

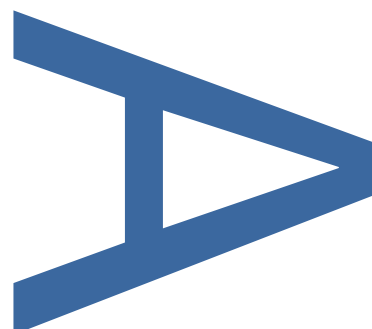
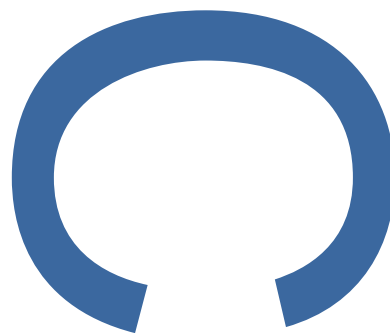
**LAND AT CRYSTAL PARK,
TUNBRIDGE LANE, BOTTISHAM,
CAMBRIDGESHIRE**

**POST-EXCAVATION ASSESSMENT
AND
UPDATED PROJECT DESIGN**

**LOCAL PLANNING AUTHORITY: EAST
CAMBRIDGESHIRE DISTRICT COUNCIL**

SITE CODE: ECB4674

JUNE 2017



PRE-CONSTRUCT ARCHAEOLOGY

Land at Crystal Park, Tunbridge Lane, Bottisham, Cambridge:

Post-Excavation Assessment and Updated Project Design

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CONTENTS

CONTENTS	2
ABSTRACT.....	5
1 INTRODUCTION	6
2 GEOLOGY AND TOPOGRAPHY	7
3 ARCHAEOLOGICAL BACKGROUND	8
4 METHODOLOGY.....	13
5 QUANTIFICATION OF ARCHIVE	16
6 ARCHAEOLOGICAL RESULTS	18
7 THE FINDS.....	29
8 ORIGINAL AIMS AND OBJECTIVES.....	86
9 RESEARCH POTENTIAL	89
10 UPDATED PROJECT DESIGN.....	97
11 PUBLICATION PROPOSAL.....	101
12 ACKNOWLEDGEMENTS	104
13 BIBLIOGRAPHY	105
14 APPENDIX 1 – ENVIRONMENTAL REMAINS	115
15 APPENDIX 2 – OASIS FORM.....	117
16 PLATES.....	119
17 FIGURES.....	123
TABLE 1: QUANTIFICATION OF ARCHIVE – PAPER ARCHIVE.....	16
TABLE 2: QUANTIFICATION OF ARCHIVE – DIGITAL ARCHIVE	16
TABLE 3: QUANTIFICATION OF ARCHIVE - PHYSICAL ARCHIVE	17
TABLE 4: CONTEXT QUANTIFICATION.....	17
TABLE 5: QUANTIFICATION OF ALL ROMANO-BRITISH POTTERY BY PERIOD	30
GRAPH 1: OVERALL QUANTIFICATION OF THE ASSEMBLAGE	31
TABLE 6: HORNINGSEA POTTERY FORM TYPES BY EVES	32
TABLE 7: MEDIEVAL POTTERY TYPES	38
GRAPH 2 (FIGURE 1A): 1= BUILDINGS 2= WELL FILLS AND DITCHES	43
GRAPH 3 (FIGURE 1B): PROPORTION OF ROMAN CERAMIC BUILDING MATERIAL BY NUMBER FOR EACH BUILDING AT BOTTISHAM	44

GRAPH 4: (FIGURE 1C) PROPORTION OF ROMAN CERAMIC BUILDING MATERIAL BY WT % FOR EACH BUILDING AT BOTTISHAM	44
GRAPH 5 (FIGURE 2A): TYPES OF BUILDING MATERIAL PRESENT	45
TABLE 8: LISTING OF MORTAR TYPES.....	52
TABLE 9: TABLE SUMMARISING THE CHARACTER, SOURCE, QUANTITY AND PROBABLE FUNCTION OF THE MAIN STONE TYPES	57
TABLE 10: ANIMAL BONE TAXA PRESENT BY PERIOD.....	61
TABLE 11: QUANTIFICATION OF THE LITHIC MATERIAL	64
TABLE 12: SMALL FIND QUANTITIES BY MATERIAL AND DATE.....	75
TABLE 13: PROPOSED PUBLICATION FIGURES.....	103
TABLE 14: PREHISTORIC SAMPLES.....	115
TABLE 15: MEDIEVAL SAMPLES.....	115
TABLE 16: ROMANO-BRITISH SAMPLES.....	116

