Clutton-Brock (1976) and Armitage (1982). Where no goat was positively identified, sheep/goat is referred to as sheep. Measurements followed von den Driesch (1976). Shoulder heights were calculated according to von den Driesch and Boessneck (1974). Small mammal and bird bones were noted but not identified to species.

6.1.4 A total of 1561 fragments (9602 g) of bone hand-recovered from 60 contexts were examined in detail. Contexts for detailed examination were selected based on their archaeological value (i.e. secure contexts that could be placed within the site phasing), potential information to be gained from the bone assemblage, and to obtain as much information as possible about phases of interest. For the purposes of assessment, data were grouped into phases: phase 1 (LIA), Roman period phases 2 (early Roman and pre- posthole building ditches), 3 (posthole building and associated ditches, Roman period to AD 200) and 4 (later phase of posthole building, Roman period to AD 400). There may be some overlap between these, especially phases 3 and 4. Contexts that did not fit this phasing were grouped as phase X (656,549,552,695,712).

Quantification

6.1.5 A total of 2597 fragments of bone were recovered by hand from 116 contexts. A further 403 (280 g) fragments were recovered from environmental samples, sieved through meshes of 10 and 4 mm.

- 6.1.6 A total of 1561 fragments (9602 g) of bone hand-recovered from 60 contexts were examined in detail. Of these, 240 (6837 g) from 47 contexts were identified to species, and there were also 2 bird bones (2 g). In addition, a total of 403 fragments (280 g) of bone from 15 contexts sieved through 10- and 4-mm mesh were examined in detail. Of these, 82 fragments from 12 contexts were identified to species (48) or group (33 small mammal/amphibian, 1 fish).
- 6.1.7 The number of hand-recovered fragments identified to species is summarised by context and phase in Table 6.1 and by percentage in Tables 6.2 and 6.3. Table 6.4 shows the number of fragments identified to species or group from the sieved environmental samples. Fragment types by phase are shown in Table 6.5, and measurements of the dog skeleton in context 557 are shown in Table 6.6.
- 6.1.8 There were only 2 identified fragments from phase 1 (LIA) and only 7 from contexts that did not fit into the phasing, grouped as phase X (656,549,552,695,712). Discussion therefore concentrates on phases 2-4. Species present were sheep, cattle, pig, horse, dog (phases 2 & 3 only) and red deer (*Cervus elaphus*), and 2 bird bones yet to be identified to species. In addition, there was a roe deer (*Capreolus capreolus*) antler fragment in a sample from phase 4.
- 6.1.9 Fragment numbers are too low for detailed interpretations and comparisons of assemblage attributes such as frequencies of species and skeletal elements: this should be borne in mind in the following sections.

Phase 1: LIA

- 6.1.10 One sheep innominate fragment and one cattle tooth were identified.

Phase 2: pre posthole building and early Roman period

- 6.1.11 Cattle predominates, followed by pig, horse and sheep. Pig seems commoner than sheep, and horse is commoner in this phase than any other. There were also 2 dog teeth.
- 6.1.12 There are elements from all parts of the cattle skeleton (vertebrae and ribs were not identified to species, but some "large" vertebrae are undoubtedly cattle). Butchery marks were seen on 2 out of 15 (13%, excluding teeth) cattle fragments (meat-stripping cuts on 2 humeri, one of which had also been chopped through the elbow joint), and also on a large longbone fragment (cuts) and a large rib (chopped). One pair of mandibles was from a mature animal with heavily worn teeth, and one mandible from a juvenile (1-2 years); one maxillary tooth row was from a 2- to 3-year-old animal; one 2nd phalanx was fused proximally. This is not enough to deduce an age structure, but suggests the presence of cattle of a range of ages at the site. One cattle naviculocuboid showed slight degenerative changes of the proximal articular surface, maybe related to heavy work as a draught animal.
- 6.1.13 5 out of a total of 7 sheep fragments were from the skull region including 2 teeth, and the 2 others were from distal limbs: this could be because of poor preservation. No butchery was seen. There were 2 stageable mandibles, from sheep 2-3 and 3-4 years old. One calcaneum was from an animal <2.5-3 years old. This is not enough for an age profile, and would be compatible with use of sheep for meat (slaughtered young) and/or secondary products e.g. wool (slaughtered older).
- 6.1.14 Most of the pig fragments are from mandible/teeth, perhaps because of relatively poor preservation. One pig femur (of 2 limb bone fragments) had a cut mark. One mandible was from a young (1-1.5 years) male, and the femur was unfused at both ends, i.e. <3.5-4 years. The lack of any old animals suggests the use of pigs for meat.

- 6.1.15 8/11 horse fragments were from the skull including 5 teeth (from 4 contexts, 2 groups), and the remaining radius+ulna and phalanx 1, from a skeletally mature animal, were all from the same context. No butchery was seen.
- 6.1.16 2 dog teeth were found.
- 6.1.17 The 1 bird bone should be identified to species if possible.

Phase 3: posthole building and Roman period to AD 200

- 6.1.18 Cattle predominate with relatively few sheep and pig fragments. There was one horse tooth, a partial dog skeleton from a pit (554), and a group of worked red deer antler fragments and 2 limb bones from a ditch (428), as well as a metacarpal from another ditch (547).
- 6.1.19 All parts of the skeleton are represented, with more fragments from the appendicular skeleton than skull/teeth. Butchery was seen on 5/16 (31%, excluding teeth) cattle fragments (a horncore sawn through at base, an innominate with chop, cut and scrape marks, two scapulae chopped and cut, and a mandible with cuts). The horncore suggests horn working, while the other marks can be explained by carcass division and meat stripping. There was also a large rib chopped through. 1 mandible was from an animal 2-3 years old at death, and the sawn horncore was probably from a juvenile male (about the same age). All epiphyses were fused: since most would have been fused by 1-2 or 2-3 years this is not very informative, but one was late-fusing (3.5-4 years) so at least some older animals were present. Exploitation of cattle for meat and horn is certainly indicated.
- 6.1.20 There were only 4 sheep fragments: a distal tibia from a skeletally mature animal (>18-24 months), a metacarpal scrap, a mandible from an animal ≥ 4 years old, and a tooth. No butchery was seen.
- 6.1.21 There were only 2 pig fragments (1 mandible, 1 tooth).
- 6.1.22 There was 1 horse tooth.
- 6.1.23 Most of the red deer fragments were in one context (ditch 428, context 429). The 13 antler pieces were probably waste from antler working and showed saw and trimming marks. In the same context were a mandible and a radius fragment, and it is likely that some or most of the shattered long bone in the same context was also from red deer, and there was also a metacarpal from a ditch (547, context 587). This is not just imported antler for working: it is likely that red deer was present in the neighbourhood of the site.

Phase 4: later phase of posthole building and Roman period to AD 400

- 6.1.24 Species proportions cannot be meaningfully estimated because most of the bone comes from clear groups in one pit (242, contexts 243, 250) (the cattle skeletons, sheep skull, pig teeth and skull and mandible fragments) of associated fragments. The contents of this pit are suggestive of "ritual" depositon.

