

Archaeological Field Unit

**Romano-British Settlement Evidence at
31 Tunbridge Lane, Bottisham, Cambridgeshire:
Post-Excavation Assessment and Updated Project Design**

S Kenney

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Cambridgeshire County Council

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Commissioned by Upware Marina Ltd

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1 INTRODUCTION

Excavation has been undertaken in Bottisham, Cambridgeshire (TL 5442/6092). The excavation was commissioned by Upware Marina Ltd., who are redeveloping the site, and was undertaken by Cambridgeshire County Council Archaeological Field Unit (AFU).

The general potential of the site was defined by a phase of evaluation trenching carried out by the AFU in April 2002. Results from the evaluation suggested that a Roman occupation site had survived in the form of earth-cut features such as ditches, enclosure systems, and pits. It was suggested in the evaluation report that the site extended across the whole of the current development area (Kenney 2002). The background contained in the report will not be reiterated here.

In 2000, an excavation was carried out land 100m to the north-east of the present site that further refined the model of archaeological potential. Roman settlement was revealed, including cellared buildings and a yard surface, which have been dated to the 2nd-4th Centuries AD (McDonald 2000).

A summary of the excavation results is presented below, along with the results of post-excavation assessment, and an updated project design for further analysis work leading to publication. This assessment has been carried out in accordance with English Heritage guidance (English Heritage 1991) and the requirements of the agreed specification for archaeological works.

2 AIMS AND OBJECTIVES

The original research framework for the excavation analysis and reporting of archaeological remains at Tunbridge Lane was defined by Cambridgeshire County Council Archaeology Office in their brief (Thomas, May 2002). The following extracts include the original paragraph numbering.

Firstly, the context within which the investigations were taking place was defined:

- '1.2 Situated on Lower Chalk, the site has been subjected to an archaeological field evaluation (Kenney, 2002, *Roman Ditches at 31 Tunbridge Lane, Bottisham*, Archaeological Field Unit Report No A201). The evaluation revealed a series of Roman ditches across the site, and the nature and quantity of finds from them indicates that they were located very close to a settlement. This evidence ties in with the results from an archaeological investigation 100m to the east of the site which partially revealed a Roman villa (McDonald, 2000, *Tunbridge Lane Excavation Interim Report*, Hertfordshire Archaeological Trust Report No. 801)

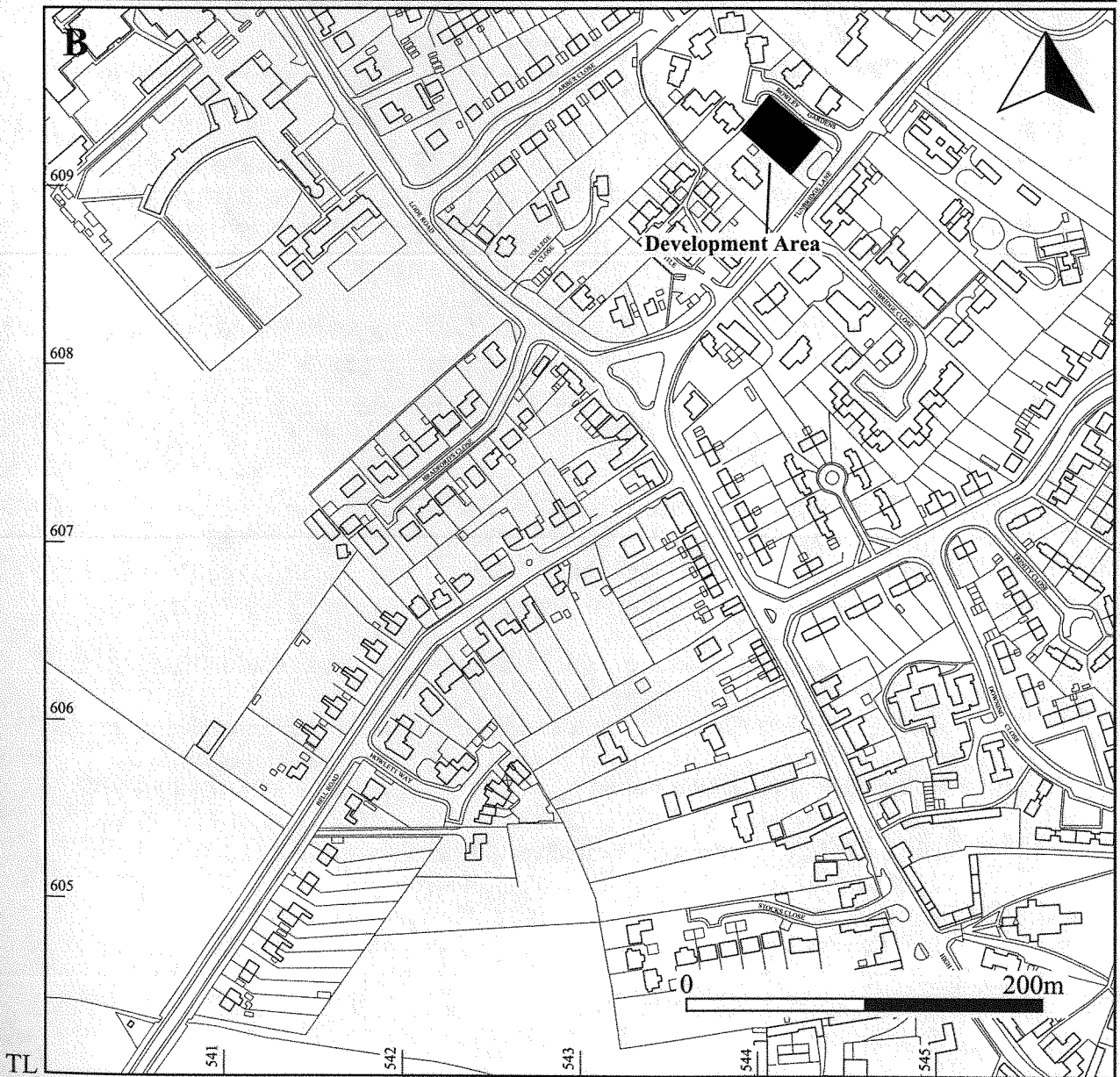
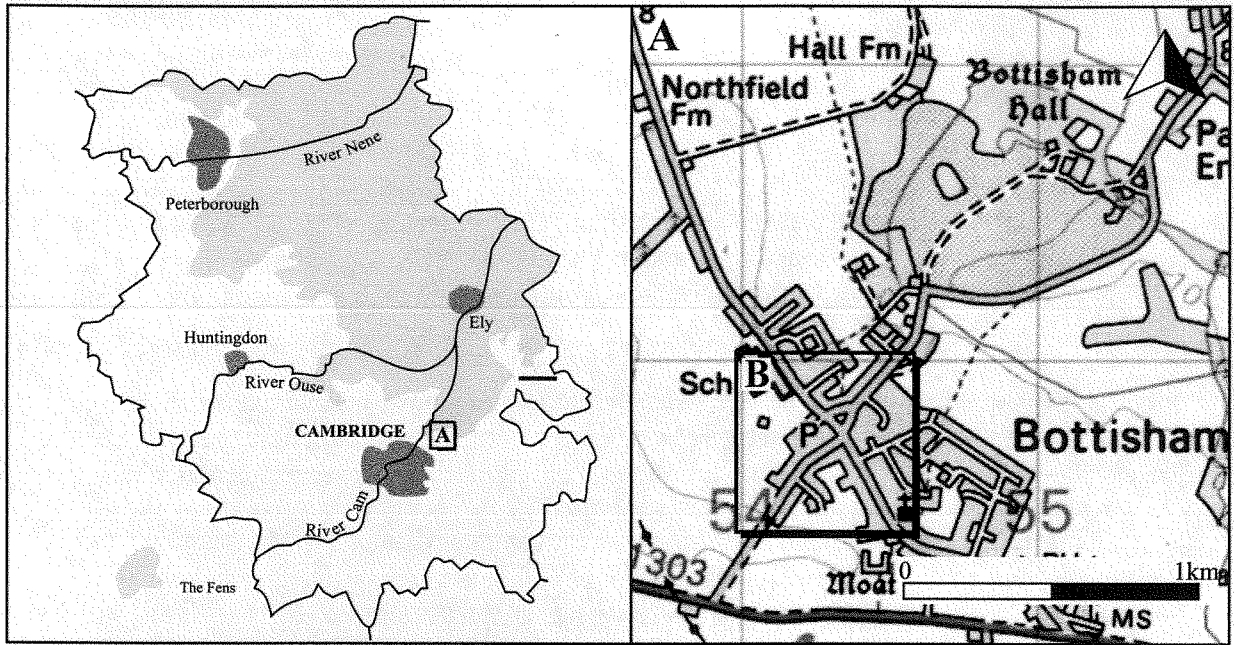


Figure 1 Site location

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Next, the aims and objectives were defined:

‘4.1.1 The primary objective is to preserve the archaeological evidence contained within the site **by record** and to attempt a reconstruction of the history and use of the site. The following research priorities are important considerations, although the project manager is welcome to propose others. Attention is drawn to the issues raised in Glazebrook, J. (ed.) 1997, *Research and Archaeology: A Framework for the Eastern Counties 1. Resource Assessment*. East Anglian Archaeology, Occasional Paper 3 and Brown, N. and Glazebrook, J. (eds.) 2000, *Research and Archaeology: A Framework for the Eastern Counties: 2 Research Agenda and Strategy*. East Anglian Archaeology Occasional Paper 8.’

Furthermore, the research priorities were defined as follows:

‘4.2.1.1 To investigate the nature of the Romano-British activity on the site.’

‘4.2.1.2 To examine the evidence for Romano-British settlement on the site.’

‘4.2.1.3 To identify the relationship between this site and the villa partially revealed in Tunbridge Lane 100m to the east.’