PLATES

PLATE 1: AERIAL SHOT OF ROMAN BUILDINGS 1, 2 AND 3.	119
PLATE 2: AERIAL SHOT OF ROMAN BUILDING 1.....	119
PLATE 3: AERIAL SHOT OF ROMAN BUILDING 2.....	120
PLATE 4: AERIAL SHOT OF ROMAN BUILDING 3.....	120
PLATE 5: CONSTRUCTED ROMAN WELL [678]. SOUTH-WEST VIEW.	121
PLATE 6: CONSTRUCTED ROMAN WELL [678]. NORTH-WEST VIEW.	121
PLATE 7: WORKING SHOT OF CONSTRUCTED ROMAN WELL [678]. SW VIEW. WORK CREDITED TO POPPY YAPP & DAVID CURRY.....	122
PLATE 8: ANOTHER WORKING SHOT OF ROMAN WELL [678].....	122

FIGURES

Figures are bound at the end of the report

FIGURE 1: SITE LOCATION

FIGURE 2: DETAILED SITE LOCATION

FIGURE 3: OVERALL PHASED SITE PLAN

FIGURE 4: ROMAN PHASE PLAN

FIGURE 5: DETAIL OF BUILDING 1

FIGURE 6: DETAIL OF BUILDING 2

FIGURE 7: DETAIL OF BUILDING 3

FIGURE 8: SECTIONS AND ELEVATIONS OF ROMAN PERIOD FEATURES

FIGURE 9: SECTIONS THROUGH MEDIEVAL PITS

ABSTRACT

This report describes the results of an archaeological evaluation and excavation carried out by Pre-Construct Archaeology on land at Crystal Park, Tunbridge Lane, Bottisham, Cambridgeshire (centered on OS NGR TL 5452 6088) between 23rd May and 19th August 2016. The archaeological work was commissioned by CgMs Consulting on behalf of Bloor Homes in response to a planning condition attached to the construction of 24 new residential dwellings including garages and associated parking.

An archaeological evaluation was undertaken on the subject site in 2014 (House and Woolhouse 2014). The evaluation revealed the presence of a buried soil horizon, which contained early Neolithic worked flints and knapping debris. A prehistoric pit was also identified, which contained a large assemblage of Bronze Age pottery and struck flint of Early Bronze Age date.

Excavation revealed the remains of 3 individual buildings as well as a complex of later Roman settlement-related features including boundary and drainage ditches, rubbish pits, clunch walls, floor layers and demolition deposits. These features were associated with moderate to large quantities of finds, including pottery of predominantly later Roman date and ceramic building material including tegula, floor tile and box flue tile suggesting the presence of a building or buildings with a hypocaust heating system. Further activity during the medieval period consisted of medieval pitting along the Tunbridge Lane frontage.

The aim of the work was to preserve by record any archaeological remains which would be damaged or destroyed by the new development. This report presents the results of the assessment of the archaeological remains recorded during the fieldwork and their significance, and includes the programme of work required for final analysis of the contexts, finds and environmental assemblages recovered as well as publication.