Pit group 242

- 6.1.25 The animal bone in the pit comprised the following, listed by species. Material is from contexts 243 and 250 unless otherwise stated.
- 6.1.26 Most of the skeleton of a calf <7-10 months old, and a few longbone fragments and vertebrae of a foetal calf; both of these may have been deposited complete. There were also fragments of humerus (with meat-stripping marks), metatarsal, calcaneum

and phalanx 1 from older animal(s), and a horncore from a juvenile/subadult animal sawn at the base, probably waste from hornworking.

- 6.1.27 The skull and mandibles of a male sheep (definitely not goat) 3-4 years old, and the mandible of another sheep of similar age, a tibia fragment and a 2nd phalanx. The horncores of the skull showed grooving/hollowing at the base, especially posterior/laterally. The aetiology is uncertain, but possibly it was caused by some kind of tether or harness.
- 6.1.28 Pig skull and mandible fragments and teeth (including a right and a left male tusk), possibly all from one individual (around 1 year old at death judging by tooth eruption), and a humerus fragment.
- 6.1.29 Horse fragments comprising a distal humerus (fused, so >3-3.5 years) and a calcaneum fragment..
- 6.1.30 A piece of maxilla of a red deer with the permanent premolar2 in place i.e. >2 years old.
- 6.1.31 A single bird bone (context 250), which should be identified to species if possible.

Other

- 6.1.32 Cattle fragments were also recovered from the waterhole 372, and fill 732 of pit 731; these included longbone fragments and teeth from at least 2 older animals.
- 6.1.33 Sheep fragments from waterhole 372 comprised fragments of skull, mandible and humerus. A longbone fragment which may have been from sheep showed signs of a healed fracture.
- 6.1.34 Pig fragments from other contexts included a first phalanx and a distal radius fragment, both with unfused epiphyses i.e. from young pig(s).
- 6.1.35 A femur fragment from a horse <3-3.5 years old at death (context 103), and a piece of roe deer antler, sawn at the base (from a >10 mm sample, context 102) were found in waterhole 372.
- 6.1.36 The partial dog skeleton in the clay-lined pit 554 outside the posthole building (context 557) may well have been whole originally. It was from a skeletally mature individual with heavily worn teeth. Measurements (Table 6.6) indicate a shoulder height of 30-35 cm; this is a small to medium size, common in the Romano-British period but not in the preceding Iron Age (Harcourt 1974).

Phase X: Other contexts

- 6.1.37 There were 1 sheep, 5 cattle, and 1 pig fragment identified from these contexts.

Samples

- 6.1.38 The sieved samples cannot be compared directly with the hand-recovered bone, but they provide a useful check on biases. Small mammal/amphibian, fish and roe deer were found only in the sieved samples. Compared to cattle, the proportions of pig and sheep are much higher, pig in the >10 mm and sheep in the 10-4 mm samples. There was also some foetal bone, possibly pig. This suggests that the proportions of smaller species and younger animals in the hand-recovered samples will be underestimates. Without sieving, no fish would have been recovered, and this is a resource that is often ignored simply because the evidence has not been searched for.

Overall interpretation

- 6.1.39 In terms of fragment numbers or weights, cattle predominated in all Roman period phases, followed by pig, sheep, dog and horse. In phase 2, pig exceeds sheep, while in phases 3 and 4 sheep exceeds pig. There are also more horse fragments in phase 2. With relatively few fragments, however, interpretation cannot be pushed too far, particularly as there were some clear groups of associated bone which could distort species proportions. Most of the dog fragments came from one individual (pit 554, phase 3) and there was also most of the skeleton of a calf in a pit (242, phase 4). Other obvious groups include a fragmented skull of a sheep (and possibly of a pig) and some foetal cattle bones in the same pit (242, phase 4) and pig mandible fragments and teeth in a ditch (366, phase 2). These may distort the species proportions as indicated by fragment numbers or weights to some extent, but if all of them are removed from the calculations the rank order is similar. There are too few fragments for MNI calculations to be useful.
- 6.1.40 Deposition of whole/part carcasses differs from butchery/domestic waste disposal, but is not necessarily "ritual" -- the animals may have been diseased or not eaten for some other reason (e.g. the dog in pit 554). A fragmentary skull may represent a "ritual" deposit, or be discarded butchery waste. It is therefore difficult to find any consistent way to distinguish refuse from ritual. The assemblage in pit 242, which included pottery, a glass vessel and human remains, does suggest something other than ordinary waste disposal, but also included elements indistinguishable from this.
- 6.1.41 Taken at face value, the results suggest that cattle supplied at least three-quarters of the meat, with pig and sheep making up most of the rest. There is nothing to indicate that horse and dog were eaten, but they were clearly present at the site. Most of the red deer fragments were in one group of antler pieces (429, ditch, phase 3), probably waste from working, but there were also other skeletal elements, so it is possible that its meat was eaten, if infrequently. Roe deer is represented by a single worked antler fragment (from a sieved sample), which may have been imported as raw material for working, so it does not necessarily indicate that roe deer was present nearby.
- 6.1.42 Apart from meat and carcass by-products (skin, antler, horn, bone, fat etc.), animals could supply secondary products such as milk (cattle, possibly sheep), wool (sheep) and be used for traction/transport (cattle, horses). Dogs could be pets or guard dogs, or be used in herding or hunting.
- 6.1.43 It was not possible to construct formal age-at-death profiles. For cattle, there was a range of ages from foetal to old, typical of a "producer" site. There was no evidence of young sheep, but this could be accounted for by preservation bias; it seems likely that secondary products (wool) were important since most ageable sheep were 3-4 years old or older. Pigs, on the other hand, were generally young, suggesting rearing for meat.
- 6.1.44 Though scanty, the animal bone evidence suggests that this was a producer site, where cattle, sheep and pigs were reared both for consumption and for secondary products (wool, milk) and uses (traction). Horse and dog were both present, and red and possibly roe deer may have been hunted.

Provenance

- 6.1.45 There were no clear differences between phases or feature types in the condition of the bone. Overall, about 4% of fragments showed traces of burning, and there was a concentration of burnt fragments in a boundary ditch (group 169, context 487). Surface erosion was noted on c. 20% of fragments overall, with concentrations in a

boundary ditch (group 169, context 367) and a pit (242, context 243). About 3% of fragments overall had been gnawed by carnivores, probably dogs. Butchery marks were seen on about 5% of identified fragments (not counting the sawn antler deposit), or 1% of fragments overall. The rather low overall percentage of identified fragments (15%) and the relatively high proportion of loose teeth among the identified fragments (around 30% overall) reflects the generally fragmentary nature of the bone.

- 6.1.46 Comparison of the hand-collected bone with the sieved samples clearly shows that proportions of smaller/younger animals are underestimated in the hand-collected sample, and some species (notably roe deer, and fish) would have been missed altogether without sieving. Identification of small mammal/amphibian bone from the sieved samples to species could potentially contribute environmental information.