‘4.2.2.4 To produce stratified assemblages of Romano-British pottery to assist in the development of a local type series.’

‘4.2.2.5 To investigate the processes of deposition of domestic debris in differing contexts on the periphery of a settlement.’

English Heritage (1997) identify the following themes which provide the broader framework for this investigation:

‘Processes of change

Briton into Roman (c 300 BC-AD 200)

A high level of continuity in settlement and land use and, by implication, in social and economic organisation, between the Late Iron Age and Romano-British periods is becoming increasingly apparent, as are contemporary regional variations. Increasing awareness of the complexity of the transition, combined with issues of ethnicity, and social and economic dislocation, would seem to offer great potential for exploiting complex data sets.’

In addition, the following objectives were listed in the Specification (Macaulay, 2002):

‘4.1.1 *The characterisation of the form and development history of the settlement.*

Evidence of building demolition and nearby structures were revealed during the evaluation. If further remains of any occupational evidence or domestic buildings survive, their form and associated artefacts will help to define their

function, date and use and any subsequent modifications in form and usage. If evidence of crop or food processing survives (e.g. burnt grain, butchered animal bone) conclusions can be drawn on any agricultural regimes.

4.1.2 *The characterisation of the form, date of establishment, subsequent development of the field systems, and their relationship to the settlement.*

Field systems (and enclosures) of the Roman period have been suggested from both the evaluation and excavation of possible villa to the southeast. If survival of organic materials is sufficiently good samples will be taken from the backfill of ditches in order to try and determine the agricultural regime being followed within the fields (i.e. whether livestock was being pastured or cereals grown).

4.1.3 *The determination of the relationship of the agricultural regime and any associated settlement with the local and regional economy.*

Analysis of artefactual and ecofactual material may determine whether the area was a largely self-sufficient farming community or whether it was producing a surplus of either crops or meat for local population centres. Evidence of large-scale crop processing or butchery will be sought, as will evidence of importation of luxury or specialised items such as fine pottery.

4.1.4 *The creation of a model of land-use and organisation over time.*

The evidence from this project will be set within the framework of existing knowledge of the archaeology of the area and will make a valuable contribution to ongoing local research. In particular this relates to the nearby villa site and the determination of the relationship between the two sites.

4.1.5 *To produce stratified assemblages of Romano-British pottery to assist in the development of a local type series.*

The evaluation (and HAT excavations in 2000) have recovered significant pottery assemblages from stratified deposits. These will be incorporated into on-going local research (Macaulay 2002 Roman pottery research project for the Southern Cambridgeshire fen edge, AFU PXA 33) as well as assessed and incorporated into the existing project.

The results of the excavation and assessment, together with updated project aims and objectives are presented in the following sections.

3 EXCAVATION METHODS

The format for excavation was set out by Cambridgeshire County Council (Development Control) in accordance with established PPG 16 mitigation practice. The programme of work included the excavation of a single open area 0.12ha in extent, to be excavated as two contiguous halves numbered Areas 1 and 2.

A single 360° tracked excavator was employed for the removal of overburden and to stockpile the spoil. The topsoil and any subsoil from Area 1 was stored on Area 2 and the spoil from Area 2 was stockpiled on Area 1 once excavation was completed on the first half of the site. Total overburden (topsoil and subsoil) depth varied between 0.20m and 0.60m over the excavated areas.

After machine stripping, the site was hand-cleaned. Archaeological features were outlined using spray paint in order to assist visibility in poor weather and then planned by hand at a scale of 1:50. A metal detector survey was conducted across the site in order to pinpoint metal finds within features, and certain objects were excavated at this stage. A grid located with respect to the Ordnance Survey was set up during stripping of the first area. Grid pegs were located in each area at 5 metre intervals. These were used to plan excavated features by hand at a scale of 1:50, 1:20 or 1:10. Sections and profiles across excavated features were drawn at a scale of 1:10 or 1:20. All excavated deposits and cuts were described on AFU single context recording sheets. Monochrome and colour photographs were taken to supplement the drawn and written record. Digital photography was also employed to further expand the recording methods and media used.

4 EXCAVATION AREA SUMMARY

Although the two areas of excavation were spatially contiguous, they were not both open contemporaneously, and thus it was a useful tool during excavation to consider them as separate entities. The results laid out below continue this scheme for ease of reference, and use the site grid north, which was approximately 50° west of Ordnance Survey grid north.

4.1 Area 1 (East)

Area 1 consisted of approximately half of the total excavation area. Evaluation earlier in 2002 had clearly demonstrated the presence of large east-west ditches and several smaller features. Both evaluation trenches fell within Area 1, although Trench 2 also extended into Area 2.

The features seen in Area 1 were essentially those first uncovered in evaluation Trenches 1 and 2, i.e. two large ditches and three smaller ones. There were also a number of small pits, often quite shallow, and a small number of postholes. Smaller

ditches or structural slots were evident towards the north end of the area. The single large pit was located in the northeast corner of the site.

While the northernmost large ditch continued to produce significant quantities of many materials, most notably pottery, other features were not as artefact rich, except for the large pit in the northeast corner of the site.

Many features in this first half of the site had no stratigraphic relationships with other features. Much of this lack of stratigraphy was balanced out by subsequent discoveries in Area 2.

4.2 Area 2 (West)

Area 2 consisted of approximately half of the total excavation area. Evaluation earlier in 2002 had clearly demonstrated the presence of large east-west ditches and several smaller features in Area 1, however Area 2 was less well sampled. The evaluation trenches had been placed on the basis of an early draft of the proposed development, and this proposal had changed by the time of the excavation. From the results of excavating Area 1 it was clear that all of the ditches should continue into Area 2, and this proved to be the case

In addition to the ditches, pits and postholes seen in Area 1, the second half of the excavation also revealed new feature types in the shape of burnt flues and a corn drier. Unlike Area 1, there were more stratigraphic relationships evident from which to phase activity on the site

5 PERIOD SUMMARY

5.1 Neolithic or earlier

The excavation produced a few flint artefacts that may belong to the early Neolithic, however, these are all thought to be residual and no features securely dated to the earlier prehistoric periods have been found.

5.2 Bronze Age

A number of Bronze Age worked flints were found in both halves of the site. While some were residual in the fills of later features, others were found at the interface of overlying deposits and the natural.

5.3 Roman

The majority of features uncovered during this excavation were dated to the early Roman period, consisting of ditches, pits, postholes, ovens and flues. During this period, it is apparent that there were several phases of activity on the site, but phasing is still at an early stage and is complicated by the narrow date that the pottery assessment has returned for the lifespan of the site. Further work will be needed before phasing can be finalised, but initial indications are that the site has at least six phases:

- 1) Bronze Age-includes residual Neolithic component
- 2) Late 1st Century AD-one large ditch, possibly several pits
- 3) Early 2nd Century AD-one large ditch and large pit, both full of domestic debris
- 4) Mid-Late 2nd Century AD-one large ditch, several smaller ditches
- 5) 3rd Century AD-at least two ditches, possibly the corn drier
- 6) Medieval-one ditch

Other features have yet to be assigned to these phases

5.4 Medieval

One ditch may belong to this period, but the dating evidence is slight and occurs with Roman pottery, but residuality has not yet been assigned for these deposits.

5.5 Post-Medieval and Modern

A building had recently been removed from the site, and the foundation trenches truncated many of the features, although this in fact did little to hamper excavation and interpretation.

6 ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

6.1 STRATIGRAPHIC AND STRUCTURAL DATA by Scott Kenney

6.1.1 Quantity of material and records

The number of records relating to the excavated features is as follows:

390 context records, of which 289 describe deposits, 98 describe cuts, and 3 refer to layers or interfaces.

6 hand drawn plans at a scale of 1:50; 3 hand drawn plans at a scale of 1:20; 2 hand drawn plans at a scale of 1:10

2 section drawings at a scale of 1:50; 48 section drawings at a scale of 1:20; 2 section drawings at a scale of 1:10

420 photographs

16 sample records

6.1.2 Provenance and dating

The majority of datable deposits can be attributed to the Roman period based on pottery spot dates, stratigraphic and spatial associations and alignment of features. A number of excavated deposits contained no datable finds and their dating therefore relies on other evidence.

In area 1, 95% of the excavated deposits could be dated to the Roman period. The remaining deposits, some 5%, can be attributed to the Medieval and Post-Medieval periods. A single context (interface 400) might be Bronze Age in date.

In area 2, 96% of the excavated deposits could be dated to the Roman period. The remaining deposits, some 4%, can be attributed to the Medieval and Post-Medieval periods. A single context (interface 400) might be Bronze Age in date.

6.1.3 Range and variety

Feature types were almost entirely confined to cut features containing one or more deposits; none were waterlogged. There was some evidence for surviving deposits outside cuts in Areas 1 and 2, in the form of a truncated possible cultivation horizon.

The site was characterised by ditches, both deep boundary ditches of Roman date that apparently formed an agricultural system. A small number of pits were excavated which can be attributed to the Middle Iron Age and two pits were dug that may belong to the Late Bronze Age. Two buildings could be discerned in plan on the site, both at the northern end, and both roundhouses dating from the Middle Iron Age.

Table of excavated feature types by area. These are numbers of features rather than numbers of excavated sections, and include several large ditches.

Area	Pits	Ditches/gullies	Post holes	Ovens/Driers
1	12	13	13	0
2	11	15	0	2

6.1.4 Condition

The archaeological deposits were horizontally truncated across the site, and there was no evidence for buried soils or surviving surfaces associated with the buildings. The worked flint found at the interface of the overlying deposits with the natural inferred an earlier horizon, but this had also been lost. Topsoil and other overburden was between 0.2 and 0.7 metres in depth. Intrusions from post-medieval or modern features were relatively frequent, due to the Old Surgery building previously present on the site.