1 INTRODUCTION

- 1.1 An archaeological excavation was undertaken by Pre-Construct Archaeology Ltd (PCA) on land at Crystal Park, Tunbridge Lane, Bottisham, Cambridgeshire, CB1 9HR (centred on Ordnance Survey National Grid Reference (NGRTL 5452 6088)) between 23rd May and 19th August 2016 (Figure 1; Plate 1). The archaeological work was commissioned by CgMs Consulting on behalf of Bloor Homes.
- 1.2 The aim of the excavation was to 'preserve by record' any archaeological remains present in those areas of the site which would be affected by groundworks associated with the new development. The development was for 24 new residential dwellings including garages and associated parking (Planning Reference 14/00359/FUM). A condition for planning consent requiring archaeological work has been placed on the site due to the high archaeological potential of the proposed development.
- 1.3 The site is located in the Bottisham ward of the City of Cambridge, 10.9km east of Cambridge city centre, and 160m east of Bottisham High Street.
- 1.4 The excavation was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by PCA (Hinman 2016) in response to a Brief for archaeological Investigation Kasia Gdaniec of Cambridgeshire County Council Historic Environment Team (CCCHET).
- 1.5 This report presents an assessment of the structural archaeological evidence and results of specialist reports, together with their potential for analysis and updated research aims. It also outlines the tasks that will be required during analysis in order to bring this work to publication. The aim of the post excavation work will be to place the site and the identified remains in their local landscape and archaeological context, and assesses their significance.

2 GEOLOGY AND TOPOGRAPHY

Geology

- 2.1 The underlying geology of the site is Chalk of the West Melbury Marly Chalk Formation (British Geological Survey; Website 1). The overlying soils in Bottisham are sandy loams belonging to the Soham association (Hodge and Seale 1966).

Topography

- 2.2 The site comprises an area of approximately 0.6ha. It is located in the north-eastern part of the village of Bottisham, 6km east of Cambridge and just north of the A14. The site is situated at an elevation of approximately 12m OD (above Ordnance Datum). The surrounding area is generally flat, with a slight fall in the ground to the north and west of the site towards the Fenland and a rise in elevation to the east towards Newmarket. The River Cam is located 5km north-west of the site, the site falling on the eastern side of the wider river valley.

3 ARCHAEOLOGICAL BACKGROUND

3.1 General

3.1.1 The site lies in an area of known archaeological significance, as recorded in the Cambridgeshire Historic Environment Record (HER). Several phases of evaluation and excavation have been conducted within the immediate vicinity of Tunbridge Lane, including the adjacent sites at the doctor's surgery, Ancient Meadows (Newton, 2016). This archaeological and historical background has been drawn from the archaeological design brief (Gdaniec 2016) and the available reports documenting the adjacent archaeological investigations. The following archaeological background is taken from the evaluation report (House and Woolhouse 2014) for the site.

3.1.2 An archaeological evaluation was undertaken on the subject site in 2014 (House and Woolhouse 2014). The evaluation revealed the presence of a buried soil horizon, which contained Early Neolithic worked flints and knapping debris. A prehistoric pit was also identified, which contained a large assemblage of Bronze Age pottery and struck flint of Early Bronze Age date. A complex of later Roman settlement-related features including boundary and drainage ditches, rubbish pits, clunch walls, floor layers and demolition deposits was also present. These features were associated with moderate to large quantities of finds, including pottery of predominantly later Roman date and ceramic building material including tegula, floor tile and box flue tile suggesting the presence of a building with a hypocaust heating system in close proximity.

3.2 Mesolithic

3.2.1 An unspecified number of Mesolithic blades and flakes, together with two tranchet axes (HER 06595), have been found in Bottisham. Mesolithic flint-work was also recovered from archaeological investigations at Bendyshe Farm (HER 19774), indicating the presence of Mesolithic activity across the wider landscape.

3.3 Neolithic and Bronze Age

3.3.1 Two parallel ditches east of Hall Farm (to the north of the site) are thought to represent a possible cursus monument (HER 06605), while numerous cropmark ring-ditches of Late Neolithic and Bronze Age barrows can be seen along the chalk ridge to the east of Bottisham. An Early Neolithic causewayed enclosure is known 3km to the south at Great Wilbraham.

3.3.2 Several isolated finds of Neolithic date have been recovered from across Bottisham, including greenstone and flint axes (HER 06556), as well as seven poorly-provenanced Tuff axes (HER 06580), a polished axe (HER 09208) and a hammerstone of presumed prehistoric date (HER 06585). A pit cluster of Late Neolithic/ Early Bronze Age date was recorded during archaeological investigations at Bendyshe Farm (HER MCB 19774) and a flint assemblage comprising contemporary material has been found to the south-west of the current site (HER 06626). Two barbed and tanged arrowheads have also been found in the general area (HER 06591; 06598) and flint flakes (HER MCB 20080) and a large assemblage of fire-cracked flint (HER 19433) have been found in the vicinity.