Conservation

- 6.1.47 Storage in boxes is satisfactory.

Comparative material

- 6.1.48 General reviews of the Roman period are given by King (1978, 1984). There have been many excavations of Roman villas in Kent, unfortunately mostly with little or no study of the animal bones (but see Philp et al. 1991, 1999).
- 6.1.49 In general, the low potential of the assemblage for further work (see below) suggests that there is little scope for comparative zoo-archaeological work.

Potential for further work

- 6.1.50 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 6.1.51 The animal bone material as it stands will not yield much more information.
- 6.1.52 The information contained in the present assessment could, however, usefully be included with data from other sites along the route of the CTRL (for example, Thurnham Villa) if an overview of Romano-British agriculture in Kent is proposed in the context of study of the landscape, environment and economy over time. The information in this assessment also helps to characterise the nature of farming activity at the site, in general terms, and should be taken into account during any further analytical or interpretative work. As such, it would be worth reporting in any final publication.
- 6.1.53 The animal bone associated with possible ritual deposits is of considerable interest in terms of understanding ritual and ceremonial activity during the Roman period, and the results of this assessment should be taken into account in any further analysis of these deposits. The animal bone associated with human remains in context 367 (ditch group 169) should be identified to species to assist in analysis of ritual practices in the Roman period.
- 6.1.54 The small mammal bone recovered can contribute further to environmental information in the form of specific ecological indicators. The bird and fish bones would also contribute to a better understanding of the economy (diet, status of the inhabitants). Therefore, it would be worth identifying to species.

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Table 6.1: Number of identified fragments by context, feature interpretation and phase

Context	Interpre- tation	Phase	N identified fragments							Count	Weig ht (g)
			Sheep	Cattle	Pig	Horse	Dog	Bird	Deer		
492	Ditch	1	1	0	0	0	0	0	0	1	1
493	Ditch	1	0	1	0	0	0	0	0	1	2
117	Ditch	2	0	1	0	0	0	0	0	1	5
141	Ditch	2	0	1	1	1	0	0	0	3	32
142	Ditch	2	2	1	0	1	0	0	0	4	44
144	Ditch	2	0	1	3	0	0	0	0	4	24
145	Ditch	2	0	2	0	1	0	0	0	3	62
300	Ditch	2	0	1	0	0	0	0	0	1	16
305	Ditch	2	0	2	1	0	0	0	0	3	234
366	Ditch	2	0	2	6	0	0	0	0	8	299
367	Ditch	2	1	2	0	0	0	0	0	3	310
380	Ditch	2	1	0	0	0	0	0	0	1	21
384	Ditch	2	0	2	0	0	0	0	0	2	74
386	Ditch	2	1	1	0	0	0	0	0	2	22
388	Ditch	2	1	0	0	0	0	0	0	1	2
481	Ditch	2	0	0	0	0	2	0	0	2	4
482	Ditch	2	1	0	0	0	0	0	0	1	6
484	Ditch	2	0	1	0	3	0	0	0	4	496
487	Ditch	2	0	2	0	5	0	1	0	8	168
488	Ditch	2	0	1	0	0	0	0	0	1	49
489	Ditch	2	0	2	0	0	0	0	0	2	112
124	Pit	3	0	2	0	0	2	0	0	4	34
126	Pit	3	0	2	0	0	0	0	0	2	17
138	Ditch	3	0	2	0	1	0	0	0	3	217
139	Ditch	3	0	3	0	0	0	0	0	3	80
424	Posthole	3	1	0	0	0	0	0	0	1	2
429	Ditch	3	0	1	0	0	0	0	15	16	257
441	Ditch	3	0	2	1	0	0	0	0	3	114
462	Ditch	3	1	1	0	0	0	0	0	2	85
508	Ditch	3	0	4	0	0	0	0	0	4	363
515	Ditch	3	0	1	0	0	0	0	0	1	179
557	Pit	3	0	0	0	0	19	0	0	19	87
567	Ditch	3	1	1	0	0	0	0	0	2	103
569	Ditch	3	0	1	0	0	0	0	0	1	13
573	Ditch	3	0	1	0	0	0	0	0	1	15
587	Ditch	3	0	0	0	0	0	0	1	1	93
890	Pit	3	1	0	0	0	0	0	0	1	5
891	Pit	3	0	0	1	0	0	0	0	1	9
102	Waterhole	4	3	3	1	0	0	0	0	7	81
103	Waterhole	4	1	1	1	1	0	0	0	4	459
243	Pit	4	7	28	11	1	0	0	0	47	549
250	Pit	4	5	35	2	1	0	1	1	45	1827
435	Burrow	4	0	0	1	0	0	0	0	1	28
732	Pit	4	0	8	0	0	0	0	0	8	174
549	Ditch	X	1	1	0	0	0	0	0	2	7
552	Ditch	X	0	0	1	0	0	0	0	1	6
712	Ditch	X	0	4	0	0	0	0	0	4	57
TOTAL			29	124	30	15	23	2	17	240	6839

Table 6.2: Percentage of identified fragments of domestic species by phase

Phase	% identified fragments					Count
	Sheep	Cattle	Pig	Horse	Dog	
1	50	50	0	0	0	2
2	13	42	21	21	4	53
3	8	43	4	2	43	49
4	15	68	15	3	0	110
X	14	71	14	0	0	7
Total						221

Table 6.3: Percentages of fragment weights of domestic species by phase

Phase	Sheep	Cattle	Pig	Horse	Dog	Total (g)
1	34	66	0	0	0	3
2	3	59	5	33	0	1943
3	3	88	1	1	7	1350
4	17	55	5	23	0	3106
X	6	53	41	0	0	117
Total						6519

Table 6.4: Number of identified fragments by mesh size and period (sieved samples)

Phase	Sheep	Cattle	Pig	Small mammal	Fish	Roe deer	Total
2					1		1
3	1	2	7	0	0	0	10
4	4	2	4	1	0	1	12
Total, >10 mm	5	4	11	2	0	1	23
3	5			14			19
4	17		5	17	1		40
Total, 10-4mm	22	0	5	31	1		59