Features were a mixture of intercutting and discrete, and these stratigraphic relationships may be used to aid in phasing of the site, alongside the pottery spot dating, morphology and other evidence.

6.1.5 Primary sources/documentation

The records for excavated deposits are complete and have been checked for internal consistency. Written records have been completed on archival quality paper using light-fast, waterproof ink, and are fully indexed. Drawn records are in pencil on film, and are clear, annotated, and fully indexed. A matrix has been produced for those areas of the site that had greater stratigraphic complexity than simply below topsoil and above natural.

Primary records for both the evaluation and the excavation are all retained at AFU offices, Fulbourn, Cambridge.

6.1.6 Means of collecting the data (method of assessment)

The primary paper records have been checked in conjunction with the site matrices and the assessments of artefactual and ecofactual materials to amass the information for this assessment. General finds information for individual contexts has been collated using the computer database. Preliminary grouping of contexts into discrete features has been undertaken. Raw stratigraphic phasing has been used as a tool to aid in grouping the intercutting features. Phase interpretations will also draw on artefact dates, spatial associations and alignments.

6.1.7 Selection of data for further analysis

By setting the site within its local and regional context, it is possible to assign a scale of significance to the remains from different periods. Most significant would be the Roman, with the small number of Pre- and Post-Roman contexts the least significant. It is therefore suggested that those contexts that are thought to be Roman in date are subjected to the most rigorous analysis, with particular emphasis on any potential chronological overlap with the HAT site.

6.1.8 Statement of potential

The contextual data is likely to be sufficient to provide a solid foundation on which to build the site narrative. A wide range of the available context types were fully excavated and recorded. In addition, the archaeological features present on the development area were all recorded in plan. The presence of buildings and settlement boundary features will provide a good base for the analysis and interpretation of spatial and typological distributions.

It is crucial that the site data is properly analysed and reported on in order that it may form a solid foundation upon which the finds data can be based. Without a solid, well-constructed and cross-referenced site database, information from other sources is likely to be compromised.

Establishing a dating sequence will be crucial in establishing phasing sequences and will help to establish a tighter dating sequence for similar sites elsewhere in the region.

6.1.9 Analysis methods and quantity statement

It is suggested that the site data is subjected to rigorous analysis. All contexts dating to the main period of occupation should be grouped and phased based on information from pottery, scientific dating techniques, and based on feature types and their spatial distribution. This information should then be distributed to specialists so that they are able to analyse the different material categories on the basis of the contextual data. The site report will be based on a combination of the contextual data and the reports compiled by individual specialists, it is therefore envisaged that the final report will not be written until all specialist analysis is completed. Reference to, and comparison with other sites of a similar period and type will be made wherever possible. In particular it is thought that some useful comparisons could be made with Hertfordshire Archaeological Trust's excavation across Tunbridge Lane.

6.1.10 Potential of methods to meet aims and objectives

By subjecting the contextual data to rigorous analysis and incorporating all the specialist data into the site record it should be possible to produce a database and report which can be used for useful comparison with other excavations of Roman sites. A number of stratigraphically linked context groups can be used to establish phasing for the site and this will be dated by reference to the pottery. Useful work will be done on spatial distribution and comparison of feature types. It is thought likely, for example that associations between individual boundary ditches may be established in order to assess the longevity of the various settlements and whether there are any signs of zoning in activities, status and so on within the settlement(s). It will be especially important to identify when settlement ceased to exist in this area and whether there is any continuity other than the trackway into the medieval period

6.1.11 Task list (accompanied by estimate of time)

Compile groups and phasing for distribution to specialists	6 days (PO)
Liaise with specialists and incorporate specialist reports	3 days (PO)
Compile illustrations list and liaise with illustrator	1 day (PO)
Write excavation report	10 days (PO)
Contribute to report, the site in its regional context	1 day (FUM)
Complete Archive	3 days (PO)
Edit Report	1 day (PM)
Incorporate edits	2 days (PO)
Proof reading	1 day (PM)
Draw and mount maps/plans/sections/pot drawings	6 days (ILL)

Where Cons = Conservator, ENV = Environmental supervisor, ILL= Illustrator, PM = Project Manager, PO = Project Officer, FUM= Field Unit Manager

*The above does not include publication staff costs.

6.2 POTTERY by Jeremy Evans

6.2.1 Quantity and Provenance

Some 3924 sherds of mainly Roman pottery from the excavation at Tunbridge Lane, Bottisham, Cambridgeshire were presented for assessment. None of the sherds have been marked and this needs to be done prior to their deposition in a museum. 'Belgic' wares are largely absent, there being only 1.4%, which suggests the assemblage has no element pre-dating AD60/70.

Trajanic forms such as London ware and mica-dusted wares are relatively common, as are forms such as reeded rimmed bowls amongst the Horningsea ware, suggesting strong Flavian-Trajanic to early Hadrianic pottery deposition. Horningsea produced very large numbers of BB2 copies in the later 2nd century, particularly bead-rimmed dishes and bowls, these are present in the assemblage, but in low numbers, suggesting pottery deposition after *c*AD 150 was weak. This is confirmed by rare occurrence of Nene Valley colour-coated wares, which form a small minority of the finewares present, rather than dominating the group as is usual in this region, again confirming little pottery deposition on the site after *c*AD 160. Occasional pieces suggest sporadic pottery deposition in the 3rd century and perhaps later.

The Samian ware generally confirms this. The Samian assemblage is dominated by South Gaulish material, at 49%, with a strong representation of Les Martres-de-Veyre at 10%, followed by 39% Central Gaulish wares and 1.2% of East Gaulish material. There is no Neronian Samian in the assemblage and the earliest piece is a 15/17 with a date range *c*AD 60-85. Given the lack of class E fabrics from the site it would seem likely that pottery deposition started in the decade *c*AD70/80. Most of the Central Gaulish material is of Hadrianic-early Antonine date, with the two latest pieces dated *c*AD 140-60, suggesting, like the coarse pottery, that pottery deposition more or less ceases around the middle of the 2nd century.

Table 001 Approximate fabric proportions by ware class from stratified features

Fabric class	% count	Fabric class	% count
A01 Dressel 20	2.8	O00	3.0
A11 Pelichet 47	0.2	Q00	1.0
A00	0.03	R00	9.7
B01	0.4	R01 Horningsea	72.5
C00	1.1	S00	2.2
E00	1.4	W00	4.4
F00	0.7	Z20	0.1
G00	0.03	Z30	0.03
M00	0.5	n	3924

Table 001 shows an approximate quantification of fabrics from the site, by general

ware class. Amphorae are surprisingly common in the assemblage, something not found on basic level rural assemblages. BB1 is present, but in very low quantities, as might be expected at this location. Shelly wares are very poorly represented, in contrast to sites in northern Cambridgeshire their being replaced here by Horningsea wares.

As noted above the low representation of class E fabrics demonstrates the site does not commence until after these were current. Finewares are poorly represented; this is mainly a chronological phenomenon, with only a few sherds of Nene Valley wares because the assemblage was mainly deposited before cAD 160. Most fineware are mica-dusted wares, London wares or poppyhead beakers of Trajanic date. Mortaria are uncommon, a few Verulamium region sherds are present, otherwise fabrics are likely to be of fairly local origin, and early mortaria do not seem to be very common in the region on rural sites.

The vast majority of the assemblage consists of Horningsea wares, as might be expected from a site fairly close to the kiln site. Many forms in the Horningsea assemblage here are not well known, a result of the early date range of this collection, which is not well represented in any of the Horningsea kiln groups.

Samian ware at 2.2% is also fairly poorly represented, and the overall level of Samian and finewares at 2.9% is within the usual range of basic level rural sites. Similarly the level of decorated Samian ware in the assemblage, at around 15%, is low and consistent with that from a basic level rural site.

Table 002 approximate functional analysis of the Bottisham assemblage by minimum numbers of rims

Flagons	1.9%
Constricted-necked jars	0.2%
Storage jars	4.5%
Jars	48.8%
Jar/Bowl	0.4%
Jar/Beaker	1.2%
Bowls	17.3%
Dishes	8.2%
Bowls/Dishes	3.3%
Mortaria	0.6%
Lids	8.2%
Lid/Bowl	0.2%
N	513

Table 002 shows an approximate functional analysis of the assemblage as a whole (by minimum numbers of rims). The assemblage is dominated by jars, with comparatively low levels of tablewares. Lids are quite well represented, which probably represents

the early date of the assemblage and their production at Horningsea. Mortaria are quite poorly represented, which reflects the early date of the assemblage and the generally low level of these on southern rural sites.

Overall most of the indicators of site type suggest a basic level rural site, however, the level of amphorae is remarkably high for such, and this might indicate connections with the adjacent villa.

A further site at Bottisham was excavated by HAT in Tunbridge Lane (McDonald 2000). This appears to be of generally later date, although it is very unspecific about the dating evidence available. The presence of 36 sherds (in 524) of Nene Valley colour-coated ware demonstrates pottery deposition here in some scale in at least the mid-late Antonine period.

6.2.2 Summary of potential

Questions posed in the excavation research design to which the pottery can contribute are;

4.1.1 The characterisation of the form and development history of the settlement.

The chronological evidence from the pottery is essential to this.

4.1.3 The determination of the relationship of the agricultural regime and any associated settlement with the local and regional economy.

Again this can only be done with a reasonable knowledge of the chronology of the site, the evidence for which will come principally from the pottery.

4.1.4 The creation of a model of land-use and organisation over time.

The evidence from this project will be set within the framework of existing knowledge of the archaeology of the area and will make a valuable contribution to ongoing local research. In particular this relates to the nearby villa site and the determination of the relationship between the two sites.

Again the chronological evidence from the pottery is a necessary pre-condition for any land use modelling. Further evidence from ceramic indicators such as the levels of finewares, levels of decorated Samian ware, the functional composition of the assemblage and the level and nature of the amphora assemblage may all help to indicate the nature of activity on the site and its relationship with the nearby villa site.