3.3.3 A find of undated flint debitage is recorded at Grid Reference TL 5487 6042 (HER Ref: MCB 19429).

3.4 Iron Age and Roman

3.4.1 Several sherds of Iron Age pottery were recovered from archaeological investigations at Bendyshe Farm, Bottisham (HER MCB 19774; TL 5434 6039).

3.4.2 Part of a Roman farmstead of the 2nd to 4th centuries AD was recorded during archaeological excavations immediately north of the site (Newton, 2016). Three probable buildings were identified, together with a metalled yard and associated features (HER CB 14806; TL 54480 60946).

3.4.3 A potentially high-status Roman settlement has been identified immediately north-east of the study site at Tunbridge Hall Farm. The remains dating to c. AD 200-400 include buildings with stone footings and

finds of painted wall plaster (HER CB 15605; TL 54669 60916). During the 3rd century AD, a driveway was created together with a curvilinear enclosure with a system of associated ditches. A cobbled surface and two ovens were also in use. In the late 3rd and early 4th century, a large rectangular field or paddock was created surrounding a timber building. Large quarry pits were also dug in the north of the site. An undated burial and a cobbled surface were also identified (HER MCB 20080; TL 5461 6093; Newton 2014).

3.4.4 Other Roman finds from close to the site include Roman pottery from TL 5440 6101, off Tunbridge Lane (HER MCB 19433), a Roman jug recorded from TL 54 60 (HER 06581); supposedly 'Roman' shackles are also recorded from the same arbitrary grid location (HER Ref: 06582). Roman pottery is also recorded from TL 543 609 (HER 06586), with another assemblage from TL 545 611 (HER 04133).

3.4.5 Archaeological work conducted in advance of the redevelopment of the former doctor's surgery at 29-33 Tunbridge Lane (E/02/00141/FUL, Kenney 2008), at the new surgery site (E/99/0824), and at Ancient Meadows (south of Tunbridge Hall, E/00370/04), along with the numerous Roman finds listed in the Cambridgeshire Historic Environment Record, combine to demonstrate the presence of a Roman rural settlement of moderate to high status, possibly a 'villa' estate in this part of Bottisham.

3.4.6 The main buildings associated with this complex were found to lie within the Crystal Park site. Previously large clunch-built foundations surrounding a deep cavity were excavated at the very limit of excavation at the southern boundary of the Tunbridge Lane site (e.g. HER ECB2915 and MCB 20080). The previous excavations in the immediate vicinity of this site revealed a series of buildings and barns, yards and industrial areas contained in ditched enclosures, likely to represent the farmyards and agricultural infield attached to the villa. One tonne of ceramic building materials, along with a wide variety of other finds and environmental evidence, was recovered from the Tunbridge Lane site. Box flue tile

indicates the presence of a hypocaust heating system in one or more buildings somewhere in the area, possibly including a bathhouse). This Roman archaeological evidence was anticipated and proven to continue into the Crystal Park site.

3.5 Anglo-Saxon and Early Medieval

3.5.1 Saxon-Norman features were identified at Beachwood Avenue (HER CB 15746, TL 54440 60642) while an Anglo-Saxon Disc Brooch was also found nearby (HER 06599, TL 5475 6028).

3.5.2 Saxon and medieval remains were found in the excavations at Ancient Meadows, to the north.

3.5.3 Early Medieval features were identified during an archaeological investigation at Bendyshe Farm (HER MCB 19801; TL 5442 6039).

3.6 Late Medieval and Post-Medieval

3.6.1 During the late medieval period, the site may have lain in an area of vineyards, as this was the place name recorded for the area of the site in the early 19th century. The vineyard may have been held by the Priory of Tunbridge, hence 'Tunbridge Lane'.

3.6.2 The Ordnance Survey map of 1808 and the Bottisham Enclosure map of 1808 record the site as agricultural land. In the latter it is described as held by John Hobbs and comprising a 'parcel of land or ground'.