Table 6.5: Fragment types by phase for domestic species

Phase 2	NIFs					Percentages				
	Sheep	Cattle	Pig	Horse	Dog	Sheep	Cattle	Pig	Horse	Dog
Scapula. Innominate. Limb		3	1	2		0	14	9	18	0
Podial/Metapodial	2	6	1	1		29	27	9	9	0
Phalanges		1		1		0	5	0	9	0
Vertebrae						0	0	0	0	0
Skull/Horncore	1	2		2		14	9	0	18	0
Mandible	2	3	4			29	14	36	0	0
Teeth	2	7	5	5	2	29	32	45	45	100
<i>Phase 2 Total</i>	7	22	11	11	2					
Phase 3	Sheep	Cattle	Pig	Horse	Dog	Sheep	Cattle	Pig	Horse	Dog
Scap. Innom. Limb	1	6			7	25	29	0	0	50
Podial/Metapodial	1	3			1	25	14	0	0	7
Phalanges		4				0	19	0	0	0
Vertebrae					3	0	0	0	0	21
Skull/Horncore/Antler		1				0	5	0	0	0
Mandible	1	2	1		2	25	10	50	0	14
Teeth	1	5	1	1	1	25	24	50	100	7
<i>Phase 3 Total</i>	4	21	2	1	14					
Phase 4	Sheep	Cattle	Pig	Horse		Sheep	Cattle	Pig	Horse	
Scap. Innom. Limb	3	11	2	2		19	15	13	67	
Podial/Metapodial		7		1		0	9	0	33	
Phalanges	1	2	1			6	3	6	0	
Vertebrae		40				0	53	0	0	
Skull/Horncore	6	6	2			38	8	13	0	
Mandible	4		3			25	0	19	0	
Teeth	2	9	8			13	12	50	0	
<i>Phase 4 Total</i>	16	75	16	3						

Table 6.6: Dog measurements – skeleton in context 557

Element	Measurements (von den Driesch 1976) (mm)							
Lower 1st molar	GL	GB						
		17.7	7.4					
2nd cervical vertebra	LCDe	LAPa	Bfer	Bpacd	SBV	Bfed		
		36.7	-	24.1	21.6	18.0	13.9	
Scapula	SLC	GLP	LG	BG				
		19.7	23.2	20.6	12.8			
Humerus	GLC	Dp	SD	Bd				
		98.0	30.1	10.5	24.1			
Ulna	DPA	SDO	BPC					
		18.4	15.8	11.5				
Tibia	GL	Bp	SD	Bd				
		102.6	21.5	10.7				

GL: greatest length ; GB: greatest breadth ; LCDe: Greatest length in region of body ; LAPa: Greatest length of arch including Process articulares caudales ; Bfer: Greatest breadth of the cranial articular surface ; Bpacd: Greatest breadth across the processus articulares caudales ; SBV: Smallest breadth of vertebrae ; Bfed: Breadth of the Caudal articularis ; SLC: smallest length of the column scapulae ; GLP: greatest length of the processors articularis ; LG: Length of glenoid cavity ; BG: Breadth of glenoid cavity ; GLC: Greatest length from caput (head) ; Dp: Depth of proximal end ; SD: Smallest breadth of diaphysis ; Bd: Greatest breadth of distal end ; Bp: Greatest breadth of proximal end ; DPA: Depth across the processus anconaeus ; SDO: Smallest depth of the Scleranium ; BPC: Greatest breadth across the coronoid process.

APPENDIX 7 - MACROSCOPIC PLANT REMAINS AND CHARCOAL

7.1 Charred Plant Remains and Charcoal

by Dana Challinor

Introduction

- 7.1.1 Soil samples were taken during the excavation for the recovery of charred plant remains and charcoal. A range of features, dating to the Romano-British period, were sampled including ditches, pits, postholes and waterholes. The samples were taken in accordance with the Fieldwork Event Aims for the site, which are set out in section 2 of the main report, above. Soil samples were taken in order to provide environmental and economic data, and environmental remains have particular relevance to the general CTRL Research Aims in establishing regional patterns of cereal economy in the Roman period.

Methodology

- 7.1.2 A total of 55 samples were taken on site. 24 samples were processed by flotation in a modified Siraf-type machine, with the flots collected onto a 250 μ m mesh. The volume of soil processed varied (from 1 to 41 litres) according to the feature type. All 24 samples processed produced flots which were submitted for assessment. In addition to the samples which produced charred plant remains, there was one sample from pit 242 (context 250) which appeared to contain waterlogged preservation. With the exception of this flot which was retained wet, the flots were air-dried and divided into fractions using a set of sieves. Each fraction was then scanned under a binocular microscope at x10 to x20 magnification. Any seeds or chaff noted were provisionally identified based on morphological characteristics, and an estimate of abundance was made. Fragments of charcoal were randomly extracted, fractured and examined in transverse section. Fragments caught in the >2mm sized sieves were quantified as identifiable.

Quantification

- 7.1.3 Twenty flots produced identifiable charred remains (Table 8.1). All of these produced cereal grain, predominantly *Triticum spelta/dicoccum* (spelt/emmer wheat), with occasional *Hordeum vulgare* (barley) and some short grained *Triticum* sp. (wheat) which may be either a free-threshing bread type wheat or a short grained spelt. Quantities of cereal grain varied considerably, from a few grains (1-10) to more than 1000. Large assemblages were present in several deposits (124, 125, 508, 559 and 891), spanning the Roman period from AD 70-150 to 270-400. Chaff was also abundant in these samples; mostly *Triticum spelta/dicoccum* glume bases, but *Hordeum* rachis, and charred awn fragments were also recognised. A range of weed seeds were also noted in most samples; these included *Rumex* (docks), small Gramineae (grasses) and Leguminosae (legumes) but the majority of richer samples were dominated by *Bromus* subsect *Eubromus* (brome grass) seeds. A couple of nutshell fragments, thought to be *Corylus avellana* (hazel), were noted in contexts 124 and 162.
- 7.1.4 The samples were generally rich in wood charcoal, with a range of taxa - *Quercus* sp. (oak), *Fraxinus excelsior* (ash), *Alnus/Corylus* (alder/hazel), *Prunus* sp. (blackthorn, cherry) and Maloideae (hawthorn, apple, pear etc).
- 7.1.5 The waterlogged remains from pit 242 (context 250; sample 50) were examined by Dr Mark Robinson of the Oxford University Museum. Vast quantities of degraded

Rubus fruticosus (blackberry) seeds were visible but other seeds were rare, with only a few *Juncus* (rush) seeds noted. The flot also contained some poorly preserved mineralised material; fragments of wood and other plant tissues, as well as insect larvae. The fine residue fraction from this sample was also examined. Mineralised small ungulate droppings were noted, as well as some twisted plant fibres, not inconsistent with spun wool. Small faunal remains, including a possible fish scale were present in both the flot and residue.

- 7.1.6 In general, the preservation of charred material was moderate, although many of the grains were infused with sediment. The quantity of cereal remains, found in a range of features, is indicative of crop processing activities on the site. The cereal remains at Bower Road, however, are not typical of processing waste which contains few grains but frequent glume bases and some weeds. At this site, the majority of samples were dominated by grain or grain-sized weeds, comparable to assemblages formed by accidental burning during spikelet processing or storage. The aisled barn at Thurnham Roman Villa, similar to the structure excavated at Bower Road, was associated with a corn dryer which produced similar assemblages. The wood charcoal is likely to represent the dumped remains of fuel, potentially from fires associated with the crop processing. The range of taxa present suggests that there was little deliberate selection of firewood, which was probably collected on an *ad hoc* basis according to availability.
- 7.1.7 The waterlogged remains from context 250 were very poorly preserved and limited to woody fragments and robust seeds. This indicates that the deposit was not permanently anaerobic. The mineralised remains, while not well-preserved, were not inconsistent with material usually found in cess pits. In any case, it is certainly an unusual deposit.