4.1.5 To produce stratified assemblages of Romano-British pottery to assist in the development of a local type series.

The excavation has succeeded in recovering a reasonable sized assemblage with a large component of Horningsea wares, as might be expected given its proximity to the kiln site. This will be of considerable value in providing data to the English Heritage pottery project on Horningsea wares (Macaulay 2002 Roman pottery research project for the Southern Cambridgeshire fen edge, AFU PXA 33), particularly since most of the material is of Flavian-Hadrianic data, a period not represented in any of the kiln groups currently available.

6.2.3 Storage and curation

All the stratified material should be retained and requires no particular conservation measures other than stable storage conditions. Discard of the unstratified material is

not recommended, but if it is to be undertaken the mortaria, amphorae, Samian, stamped vessels and those bearing graffiti should all be retained, as should vessels which are good examples of their type and a record should be kept of all material discarded.

6.2.4 Specific Research Aims

The pottery will provide a major contribution to the following research aims;

- 1) Determining the chronology of the site sequence
- 2) Examining exchange and supply to the site
- 3) Examining the nature and status of activity on the site
- 4) Providing a large group of Horningsea wares, of a restricted date-range that is not well-represented in any of the excavated kiln groups, which will assist in developing a chronology for the Horningsea industry.

6.2.5 Publication synopsis

The report will consider the chronological evidence for the site sequence, without which the structural sequence would remain just that, without any relationship to other sites. It will then examine the various classes of ceramic fabrics occurring on the site, the fabrics within them and the evidence they provide for supply to the site and the changes in this through time.

The functional composition of the coded assemblage and levels of finewares will be examined in order to provide the data to compare the site with others and characterise the nature of the pottery assemblage from the site and the nature and status of activity on the site. The information assembled will then be discussed further placing the site in its local setting.

Introduction

Chronology

Amphorae

Black-Burnished wares

Shell-tempered wares

Grog tempered wares

Colour-coated wares

Gritted wares

Mortaria

Oxidised wares

Greywares

Samian

Whitewares

Functional analysis and finewares

Discussion of site status and supply to the site and its relationships to other local sites

6.2.6 Methods

The stratified ceramics will be recorded by sherd numbers, weight, RE and minimum numbers of rims for form and fabric. The material will generally be illustrated most economically by a fabric and form type series. The quantification of form data is one of the most important recommendations of the Fulford report (Fulford and Huddleston 1991, sections 4.3.3 and 5.4.1) and this will be tabulated for each fabric by phase.

6.2.7 Resources and programming

Staff

i) Dr J Evans, freelance Archaeological consultant.

ii) Tasks

- 1) Code stratified coarse pottery
- 2) Input coding
- 3) Specialist identify and report on Samian ware - M Ward (Samian expert)
- 4) Draft report
- 5) Select sherds for drawing
- 6) Proofs

Task	Time
1	26days
2	1 days
3	-
4	13 days
5	1 day
6	1 day
Total	42 days

No more than 200 coarse pottery drawings and no more than 4 Samian drawings should be required.

6.3 FAUNAL REMAINS by Ian Baxter

6.3.1 Quantity and Provenance

A total of 157 'countable' (see below) fragments of animal bones were hand-collected from the site (Table 1) and a further 54 fragments recovered from environmental samples (Table 2). The bone is generally well preserved and found in ditches, pits, gullies and postholes. Most of the features at the site date from the first to second century AD with very little evidence of activity after the middle of the second century (Evans unpublished). This contrasts with the site to the west excavated by Hertfordshire Archaeological Trust (Tunbridge Lane I) with features dating from the second to fourth centuries AD (McDonald 2000). Both sites had been provisionally thought to belong to the same villa complex.

6.3.2 Methods

The mammal bones were recorded following a modified version of the method described in Davis (1992) and Alberalla and Davis (1994). In brief, all teeth (lower and upper) and a restricted suite of parts of the postcranial skeleton was recorded and used in counts. These are: horncores with a complete transverse section, skull (zygomaticus), atlas, axis, scapula (glenoid articulation), distal humerus, distal radius, proximal ulna, carpal 2+3, distal metacarpal, pelvis (ischial part of acetabulum), distal femur, distal tibia, calcaneum (sustenaculum), astragalus (lateral side), centrotarsale, distal metatarsal, proximal parts of the 1st, 2nd and 3rd phalanges. At least 50% of a given part had to be present for it to be counted.

The presence of large (cattle/horse size) and medium (sheep/pig size) vertebrae and ribs was recorded for each context, although these were not counted. "Non-countable" elements of particular interest were recorded but not included in the counts. For birds the following were always recorded: scapula (articular end), proximal coracoid, distal humerus, proximal ulna, proximal carpometacarpus, distal femur, distal tibiotarsus, distal tarsometatarsus.

The separation of sheep and goat was attempted on the following elements: horncores, dP₃, dP₄, distal humerus, distal metapodials (both fused and unfused), distal tibia, astragalus, and calcaneum using the criteria described in Boessneck (1969), Kratochvil (1969), and Payne (1969 and 1985). The shape of the enamel folds (Davis 1980; Eisenmann 1981) was used for identifying equid teeth to species. Equid postcrania were checked against criteria summarised in Baxter (1998).

Wear stages were recorded for all P₄s and dP₄s as well as for the lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. Tooth wear stages follow Grant (1982).

Measurements are listed in Appendix 2. These in general follow von den Driesch (1976). All pig measurements follow Payne and Bull (1988). Humerus HTC and BT and tibia Bd measurements were taken for all species as suggested by Payne and Bull (1988) for pigs. Measurements taken on equid teeth follow Levine (1982).

6.3.3 Frequency of Species

Two partial perinatal human infant skeletons were found in Ditch (190) and Pit (158). These are described in Appendix 1.

In common with the later HAT site (Tunbridge Lane I), cattle are by far the most frequent taxon accounting for 61% of the main domestic mammals (Figure 1). The Tunbridge Lane II site contrasts with the later site and other Cambridgeshire Romano-British rural sites in the relatively high frequency of pig remains, 20%. Like Tunbridge Lane I and unlike Haddon Lodge and Orton Hall Farm, sheep are relatively infrequent accounting for only 15% of the major domestic mammals. Horse is much less common than at site I accounting for 4% compared to nearly 20%. Wild mammals together with both wild and domestic bird species are much more frequent at site II. That this is not due entirely to the fact that no environmental samples were taken at site I is demonstrated by the wide range of bird species hand-collected at site II (Table 1)

Cattle

Only two measurable cattle horncores were recovered from site II. Both are from adult oxen (castrates) but in neither case can their length be established. While shorthorns and "Celtic" smallhorns are the most common cattle types found in Romano-British Cambridgeshire, mediumhorns, i.e. cores with an outer curve measuring 220-360mm (Armitage 1982), comprised one third of the cattle types at Orton Hall Farm (King 1996). The Tunbridge Lane cores could derive from mediumhorn cattle. The only suitable bone sufficiently complete to be used to calculate a withers height is a radius from Ditch (109). This came from a beast 123cm high at the shoulder based on the multiplication factors of Matolcsi (1970) which is the same as the mean recorded at site I (Baxter 2001). Plots of the few measurable cattle metapodials from site II show little difference in size from those found at site I (Figure 2).

As with site I the majority of mandibles recovered (Figure 3) and long bones with epiphyseal ends preserved derive from adult and old adult cattle. All parts of the cattle skeleton are represented in the assemblage and cattle sized rib and vertebra fragments widespread indicating the onsite butchery of whole carcasses. Butchery marks are frequent with most bones fragmented. Three articulating neck bones (CV6-TV1) were found associated in Ditch (190).

An ankylosed (fused) centrotarsale and tarsal 2+3 were found in Ditch (318). This probably came from a draught animal (Baker & Brothwell 1980; Bartosiewicz *et al.* 1997). A mandible found in Ditch (106) has a vestigial supernumerary pillar between the normal pair on the lingual side of M₁. A more usual dental abnormality is the absence of the third pillar or hypoconulid of M₃ demonstrated by a mandible from Ditch (304). Metallic calculus deposits were seen on several cattle teeth. The precise cause is presently unknown but may be associated with wetland grazing.

Sheep

As already noted above, sheep remains are relatively infrequent at both Tunbridge Lane sites. No bones or teeth attributable to goat were seen and the ovicaprid remains most probably exclusively derive from sheep. Fragments from site II include a foetal/perinatal metatarsal diaphysis shaft found in Pit (101) and a perinatal humerus diaphysis found in Ditch (314), suggesting that sheep were being bred in close proximity. Most of the few available mandibles belong to animals with M₃ unerupted or not in full wear and less than four years old. All parts of the skeleton are represented in the assemblage including sheep sized vertebra and rib fragments suggesting that entire carcasses were being processed. The only suitable bone sufficiently complete to provide a withers height estimate is a calcaneum from Ditch (107). This came from an animal 69cm high at the shoulder based on the multiplication factors of Teichert (1975).

Pig

After cattle, pig is the most frequent domestic mammal at Tunbridge Lane II. All parts of the skeleton are represented indicating the processing of entire carcasses. Some bones are scorched and probably derive from roasts. Both male and female canines were recovered, a perinatal femur diaphysis was found together with immature cranial fragments in Ditch (190) and the partial skeleton of an unweaned piglet was found in

Gully (234), suggesting that pigs were being raised in close proximity.

High frequencies of cattle and pig compared to sheep/goat are generally considered to characterize more Romanized settlements (King 1978). In cases where pigs are being raised on site, as at Tunbridge Lane II, they would presumably also require a sufficiency of adjacent woodland in which to forage.

Other domestic mammals

The other domestic mammals at Tunbridge Lane II are horse, dog and cat.

Horse

As already noted above, horse remains are relatively infrequent in contrast with the later Tunbridge Lane II site. They include two M₂s found in Ditches (202) and (109) from animals approximately 6 and 8 years old based on the comparative wear curves of Levine (1982). In common with other Romano-British rural sites, the horses will generally have been pony-sized animals little changed from the pre-Roman Iron Age.

Dog

Bones of domestic dogs are also scarce at Tunbridge Lane II. Two adjacent metacarpals from the foot of a fairly large animal 54cm high at the shoulder (based on Clark 1995) were found in Pit (101) and the innominate of an animal of similar size in Ditch (202). Foxes or other dogs had gnawed the metacarpals.

Cat

Two cat partial skeletons were found in Ditches (127) and (346). From the size of the bones and teeth these seem more likely to be domestic animals than wild cat (*Felis silvestris*). Domestic cats are uncommon on rural Romano-British sites in Cambridgeshire, being absent from Tunbridge Lane I and Haddon Lodge but present in the last three phases (225/250-early C6th AD) at Orton Hall Farm (King 1996). Both of the Tunbridge Lane II individuals were fairly young animals with unfused or recently fused epiphyses.

Domestic birds

The remains of domestic birds are relatively frequent at the Tunbridge Lane II site and account for 8½% of domestic food species. Isolated chicken bones outnumber goose occurrences by 3:1. However, the geese include two partial skeletons in Ditches (190) and (246). The five bones in (190) are from the right wing. The six bones from (246) include a posterior cranium and a furcula (wishbone) with a cut near the point of attachment. All the goose bones are greylag/domestic in size and could equally well belong to either domestic or wild birds.

Wild species

The remains of wild species are relatively frequent at Tunbridge Lane II, particularly birds. This is not entirely due to the adoption of an intensive environmental sampling strategy as many of the bones were hand-collected.

Mammals

The metacarpal of a fox (*Vulpes vulpes*) was found in Pit (101) and a fragment from the shaft of a roe deer (*Capreolus capreolus*) metatarsal in Ditch (156). Micro-

mammals recovered from the sample residues include shrews (*Sorex araneus* and *Neomys fodiens*), house mouse (*Mus* sp.), wood mouse (*Apodemus* sp.) and field vole (*Microtus agrestis*).

Amphibians

The bones of anuran amphibians, including both frog (*Rana* sp.) and toad (*Bufo bufo*) were found in the sample residues.

Birds

The wide range of wild bird species found is a particularly interesting aspect of this site.

At least seven taxa are present. Raven, crow/rook, waders (especially woodcock) and kite are relatively common finds (Parker 1988). Perhaps surprisingly only one bone of a duck is present and this is not of the commonly found mallard/domestic, teal, or wigeon. Instead the morphology matches one of the diving ducks with scaup (*Aythya marila*) the closest probable match. This is a relatively common winter visitor. A large individual of the resident tufted (*A. fuliga*) is also possible. The putative scaup bone came from Ditch (246). As noted above, the goose remains could be from either domestic geese or the wild greylag.

Also present is the almost complete skeleton of a corncrake (*Crex crex*). This is a rare find at any period. This is a summer visitor (mainly present May to August) to northern Europe from Africa, breeding in hay meadows, cereal crops and similar habitats (Snow & Perrins 1998). It is now absent in England and uncommon in the former stronghold of Ireland, due in part to changes in agricultural practises (Reid-Henry & Harrison 1988). The moist hay meadows of the Cambridge area would have been ideal for this ground-nesting migrant. The corncrake skeleton was found in Ditch (190) along with other remains including a stillborn human infant.

The only butchery evidence seen on any of the wild bird bones is on a woodcock (*Scolopax rusticola*) tarsometatarsus from Ditch (109), which has been cut at the proximal joint.

Fish

Eel (*Anguilla anguilla*), herring (*Clupea harengus*), pike (*Esox lucius*) and Cyprinidae (chub/roach family) are present. Apart from the herring, which is an obligate marine species, all the fish could have come from local streams.

6.3.4 Discussion and conclusion

This is a small assemblage and the only really significant difference that can be ascertained in the relative proportions of the domestic stock represented at this site and the later Romano-British site to the west (Tunbridge Lane I), or other rural Romano-British sites in Cambridgeshire as a whole, lies in the high numbers of pig remains. This is much higher than the other sites and implies that this site is possibly more Romanized and/or more proximate to adjacent woodland suitable for pigs to forage in. The wild mammal, bird, amphibian and fish remains also suggest woodland nearby, together with bodies of water and moist hay meadows. It is also possible that the Tunbridge Lane II site was closer to areas of human habitation and food preparation/consumption than the Tunbridge Lane I site, as such a location would be

expected to contain greater evidence of the smaller domestic mammals, in particular sheep and pigs, and birds than more peripheral locations (Wilson 1996).

Acknowledgement

The author would like to thank Sheila Hamilton-Dyer for identifying the fish remains and most of the wild bird bones.

6.3.5 Selection of data for further analysis

No further analysis of the assemblage is warranted.

6.4 ENVIRONMENTAL by Val Fryer

6.4.1 Quantity and Provenance

Excavations at Tunbridge Lane, Bottisham were undertaken in the summer of 2002 by the Cambridgeshire County Council Archaeological Field Unit. The work revealed features of early first century A.D. date including pits, ditches, hearths/flues and a possible malting oven or corn dryer.

Samples for the extraction of the plant macrofossil assemblages were taken from across the excavated area and fifteen were submitted for assessment.

6.4.2 Methods

The samples were processed by a member of the Archaeological Field Unit team, collecting the flots in a 500 micron mesh sieve. The dried flots (or sub-samples thereof) were scanned under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Tables 1 –3. Nomenclature within the tables follows Stace (1997). All recorded plant remains were preserved by charring. Modern contaminants including seeds/fruits and arthropod remains were present throughout.

6.4.3 Results of Assessment

Plant macrofossils

Cereal grains/chaff and seeds of common weed species were present at varying densities in all samples. Although the macrofossils were generally well preserved, some grains were puffed and distorted as a result of high temperatures during combustion and a small proportion of the chaff elements were very fragmented.

Cereals

Oat (*Avena* sp.), barley (*Hordeum* sp. - including rare asymmetrical lateral grains of six-row barley (*H. vulgare*)), rye (*Secale cereale*) and wheat (*Triticum* sp.) grains were recorded, with wheat being predominant. Elongated 'drop-form' grains typical of spelt wheat (*T. spelta*) were abundant throughout but rounded grains, probably of bread wheat (*T. aestivum/compactum*) type were also noted. Spelt glume bases were also common or abundant and complete spikelets, with the glumes still enclosing the grains, were recorded from samples 12 and 14. Indeterminate silica skeletons (predominantly awn fragments but possibly including glume beak fragments) were common in samples 8 and 13.

Wild flora

Seeds/fruits of common weed plants were present at low to moderate densities in all but sample 6. Segetal taxa were predominant, and included corn cockle (*Agrostemma githago*), stinking mayweed (*Anthemis cotula*), brome (*Bromus* sp.), corn gromwell (*Lithospermum arvense*), indeterminate grasses (Poaceae), dock (*Rumex* sp.) and vetch/vetchling (*Vicia/Lathyrus* sp.).

Wetland plant macrofossils, principally nutlets of sedge (*Carex* sp.), spike-rush (*Eleocharis* sp.) and saw-sedge (*Cladium mariscus*), were noted in samples 3, 4, 5, 10, 15 and 16.

A single small fragment of hazel (*Corylus avellana*) nutshell was the only tree/shrub macrofossil recorded.

Other plant macrofossils

Charcoal fragments were common or abundant in all but sample 8. Other plant macrofossils included indeterminate culm nodes, inflorescence fragments, seeds and small pieces of charred tuber.

Molluscs

Although specific sieving for molluscan remains was not undertaken, shells (including burnt specimens) were noted in all but sample 6. Some (including the abundant specimens of *Cecilioides acicula*) may be modern in origin, but the remainder are probably contemporary with the contexts in which they were found.

All four of Evan's (1972) ecological groups are represented, namely woodland/shade-loving species (*Carychium* sp., *Clausilia* sp., *Discus rotundatus* and *Punctum pygmaeum*), open country species (*Pupilla muscorum*, *Vallonia costata*, *V. pulchella*), catholic species (*Cochlicopa* sp. and *Trichia hispida* group) and marsh/freshwater slum species (*Lymnaea* sp. and *Vertigo* sp.). Rare shells of freshwater obligate species (namely *Anisus leucostoma* and *Valvata cristata*) were noted in samples 3, 5, 9, 15 and 16.

Other materials

The fragments of black porous 'cokey' material, black tarry material and the siliceous globules may be derived from the combustion of organic remains (including cereal grains and straw/grass) at very high temperatures. Other materials included fragments of bone, fish bone and eggshell and mineralised or faecal concretions.

6.4.4 Discussion

Of the fifteen samples assessed, five (samples 10, 11, 12, 13 and 14 – Table 1) were taken from a group of features tentatively identified by the excavator as a corn dryer or malting oven. Cereals (principally wheat) and chaff are predominant within the assemblages and a small number of segetal weed seeds are also present. Although detached cereal embryos and sprout fragments are recorded, the density is very low and it appears most likely that all are derived from grains which accidentally germinated during storage. It therefore appears unlikely that the structure functioned as a malting oven. However, the presence of a small number of whole spelt spikelets may indicate that it was used for parching grain prior to threshing. Processing waste

was commonly used as a fuel for this process and evidence from other Roman sites (for example Rectory Farm, Godmanchester (Murphy, forthcoming)), suggests that accidental catastrophic fires often occurred which resulted in mixed batches of burnt grain and fuel residues, as are seen at the current site. The mineralised faecal concretions within samples 13 and 14 appear inconsistent with the remainder of the assemblages and cannot be adequately explained at present.