Provenance

- 7.1.8 The samples were from a range of features of all periods and from all areas of the site (see Table 8.1). Of the five particularly rich samples recommended for further analysis (see below), two are from ditches around the posthole building (contexts 508 and 559 from subgroups 171 and 181), and three are from discrete pits (contexts 124 and 125 from 2nd-century pit 123, and context 891 from 1st- to 2nd-century pit 886 immediately south of the main site). The waterlogged and mineralised remains from context 250 are from pit 242, which contains human and animal bone, pottery and glass suggestive of a special, possibly terminal, deposit.

Comparative Material

- 7.1.9 The range of species identified are appropriate for the Romano-British period. The cereal taxa, *Hordeum vulgare* and *Triticum spelta*, are the principal cereals recorded throughout southern Britain at this time (Greig 1991) and have been recorded from other contemporary sites within the CTRL project (eg. Thurnham Villa, Hockers Lane and East of Station Road). In addition, deposits from Thurnham Villa and Hockers Lane have produced *Triticum dicoccum*, which has not been recorded at Bower Road. However, the presence or absence of *T. dicoccum* will need to be confirmed at the analysis stage. It is one of the research aims to establish how important this crop was in the region during the Roman period.
- 7.1.10 The mineralised material is very unusual for this period. Only two other sites (Silchester, Hampshire and Uley, Gloucester) have produced mineralised deposits of Roman date (Mark Robinson, pers. comm.).

Conservation

- 7.1.11 The flots are in a stable condition and can be archived for long term storage.

Potential for further work

- 7.1.12 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 7.1.13 Five samples of charred plant remains are recommended for full analysis (samples 1, 4, 46, 47 and 67). These have the potential to provide economic information for the site as well as to aid understanding of regional agricultural patterns. Further analysis of the distribution of charred plant remains across the site may enhance understanding of the function of structures and areas of the site, and the nature and range of activities carried out there. Current knowledge of the agricultural activities of the area in the Iron Age and Romano-British periods is limited and the CTRL projects offer the opportunity to conduct a regional study.
- 7.1.14 Further work on the wood charcoal would increase the species list, but is not considered necessary, as it has little potential to add to the economic or environmental understanding of the site.
- 7.1.15 The presence of Roman mineralised remains is of regional as well as national interest. The provenance of this material enhances its value, as pit 242 contained possible special deposits of human and animal bone, pottery and glass and may represent a terminal deposit. Full analysis of the mineralised remains may add to the list of material associated with this special deposit and thus be of value for the analysis of ritual practice during the Roman period. Although the preservation at Bower Road is not very good, the material is rare enough to warrant further work
- 7.1.16 It is recommended that full analysis is carried out on the five richest charred samples and the mineralised material. The full analysis comprise standard procedures of sorting the material, identifying and counting it. The faunal remains should also be looked at by a specialist.

References

Greig, J. 1991 The British Isles, in W. van Zeist, K. Wasylkova and K-E. Behre (eds) *Progress in Old World Palaeoethnobotany*, 299-334, Rotterdam

encrustation of some of these shells suggests they had a separate origin from the other shells. It is thought most likely that they had been re-worked from the colluvial sediment and they were earlier Holocene in origin. Unfortunately, the colluvium had not been sampled. The species of open habitats probably represent the contemporaneous fauna of the Roman settlement. They mostly comprise *Vallonia costata* and *V. excentrica* but are not particularly abundant. The aquatic species probably lived in standing water in the archaeological features. They are all "slum aquatic" molluscs, which are able to tolerate stagnant conditions and episodes of drying out. By far the most numerous is *Anisus leucostoma*, which is particularly abundant in Samples 18 and 19 from Section 39. It is possible that this part of the ditch held water for longer than the other contexts.

- 8.1.8 The high degree of residuality in the molluscan assemblages greatly reduces their value for meeting their research objective. They do show that the archaeological features at least seasonally held standing water. However, it is not possible to use snail evidence to determine whether the Roman settlement was entirely open or had much scrub on it.

Conservation

- 8.1.9 The mollusc remains are at present stable as dry flots and residues. Further analysis would require sorting of shells from the flots and residues but they would remain stable. If the recommendation that no further analysis is undertaken is followed, it is recommended that the flots and residues should be discarded.

Comparative material

- 8.1.10 No other sites within the CTRL project have given similar problems with residual material. However, in situ earlier Holocene woodland assemblages were found at White Horse Stone. Residuality is, however, a general problem in molluscan studies.

Potential for Further Work

- 8.1.11 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.
- 8.1.12 The molluscs from Bower Road appear to have no potential for further useful work, given the problem with residual material.

Recommendations

- 8.1.13 It is recommended that a very brief summary of the results of the molluscan assessment be incorporated in any final report, including mention of the occurrence of residual earlier Holocene shells of woodland species which had probably been derived from colluvium and the occurrence of contemporaneous snails of stagnant water in the Roman features.

Bibliography

KERNEY, M. P., (1999). *Atlas of the land and freshwater molluscs of Britain and Ireland*. Colchester, Harley Books.

Table 9.1: Quantities of mollusc samples

Number of columns	Number of samples in columns	Number of other samples	Total number of samples taken	Number of columns assessed	Total number of samples assessed
5	31	0	31	4	12

Table 9.2: Mollusc Columns

Column/Section	54	54	4	4	4	4	4	39	39	39	74	74
Sample	33	30	14	12	11	9	7	19	18	16	55	54
Context	345	345	515	515	515	508	508	464	463	462	160	160
Catholic species												
Cochlicopa sp.	-	-	-	+	-	-	-	+	+	-	-	-
Trichia hispida gp.	++	+	+	-	+	-	-	+	+	+	+	+
Arianta arbustorum	-	-	-	+	-	-	-	-	+	-	-	-
Cepaea sp.	-	+	+	-	-	-	-	-	-	-	-	-
Open-country species												
Pupilla muscorum	-	-	+	-	-	-	-	-	-	+	-	-
Vallonia costata	+	-	+	+	-	-	-	+	-	-	-	-
V. excentrica	+	+	+	-	-	-	-	-	-	+	-	-
Vallonia sp.	+	-	+	+	+	-	-	+	-	+	+	+
Shade-loving species												
Acicula fusca	-	-	-	-	-	-	-	-	-	-	+	-
Carychium sp.	++	-	+	++	+	-	-	+++	+	++	+++	-
Vertigo pusilla	-	-	-	-	-	-	-	+	-	-	-	-
Punctum pygmaeum	-	-	-	-	-	-	-	+	-	-	-	-
Discus rotundatus	+	+	+	+	++	-	-	++	+	+	+	-
Vitrea sp.	-	+	+	+	-	-	-	+	+	-	+	-
Nesovitrea hammonis	+	-	-	-	-	-	-	-	-	-	-	-
Aegopinella pura	-	-	-	-	-	-	-	+	-	-	+	+
A. nitidula	+	-	-	-	-	-	-	+	-	-	+	-
Oxychilus cellarius	-	+	+	+	-	-	-	+	-	-	+	-
Euconulus fulvus	-	-	-	-	-	-	-	+	-	-	-	-
Clausilia bidentata	-	-	-	-	-	-	-	+	+	-	+	-
Burrowing species												
Pomatias elegans	-	-	-	-	-	-	-	+	-	-	-	-
Cecilioides acicula	-	-	-	+	-	-	-	+	+	++	-	+
Slum aquatic and amphibious species												
Lymnaea truncatula	+	-	-	+	-	-	-	+	-	+	-	-
L. peregra	-	-	++	-	-	-	-	++	+	-	-	-
Anisus leucostoma	+	-	-	+	-	-	-	+++	+++	+	+	-
Other aquatic species												
Pisidium sp.	-	-	-	+	-	-	-	+	+	-	-	-
<i>Approx Total (excluding Cecilioides acicula)</i>	50	10	40	35	15	0	0	250	500	30	50	5

APPENDIX 9 SHELLS

9.1 Oysters and other marine molluscs

By Jessica M. Winder

Introduction

9.1.1 Shells of the common flat oyster *Ostrea edulis* L. together with whelk (*Buccinum undatum* L.), common cockle (*Cerastoderma edule* L.) and a larger cockle species (?*Acanthocardium* sp.) were recovered from excavations at Bower Road.

9.1.2 Shells were recovered by hand retrieval and sieving of bulk samples.

9.1.3 Marine molluscs were retrieved in accordance with the Landscape Zone Priorities and Fieldwork Event Aims for the site, set out in section 2 of the main report, above. It was hoped that the study of marine molluscs would assist in the understanding of the manipulation and consumption by humans of natural resources and the way in which population increase and concentration might have affected natural resource exploitation and accelerate environmental change.

Methodology

9.1.4 The shells from each context were identified, where possible, and counted.

9.1.5 Oyster valves were separated into left and right valves, and further divided into shells suitable or unsuitable for measuring and detailed recording of features.

9.1.6 A sub-sample of contexts containing at least thirty measurable left or right valves would be selected as suitable for use in statistical comparisons of sizes or comparisons of evidence for epibiont infestation (Winder 1993).

Quantification

9.1.7 Table 9.1 presents the number of shells for each context with comments on their condition.

9.1.8 Some 51 oyster shells were recovered, of which only 17 were near complete valves and 34 were unmeasurable. These were recovered from thirty contexts together with fragments of at least two single cockle valves, a fragment of a larger cockle species, and a fragment from a common whelk. There were also fragments of unidentified fossil shell.

9.1.9 The number of shells and shell fragments in each context is very small, and the state of preservation of the shells is almost without exception extremely poor, being worn, powdery and flaky.

Provenance

9.1.10 The molluscs were recovered from a wide range of features across the site, representing all main periods of activity.

Conservation

9.1.11 Long term storage would not be affected by any further analysis, were this feasible.

9.1.12 Long term storage, should it be deemed necessary or desirable, would require the shells to be kept dry, in sealed polythene bags, with minimisation of mechanical damage.

9.1.13 Regarding retention/discard policy, it is suggested that there is little merit in retaining this assemblage of material.

Comparative material

9.1.14 This assemblage of material is not suitable for comparison with material from elsewhere, whether within or from outside the CTRL project.

Potential for further work

9.1.15 The following section discusses potential for further work in the light of the Landscape Zone Priorities and Fieldwork Event Aims.

9.1.16 There is no potential for the data assemblage derivable from this assemblage of marine molluscan material to address the original Landscape Zone Aims and the Fieldwork event Aims.

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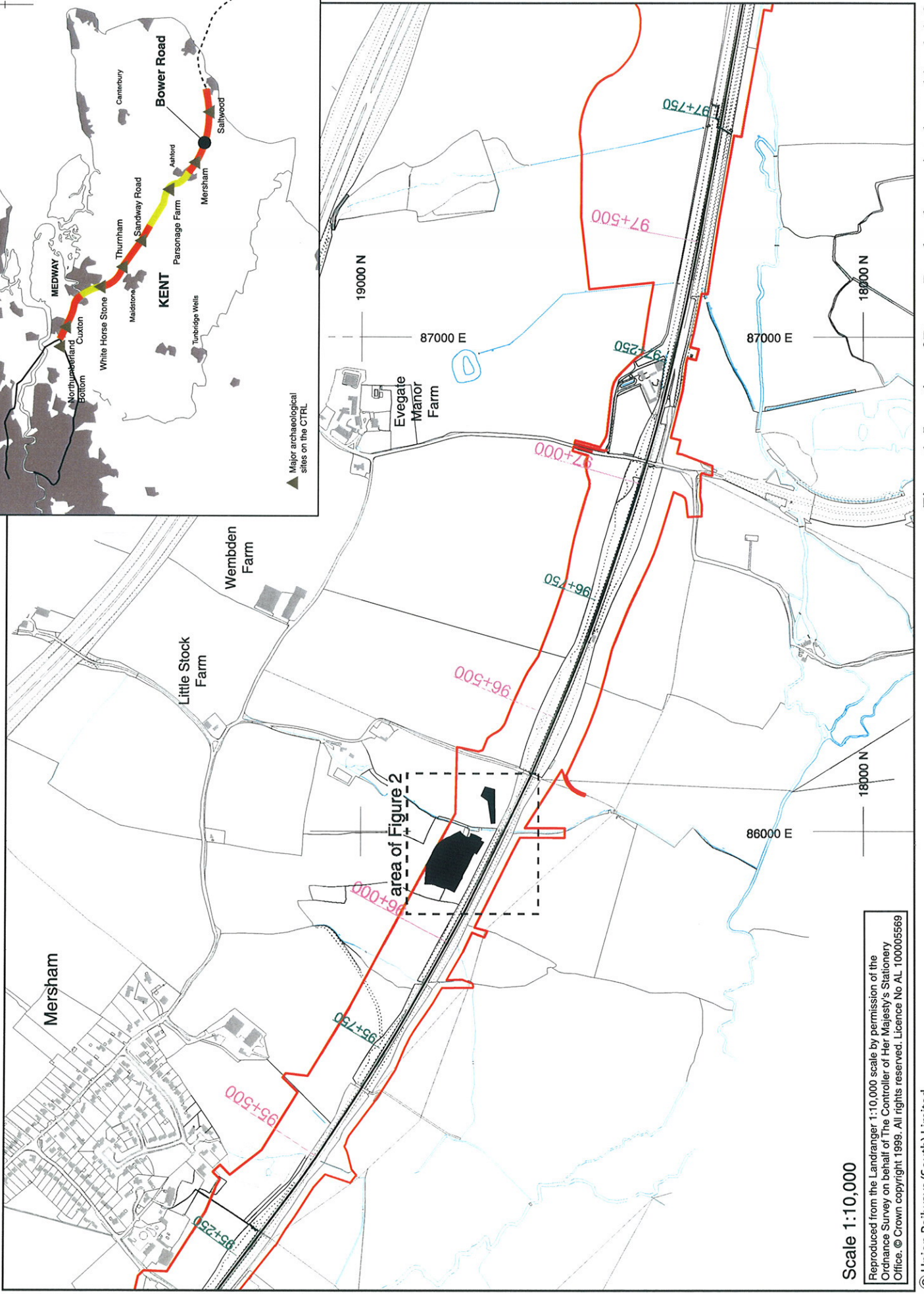
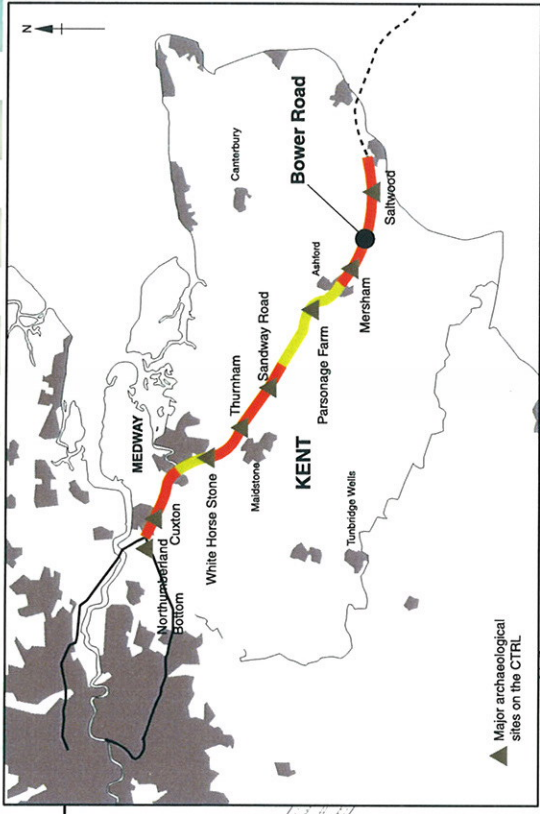
Winder, J. M. (1993) A study of the variation in oyster shells from archaeological sites and a discussion of oyster exploitation. PhD Thesis, University of Southampton, Department of Archaeology.