A further five samples (2, 4, 5, 6 and 15 – Table 2) were taken from other hearths or flue type structures. Of these, samples 5 and 15 both possibly contain fuel residues, including cereal chaff, weed seeds and charcoal. The presence of common saw-sedge nutlets in sample 15 may be of particular interest. Similar densities of fruits were noted at Rectory Farm, Godmanchester (*ibid.*) where they have been provisionally interpreted as residues from either sedge litter or sedge peat, which were used as fuel in the corn-dryers. The remaining assemblages contain insufficient material to be conclusively interpreted.

Of the remaining samples (Table 3), 3 and 9 were taken from the fills of ditch 247 and sample 16 was taken from a later re-cut of the same feature. All appear to contain a low to moderate density of burnt cereal processing debris (possibly fuel residues), which was presumably deliberately dumped within the ditch. The presence of wetland plant macrofossils and occasional marsh and freshwater mollusc shells within these assemblages is currently somewhat puzzling. Although the former may be derived from fuel (see above), the mollusc shells are not burnt, and as it appears unlikely that the ditches were ever wet enough to sustain a freshwater mollusc population, their origin is uncertain. However, it is possibly of note that un-burnt freshwater mollusc shells were also noted in flues [232] and [276]. Although the structural nature of these features is currently unknown to the author, this may indicate that the shells are derived from river clays, which were used as lining material for the flues. Sample 8 was taken from the ashy fill of ditch 273. The composition of the assemblage is very similar to the material found within the 'corn-dryer' (see above), and this may be a discrete dump of material from a similar source.

6.4.5 Conclusions

In summary, the predominance of cereal processing debris within the assemblages would appear to indicate that the preparation and processing of grain (principally wheat) was of prime importance to the local economy. The presence of a possible corn-dryer or parching oven appears to support this hypothesis. Whilst some of the debris recovered may be indicative of primary processing waste, which has been burnt and deposited across the site, some assemblages (most notably those from the 'corn-dryer') appear to contain debris in a secondary context where it has been used as fuel. The assemblages recovered are closely paralleled by material from a later Roman site at Rectory Farm, Godmanchester (*ibid.*).

Assemblages from Roman corn dryers are now reasonably well documented. For the current site, although the assemblages are quantifiably viable (i.e. 200+ specimens), further analysis would add little to the overall interpretation of this structure or other features noted during the excavation. Therefore, no further work is recommended.

6.5 METALWORK by Nina Crummy

6.5.1 Quantity

A total of 262 pieces of metalwork were examined, plus a group of sherds from a crucible associated with a small quantity of metal-working debris. Most of the objects are Roman, but a few are post-medieval or modern. Iron nails formed the largest part of the assemblage, and few functional categories other than tools and fittings are represented by several items.

6.5.2 Condition

The copper-alloy objects and lead objects are in fair condition, but some need to be stabilised soon to ensure their long term survival. Most of the iron nails and small fragments are covered in a solid layer of corrosion, but in contrast the other ironwork has generally little surface corrosion. The objects are packed to a good standard of storage in either crystal boxes or polythene bags, supported in both cases by pads of foam. The bags and boxes are stored in large airtight Stewart boxes with silica gel.

6.5.3 Assemblage

The assemblage breaks down by material thus:

<i>copper-alloy</i>	21
<i>?silver</i>	1
<i>lead</i>	4
<i>iron</i>	236
<i>ceramic</i>	1
<i>Total</i>	263

Many of the bags of nails, some of other ironwork, and one of copper-alloy contain several items. The maximum number is given here. The objects are broken down by function and date below, with those not diagnostic of date given as Roman, and those of uncertain identification given in brackets. No attempt has been made to divide the nails by date.

<i>coins</i>	<i>Roman</i>	7
	<i>modern</i>	1
<i>dress accessories</i>	<i>Roman</i>	1 + (2)
	<i>modern</i>	1
<i>toilet instrument</i>	<i>Roman</i>	1
<i>writing equipment</i>	<i>Roman</i>	(1)
<i>weight</i>	<i>?post-medieval</i>	1
<i>tools</i>	<i>Roman</i>	4 + (1)
<i>fittings</i>	<i>Roman</i>	8
	<i>modern</i>	1
<i>nails</i>	-	208
<i>metal-working debris</i>	<i>Roman</i>	4
<i>uncertain</i>	<i>Roman</i>	16
	<i>modern</i>	6
		263

Post-medieval and modern material is not further discussed. The low ratio of dress accessories and toilet instruments to tools in the Roman assemblage, and of copper-alloy to iron generally, is typical of a Roman rural site, particularly one with little or no occupation in the 1st century, when brooch use (and subsequent loss) was at its

highest in south-east Britain.

The coins are not generally legible but broad dates are given based on size. Though some 4th-century bronze is present, it is only in low numbers, which may suggest little if any occupation at that period. The only other small find probably of 4th-century date is a fragment of a bracelet with punched decoration that was recovered from the spoilheap. In general context terms the stratified finds derive chiefly from pits and ditches, with a marked concentration within ditch [247].

The mattock is an agricultural tool, and the socket fragment may also be agricultural, perhaps coming from the side of a spade shoe. Both are remarkably well-preserved. The mattock derives from the upper fill of a ditch and was associated with late 1st- and early 2nd-century pottery. It is short compared to Roman military examples, but is comparable in length to the one in the late Roman Lakenheath hoard, though differing from it in details of the shape around the eye. The large knife or cleaver from the fill of ditch [247] was probably used in butchery; its edge is now concave from much sharpening. The socket fragment came from the same context. The precise identification of the other two tools must await X-raying and possibly cleaning, but it is likely that both are associated with metal-working and so may be related to the crucible and the small quantity of other metal-working debris from pit fill [103].

The positive identification of the stylus shaft depends on the result of the X-ray, and cannot now be taken as proof of literacy. The fittings include a well-preserved latchlifter and lift key, and a handle probably from a tumbler-lock slide key. The holdfast and probable joiner's dog are structural fittings; the former is smaller than many British examples and could not have been used on massive timbers. All the nails are small and, where the head form can clearly be seen, have the flat irregularly round head of most Roman period nails. However, the corrosion products on a few examples in this assemblage suggest some may be post-medieval.

6.5.4 Recommendations

1. Report on the metal-working debris

- This should be undertaken by metal-working debris specialist Lyn Keys, of 267 Weedington Road, London NW5 4PR.

2. Report on the other objects

- All other Roman objects, including coins, should be catalogued and a full report prepared. Emphasis should be placed within the report on those items clearly indicative of the site economy.
- The coin assemblage is too small to produce a meaningful graph, but the report should place each coin in the appropriate period defined by R Reece in *The coinage of Roman Britain* (2002; Tempus: Stroud).

3. Conservation

- All the coins will need to be fully cleaned and stabilised to 1) enable full identification and referencing, 2) permit accurate weights and diameters to be taken, and 3) ensure their long term survival.
- Many of the non-ferrous metal objects also need to be cleaned to enable details of manufacture and typology to be established, and for illustration. Objects requiring cleaning for these purposes are identified in the catalogue. (However, all the non-ferrous metal items should ideally be cleaned and

stabilised to ensure their long-term preservation in accordance with current UK practice.)

- All the iron objects should be X-rayed, plus the brooch spring and associated fragments (ids 13487-8).
- A small number of iron objects may need to be cleaned for illustration and are distinguished by the addition of * in the column for illustration. Cleaning requirements will depend largely upon the quality of the X-rays produced.

4. Illustration

- A maximum of 4 copper-alloy objects should be drawn.
- A maximum of 13 iron objects should be drawn.

6.6 WORKED FLINT by Stephen Kemp

6.6.1 Quantity and Provenance

70 flint artefacts were recovered from 29 contexts. The majority of the material, 32 pieces of debitage and tools, were recovered from context 400, an interface between natural geology and the overlying archaeological horizons. Otherwise a maximum of 4 flint artefacts were found within contexts 137 and 139.

6.6.2 Range and Variety

The lithic artefact assemblage consisted of both flake and blades manufacture using hard and soft hammers, platforms were only occasionally prepared particularly where blades were being struck from core. The blade assemblage was largely represented by proximal ends and occasionally by the distal end, medial fragments are absent from the assemblage and presumably used as tools off site. All blades were on a grey slightly patinated flint. Flakes occur on a diverse assemblage of flint raw material. All debitage and tools appears to have been made from river gravel flint.

Many of the flint flakes and irregular blades show traces of edge damage, commonly only on one side suggesting they have been used as tools. Formal tools include two notched flakes, 1 serrated blade, a side scraper, a spurred piece which was broken presumably in use, and a broken arrow head.

The two distinctive tools in the excavated assemblage are the Early Neolithic backed serrated blade, probably used as a knife and the Bronze Age barbed and tanged arrowhead. The latter significantly occurs alongside a quantity of other flint debitage or similar flint types in context 400 suggesting a degree of contemporaneity of this material, however there are no refits. The serrated blade has slight traces of patination and therefore may be associated with the low-level blade production.

Debitage products >5mm were also collected from the environmental samples. All flint types seen in the main assemblage are represented and this shows that flint knapping did occur on-site and that we are not solely dealing with artefacts curated or manufactured elsewhere for use on this site.

Burnt flint was also collected from the site. Only one of the artefacts, a core fragment, shows any trace of burning. Burning appears to have been quite intense, presumably within a hearth where it was discarded after being worked out.

6.6.3 Summary

The evidence suggests at least two phases of early prehistoric activity within the area with flint knapping occurring on-site as shown by the debitage, particularly blade fragments, the burnt core and broken arrowhead. During the Bronze Age flint flakes can be shown to have been opportunistically used as tools. During the early Neolithic on the other hand tools appear to be more stylised and the assemblage we are left with is the detritus, the proximal ends of blades that were a by-product of tool manufacture in this period. The site is not rich in formal, stylised tools and evidence suggests that these were used elsewhere.