Table 10.1: Oysters and other marine molluscs from Bower Road

Context number	Sample number	Left valve (LV) oyster	Unmeasurable LV oyster	Right valve (RV) oyster	valve	Unmeasurable RV oyster	Total valves oyster (P=present)	Other species	Comments on oysters
102		0	0	0	0	0	0		Fragment RV only
103	45	0	1	1	0	0	2		Medium, thin, flakey, Pc
103	>10mm	0	0	0	0	0	0		2 frags RV oyster
120		0	0	0	0	0	0		2 frags oyster
162		2	0	0	0	1	3		2 frags very large RVs, thin, sharp-edged, good condition but with orange/pink interior in 1 ?burning
162	54	0	0	0	0	1	1		LV large thick but delaminating
254		0	0	0	0	0	0		Thin, small
260		0	0	0	0	0	0		Fragment RV from large shell-blackened ?burning
301		1	4	2	7	14	14	1 cockle valve	Small frags -not all shell- some sort of hard translucent material
304		1	0	0	0	1	1		Various sizes, very flakey, lots frags, powdery. Includes stone and ?fossil fragments. Hinge of lge measurable RV with ?imprint shell at heel
324		0	1	0	0	1	1	Columella whelk	Thick, irregular, flakey
338		1	0	0	0	1	1	Frags land snail - zonitid-like	Stone and oyster fragment
349		0	1	3	1	5	5		Reddy brown colour to interior
366		0	0	0	0	0	0	Frags land snail ?Cepea nemoralis	Flakey, RVs thin, 1 v large, notches. Pinky pigment externally
386		0	1	0	0	1	1	Frags large cockle	

Context number	Sample number	Left valve (LV) oyster	Unmeasurable LV oyster	Right valve (RV) oyster	Unmeasurable RV oyster	Total valves oyster (P=present)	Other species	Comments on oysters
412		1	0	0	0	1		Large relatively thin >90MW x 100ML, ribbed, sharp edges
424		0	0	0	0	0		3 pieces ? Fossil/limestone
429		0	1	0	0	1		Very flakey, powdery, eroded. Part of large shell. Frags oyster
462	20	0	2	0	1	3		LV large, irregular heel. Lots broken pieces incl some RV
462	>10mm	0	0	1	2	3		Large, Pc, RV slightly convex
466		0	0	1	1	2		Pc, medium RV
469		0	0	0	1	1	f cockle valve	Frag 1 RV, Pc, v flakey
470		0	1	0	0	1		Frag LV v flakey
484		0	0	1	1	2		1 v large convex RV, Pc, irreg heel, eroded. 3 frags ?fossil
487		0	0	0	0	0		Fossil Gryphea-lik
488		0	1	0	0	1		2 frags v worm oyster + ?frag crab.
504		0	0	0	0	0		Oyster worm, powdery
515	2	0	0	0	0	0		?piece fossil
552	>10mm	1	0	0	0	1		2 frags
555		0	0	1	0	1		Very large LV >95MW x 100ML, irreg heel, rel thin
557		0	0	0	1	1		Flakey, medium, Pc
557	3	0	0	0	1	1		Flakey, medium, Pc
573	>10mm	0	2	0	1	3		Flakey frag, v worm
581		0	0	0	0	0		V worm, flakey, Pc
Totals		7	15	10	19	51		2 frags fossil shell

species
?Acanthocardia
not C. edule



Scale 1:10,000

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Figure 1: Location of Bower Road and associated watching brief

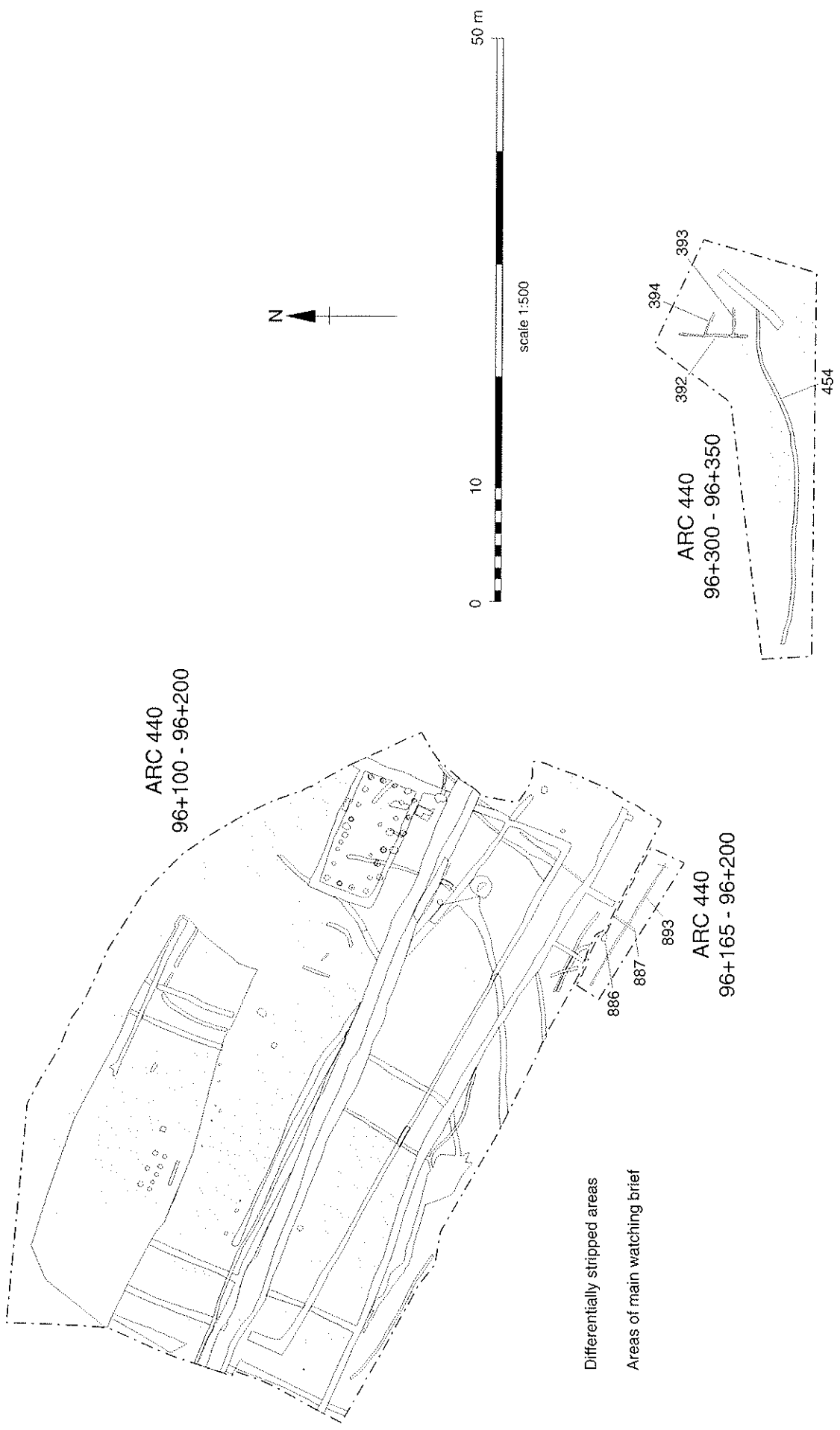


Figure 2: Site plan showing the extent of excavations

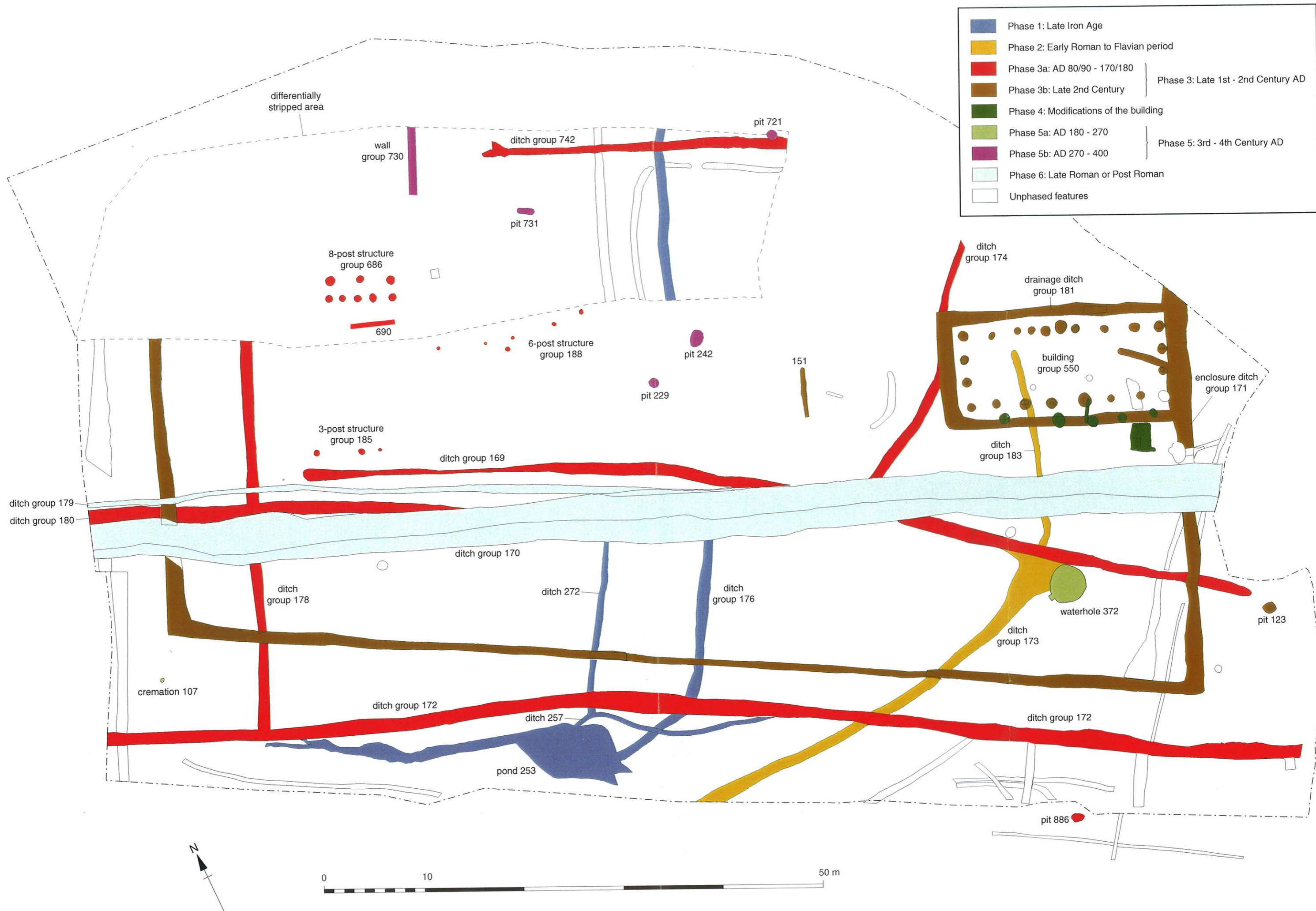
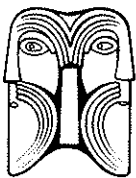


Figure 3: Interpretative site plan showing the phases of occupation



Figure 4: The 19-Post building



OXFORD ARCHAEOLOGICAL UNIT

Janus House, Osney Mead, Oxford, OX2 0ES

Telephone 01865 263800 Fax 01865 793496
email: postmaster@oau-oxford.com www.oau-oxford.com



Director and Chief Executive: David Jennings B.A., M.I.F.A. Oxford Archaeological Unit Limited
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