The assemblages for both periods of activity are small and largely found in Roman pits and ditches. The most coherent assemblage comes from the interface (400), however this is in itself un-stratified and may contain earlier components.

6.6.4 Conclusions

Overall the assemblage provides little information on site economy as raw materials would have been gathered locally and no specialist tool kit can be identified. No further work is suggested other than to provide archive drawings of the arrowhead and serrated blade for future reference.

The small quantity of worked flint recovered from recent excavations and lithic collection in the vicinity of the site (the HAT excavations yielded 16 artefacts), or within Bottisham suggests that at present it is inappropriate to map these materials across the village as a means of highlighting likely focuses of occupation and activity. It will be something that may be borne in mind for later archaeological studies within the parish.

6.7 OTHER LITHICS by Carole Fletcher

6.7.1 Factual Data

Introduction

Cambridgeshire County Council Archaeological Field Unit (AFU) undertook an evaluation followed by excavations at Tunbridge Lane, Bottisham, in April and the summer of 2002. The evaluation and following excavation revealed features of early first century A.D. date including pits, ditches, hearths/flues and a possible malting oven or corn dryer.

Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). The assessment was carried out using the Archaeological Field Unit's in-house system. Stephen Kemp supplied a geological identification. All fragments have been counted classified, and weighed. All fragments have been counted classified, and weighed. Fragments warranting possible illustration have been flagged.

All the quern, millstone or worked stone fragments have been recorded on a context-by-context basis; this information was entered directly onto an Access 2000 database, which allows for the appending of further data.

The Archaeological Field Unit curates the quern, millstone, worked stone, and associated archive.

Quantity of material

The fieldwork (evaluation and excavation) generated a small assemblage of nine fragments of quern or probable quern, four rubbing stones, a small hammer or anvil stone which may also have been used as a rubbing stone, and a piece of dressed limestone.

6.7.2 Contamination, bias and condition

The condition of the overall assemblage was poor with several of the small fragments of Millstone Grit having lost their surface breaking up. The larger fragments where a dressed face survives are in better condition. The two largest fragments were recovered from a single context (312) a ditch fill.

Sampling bias

The evaluation trenches were excavated by machine and the main excavation was open area. Excavation was carried out by hand and selection made through standard sampling procedures on a feature-by-feature basis. There are not expected to be any inherent biases.

Condition

This assemblage is relatively. No preservation bias has been recognised and no long-term storage problems are likely with correct packaging. The assemblage contains several partial querns whose condition warrants illustration, the Old Red Sandstone millstone and the possible saddle quern both from context 312.

6.7.3 Functional Assemblage and Geology

The assemblage breaks down by geology and use as follows

Geology	Lava	Millstone Grit	Old Red Sandstone	Basalt	Micaceous Sandstone	Quartzite	Flint	Shelly Limestone
Form	Rotary Quern	Quern fragments and uncertain fragments	Small millstone	Possible Saddle Quern	Hammer or anvil stone & possible rubbing stone	Rubbing Stones	Burnt flint nodule used as tool with polished surface	Tile?
Weight in grams	178	1380	3915	>5000g	251	1684	415	95

Table 1: *Worked stone by type and use*

The assemblage was not phased as the information was not available to the author at the time of writing but the geology and use should be illustrated against phase.

Quernstones

Vesicular lava

Two small fragments of Lava were recovered, from separate contexts, one is fine textured the second has a more granular texture. Both pieces are obviously abraded,

6.7.4 Statement of Research Potential

The assemblage though small can provide information pertaining to settlement function including processing and storage and trade. Potential to aid local, regional and national priorities is limited by the small size of the assemblage

6.7.5 Proposals for Further Record and Analysis (method statement)

The stratified worked stone from the evaluation and excavation as described has been quantification to a basic level. The proposal should be to identify and fully describe those fragments of worked stone with identifiable features.

i) Analysis of this assemblage on various field criteria, based on major stratigraphic units. Part of the assemblage should be fully quantified and described, excluding the very degraded material, to aid understanding of site function.

(Time required 1 day)

ii) A textual report on the results of the above.

(Time required ½ day)

iii) Tabular statistics of fabric and form data.

(Time required ½ day)

iv) Illustrations of new forms and traits. The Old Red Sandstone Millstone should be illustrated. The Basalt possible quern should be photographed, as should the more polished quartzite stone, the Micaceous Sandstone hammer stone and the burnt/polished flint.

6.8 CERAMIC BUILDING MATERIAL by Carole Fletcher

6.8.1 Provenance and Quantity

Introduction

Cambridgeshire County Council Archaeological Field Unit (AFU) undertook an evaluation followed by excavations at Tunbridge Lane, Bottisham, in April and the summer of 2002. The evaluation and following excavation revealed features of first to late second century AD date including pits, ditches, hearths/flues and a possible malting oven or corn dryer.

Quantity and date range of material

The fieldwork (evaluation and excavation) generated a small assemblage of 478 fragments, 28653g of ceramic building material, including unstratified material, from 55 contexts out of a total of 292 contexts recording deposits.

The main period represented is Roman and the pottery suggest the date of most material is mid 1st to 2nd century, but some later material is also present suggesting a continuation of activity into the 3rd century. The dating can be implied for the CBM but it should be remembered that CBM might have its origins in the earlier activities on site before being re-used and finally discarded

6.8.2 Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). In addition the Archaeological Ceramic Building Materials Group (ACBMG) 'Draft: Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material' act as a standard.

The assessment was carried out using the Archaeological Field Unit's in-house system. A basic fabric classification has been carried out and new types have been given descriptive identifiers. Full fabric descriptions using binocular microscope and x20 magnification have yet to be carried out for these. All fragments have been counted, classified, and weighed. Fragments warranting possible illustration have been flagged, as have possible cross-fits.

All the Ceramic Building Material (CBM) has been recorded on a context-by-context basis; this information was entered directly onto an Access 2000 full quantification database, which allows for the appending of further quantification data.

The CBM and associated archive are curated by the Archaeological Field Unit.

Contamination, bias and condition

The assemblage was small and statistical analysis is not viable. It is likely that most of the CBM on the site was produced in Norfolk or Essex, with some manufactured locally. Only two fragments of modern brick were identified in the assemblage.

Sampling bias

The evaluation trenches were excavated by machine and the main excavation was open area. Excavation was carried out by hand and selection made through standard sampling procedures on a feature-by-feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental remains, there has also been some recovery of CBM. These are only small amounts, however, and serious bias is not expected to result.

Condition

The assemblage is very small. On average the fragment size is also fairly small (59.94g). No preservation bias has been recognised and no long-term storage problems are likely.

This assemblage has only a single near complete tile, in this case a box or half box flue tile. A partial elbow joint from a water pipe was also recovered.

6.83 Provenance and functional assemblage

Geographical location

The assemblage is very small and it appears that the fabric types are from the Essex or Norfolk region with some more local products.

Main form types

The form types represented in the assemblage are summarised in the table 1.

Form	Brick/ Tile	Tile	Tegula	Imbrex or Ridge tile	Box Flue (<i>Tubulus</i>)	Wall Tile	Water Pipe (<i>Tubili linguati</i>)	Lining?	Unclassified
Weight	1459	1441 7	4443	1481	1459	201	231	2470	1496
Count	42	95	25	16	5	19	1	176	97

The form descriptors used are in some cases self-evident i.e. *Tegula* others less so. Where a single surface survives, either upper or lower, the material has been classified as brick/tile, where both surfaces survive the material is classified as tile. Those fragments with no surviving surface features have been recorded as unclassified. No effort has been made to identify specific types of tile other than the obvious forms at this stage, as further measurements would be required.

The material recorded under the heading Lining? Is at present a problem awaiting further investigation. The material appears to have undergone a regulated firing, rather than having been burnt *in situ* and may be some form of wall tile. The material is very fragmented but on almost all fragments can be seen the imprint of fingertips pressed into the wet clay as if to form a keying for example a plaster surface.

Only six tile/*tegula* fragments show curved finger signatures and one tile has the imprint of a paw (animal as yet unidentified).

6.8.4 Statement of Research Potential

The CBM assemblage though small can provide information pertaining to local and regional trade, also evidence for settlement function.

6.8.5 Proposals for Further Record and Analysis (method statement)

Stratified CBM from the evaluation and excavation described has been quantification to at least a basic level. The proposal should be to identify and fully quantify stratified CBM from excavation areas, recording all fields associated with fabric, form, decoration and technology.

i) Analysis of this assemblage on various field criteria, based on major stratigraphic units. The assemblage should be fully quantified to aid understanding of trade and site function.

(Time required 1-½ days)

ii) A textual report on the results of the above.

(Time required ½ day)

iii) Macroscopic inspection (based on x20 magnification) of all major fabric types.
(Time required 1 day)

iv) Tabular statistics of fabric and form data.

The assemblage though small has some interesting forms, for example the water pipe joint.

(Time required ½ day)

v) Illustrations of new forms and traits, especially relating to local fabric types which are otherwise unpublished to date.

The box or half box flue tile should be illustrated along with the partial elbow joint from a water pipe.

(Time required ½ day)

vi) Recommendation of those fabric types warranting scientific analysis as part of a regional study if any (not proposed as part of this report).

6.8.6 Publication

The above report will be included as an appendix to the site report.

6.9 FIRED CLAY by Carole Fletcher

6.9.1 Factual Data

Introduction

Cambridgeshire County Council Archaeological Field Unit (AFU) undertook an evaluation followed by excavations at Tunbridge Lane, Bottisham, in April and the summer of 2002. The work revealed features of first and second century A.D. date including pits, ditches, hearths/flues and a possible malting oven or corn dryer.

Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). In addition the Archaeological Ceramic Building Materials Group (ACBMG) 'Draft: Minimum Standards for the Recovery, Analysis and Publication of Ceramic Building Material' act as a standard.

The assessment was carried out using the Archaeological Field Unit's in-house system. A partial fabric classification has been carried out and new types have been given descriptive identifiers. Full fabric descriptions using binocular microscope and x20 magnification have yet to be carried out for these. All fragments have been counted, classified, and weighed.

All the fired clay has been recorded on a context-by-context basis and this information was entered directly onto an Access 2000 full quantification database. This allows for the appending of further quantification data including a full fabric identification.

The fired clay and associated archive are curated by the Archaeological Field Unit.

Quantity and date range of material

The fieldwork (evaluation and excavation) generated a small assemblage of 23779g of fired clay, including unstratified material, from 33 contexts out of a total of 292 contexts recording deposits.

The main period represented is Roman and the pottery suggest the date of most material is mid 1st to late 2nd century, but some later material is also present suggesting a continuation of activity into the 3rd century. This dating can be implied for the fired clay.

6.9.2 Contamination, bias and condition

The condition of the overall assemblage was good, with sizes ranging from 130x70x30mm to very small fragments. The average size of fragments from individual contexts was small, averaging about 50mm. The majority of the assemblage was recovered from a single pit fill, context (364); much of this material was in poor condition and had not been cleaned.

Sampling bias

The evaluation trenches were excavated by machine and the main excavation was open area. Excavation was carried out by hand and selection made through standard sampling procedures on a feature-by-feature basis. There are not expected to be any inherent biases.

Condition

This assemblage is very small. On average the fragment size is also fairly small (47.65g). No preservation bias has been recognised and no long-term storage problems are likely with correct packaging.

This assemblage has only seven contexts containing daub fragments with suitable structure for further analysis. The daub showing wattle impressions makes up 33.93% of the assemblage as a whole. The majority of the assemblage (55.37%) consists of unclassified fragments, i.e. material that has no identifiable features. A single fired clay object or structural fragment was recovered from context 318, and this may relate to the structure of the possible malting oven or corn dryer.

6.9.3 Functional assemblage

Main types

The fired clay types represented in the assemblage are summarised in table 1.

<i>Form</i>	Unclassified Fired Clay	Wattle Impressions	<i>Plastered Surface</i>	<i>Painted Plaster</i>	<i>Un-plastered surface</i>	Fired Clay Object ?
Weight in grams	13167	8068	1194	1254	1254	92
Count	352	69	49	16	16	5

The form descriptors used are in some cases self-evident i.e. painted plaster, while the others may be less clear. Where a single surface survives, this has been noted, while those fragments with no surviving features have been recorded as unclassified fired clay. No effort has been made to identify or measure wattle impressions at this stage.

Six possible fabric types have initially been identified (this number may be reduced with further analysis) but due to time constraints these have not been applied to the whole assemblage. Seven fragments of what may be Opus Signinum have also been identified.

Plaster

Eleven contexts were found to contain daub covered with a thin layer of white, or in the case of one fragment, white plaster subsequently painted. These plaster-covered fragments make up 5.04% of the complete assemblage. The plaster layer was less than 0.02mm thick and adhered to the flat face of the fragment. Other fragments were recovered with a flat face but showing no evidence of plaster. Some material could be described as mortar rather than daub.

Hearths/flues

None of the daub appears (according to the context list) to have been directly recovered from a hearth or flue related to the corn dryer/malting oven, the material from these features having been subsequently deposited in ditches and pits. There are however daub fragments that have certainly come from these features. Those likely to be from the hearth/flue are yellowish in colour with a crumbly sandy texture or a dull red sandy fabric that may be quite hard or soft and friable.

6.9.4 Statement of Research Potential

The fired clay assemblage, though small, can provide information pertaining to settlement function.

6.9.5 Proposals for Further Record and Analysis (method statement)

Stratified fired clay from the evaluation and excavation described has been quantification to at least a basic level. The proposal should be to identify and fully quantify stratified fired clay from excavation areas, where features allow for further analysis, for example the wattle impressions. Recording all fields associated with fabric, form, decoration and technology.

i) Analysis of this assemblage on various field criteria, based on major stratigraphic units. Part of the assemblage should be fully quantified, excluding the unclassified material, to aid understanding of site function.

(Time required 1 day)

ii) A textual report on the results of the above.

(Time required ½ day)

iii) Macroscopic inspection (based on x20 magnification) of all major fabric types including a full description.
(Time required 1 day)

iv) Tabular statistics of fabric and form data.
(Time required ½ day)

v) Illustrations of new forms and traits, especially relating to local fabric types which are otherwise unpublished to date. The clay object could be illustrated to help identify its function.
(Time required ½ day)

vi) Recommendation of those fabric types warranting scientific analysis as part of a regional study if any. (not proposed as part of this report).

6.9.6 Publication

The above report will be included as an appendix to the site report.

6.10 OTHER MATERIALS

Several other categories of material were recovered from the site that have not as yet been subject to detailed assessment. These include vessel glass, oyster shell, and slag. The quantities of material were considered too small to be worthy of further study, but have been quantified and conserved where appropriate.

7 SUMMARY OF POTENTIAL

7.1 SITE CONTEXT AND SIGNIFICANCE

English Heritage's updated survey of archaeological endeavour and agenda for future work (English Heritage, 1997) sets out the need for regional frameworks for archaeology. The Regional Resource Assessment (Glazebrook 1997) identifies further work on the Horningsea pottery industry as a key area for further work. The Regional Research Agenda and Strategy document focuses on the subject of non-Villa rural occupation sites as a 'Gap in Knowledge', in particular the distribution of such settlements. Local pottery production centres are also mentioned, particularly in relation to examining marketing patterns (Brown and Glazebrook 2000).

The site at Tunbridge Lane has the potential to fulfil some of these criteria and to contribute to the growing understanding of both rural settlement patterns and pottery production and distribution in the early part of the Roman period. Although the site did not contain structural remains of buildings, the indirect evidence strongly suggests that at least one must have existed nearby, due to the large amounts of building material recovered from ditches and pits.

Coupled to the usual research aims of understanding the diet, economy and settlement development of this period, there is a particular opportunity with this site to further clarify the nature of the introduction of new pottery types during the early Roman period, and also to explore the nature of 'native' Briton versus 'foreign' Roman, in the context of finds assemblages.

Preliminary findings indicate that although the two Tunbridge Lane sites may form parts of the same Villa estate, they were probably not in use at the same time. Further work will be needed to determine whether there is any chronological overlap in their use, or any functional connection between them. At the present time, the finds assemblages from the two sites seem quite dissimilar, however, detailed analysis of the pottery in particular may give clues to the two sites' relationship with one another. In 2003, Cambridge University are undertaking archaeological investigations close to HAT's 2000 site, which may shed further light on these and other issues.

7.2 UPDATED PROJECT AIMS AND OBJECTIVES

The updated aims and objectives for post-excavation analysis can now be defined as:

1. Refine the dates and sequence of Roman settlement development in Bottisham, with particular regard to the other Tunbridge Lane Roman site.
2. Contribute towards an understanding of the distribution and development of pottery of the early Roman period in the region. Assist in developing a chronology for the Horningsea pottery industry
3. Contribute to knowledge about diet, health and living conditions during the early Roman period.
4. Contribute to knowledge about the character and management of the local environment during the Roman period.
5. Contribute to knowledge about agricultural techniques during the Roman period.
6. Create a model of land use and organisation over time.

The Table below summarises the potential of each of the suggested analysis areas to meet the research aims and objectives.

Research Aims:	1	2	3	4	5	6
Main analysis area						
Stratigraphic/date	X	X	X	X	X	X
Pottery	X	X				X
Other Finds	X	X	X			X
Faunal remains			X	X	X	X
Plant macrofossils			X	X	X	X

It is important to note that each of the areas of analysis will be of little value if studied without regard to its context both at site, local, and regional level. Assessment has indicated that there may be potential for looking at the spatial distribution of a variety of data types. It is, for example, immediately apparent that certain areas of the site were richer in all types of finds than others, and that certain individual features contained disproportionately large assemblages. Further analysis should show whether these differences are spatial or temporal, and thus whether we have zonation in settlement activity or change in settlement character over time.

8 PUBLICATION SYNOPSIS

A report will be submitted for inclusion in Britannia; otherwise it will be published in PCAS. It is also intended that the report will be part of the internal Cambridgeshire Archaeology report series. It is suggested that the report follows an established pattern as follows.

Background to excavation, archaeological context

The site summary - phases of activity

The pottery

The environmental remains

The faunal remains

The other finds

Discussion and Conclusions (including documented history notes, regional and local settlement context)

TASK LIST

Project Management	4 days (PM)
Report Preparation and Checking	3 days (ILL)

REFERENCES

The references for the individual material assessments are available in the original reports and will be included in the final publication.

Brown, N., and Glazebrook, J., (ed.) 2000. *Research and Archaeology: A Framework for the Eastern Counties 1. research agenda and strategy*. EAA Occasional Papers 8

English Heritage 1991. *Management of Archaeological Projects*

English Heritage 1997. *English Heritage Archaeology Division Draft Research Agenda*

Glazebrook, J, (ed.) 1997. *Research and Archaeology: A Framework for the Eastern Counties 1. resource assessment*. EAA Occasional Papers 3

Kenney, S, 2002 *Roman Settlement Evidence at 31 Tunbridge Lane, Bottisham,; An Archaeological Evaluation*, CCC Archaeological Field Unit Report No A201

Macaulay, SP, 2002 *Specification for Archaeological Excavation at Tunbridge Lane, Bottisham, Cambridgeshire*, CCC AFU

Thomas, A. 2002, *Brief for Archaeological Investigation*, CCC Archaeology Section



Cambridgeshire
County Council

Education, Libraries
and Heritage

The Archaeological Field Unit
Fulbourn Community Centre
Haggis Gap
Fulbourn
Cambridge CB1 5HD
Tel (01223) 881614
Fax (01223) 880946