3.6.3 Tunbridge Hall, to the north of the study site, was built in c. 1830 (HER 06604), and White Cottages were built in the early 19th century (HER 06588). Neither is listed as being of special architectural or historical importance.

3.6.4 The 1886 Ordnance Survey map shows the site as being located in an orchard or plantation. This was also the case in 1902 and 1925.

3.6.5 In 1940-46 the site was used for a WAAF Mess and Communal site serving RAF Bottisham.

3.6.6 By 1972 the former WAAF site had been redeveloped as a works complex, apparently incorporating some of the 1940-46 buildings. In 1991 this was unchanged from 1972 and this remains the case today. Many of these buildings have remained occupied until present day and retain original fittings and fixtures.

4 METHODOLOGY

4.1 General

4.1.1 The methodology of the excavation is outlined in detail in the Written Statement of Investigation (Hinman 2016). The archaeological site was roughly 0.6ha in area. The excavation was carried out after demolition and site clearance. The site was tackled in 3 discrete but contiguous blocks following demolition of existing site structures to ground level. This was necessary to facilitate spoil management within the bounds of the development area.

4.2 Excavation Methodology

4.2.1 Ground reduction was carried out using a 21 ton 360° tracked mechanical excavator was used to strip the excavation area. Topsoil and other overburden of low archaeological value was removed in spits down to the level of the undisturbed natural geological deposits where potential archaeological features could be observed and recorded.

4.2.2 Exposed surfaces were cleaned by trowel and hoe as appropriate and all further excavation was undertaken manually using hand tools.

4.3 Recording and Finds Recovery

4.3.1 The limits of excavations, heights above Ordnance Datum (m OD) and the locations of archaeological features and interventions were recorded using a Leica 1200 GPS rover unit with RTK differential correction, giving three-dimensional accuracy of 20mm or better.

4.3.2 Deposits or the removal of deposits judged by the excavating archaeologist to constitute individual events were each assigned a unique record number (often referred to within British archaeology as 'context numbers') and recorded on individual pre-printed forms (Taylor and Brown 2009). Archaeological processes recognised by the deposition of material are signified in this report by round brackets (thus), while events constituting the removal of deposits are referred to here as 'cuts' and signified by square brackets [thus]. Where more than one slot was

excavated through an individual feature, each intervention was assigned additional numbers for the cutting event and for the deposits it contained (these deposits within cut features being referred to here as 'fills'). Multiple sections excavated across a single feature were later grouped together by unique 'group numbers' e.g. Ditch 1. Additionally, features of contemporary date and representing the same type of activity or land-use were assigned to interpretative groups e.g. 'Refuse Pits', 'Quarry Pits'). The record numbers assigned to cuts, deposits and groups are entirely arbitrary and in no way reflect the chronological order in which events took place. All features and deposits excavated during the evaluation and excavation will be listed in Appendix 2. Artefacts recovered during excavation were assigned to the record number of the deposit from which they were retrieved.

4.3.3 Metal-detecting was carried out during the topsoil and subsoil stripping and throughout the excavation process. Archaeological features and spoil heaps were scanned by metal-detector periodically. Only objects of modern date were found and were not retained for accession.

4.3.4 High-resolution digital photographs were taken of all relevant features and deposits, and were used to keep a record of the excavation process. In addition, monochrome photographs were taken of significant features.

4.4 Sampling Strategy

4.4.1 Discrete features were half-sectioned, photographed and recorded by a cross-section scaled drawing at an appropriate scale (either 1:10 or 1:20). Where large or significant finds assemblages were present, features were subsequently 100% excavated for finds recovery.

4.4.2 Linear features were investigated by means of regularly-spaced slots amounting to 25% of their lengths. Where stratigraphic relationships between features could not be discerned in plan, relationship slots were also excavated and these were recorded as part of the GPS survey and noted on the relevant context sheets.

4.5 Environmental Sampling

4.5.1 A total of 32 bulk samples (generally 20-40 litres in volume) were taken to extract and identify micro- and macro-botanical remains. The aim of this sampling was to investigate the past environment and economy of the site, the diet of the inhabitants and the agricultural basis of the settlement. An additional aim of the sampling was to recover small objects that are not readily recovered by hand-collection, such as metalworking debris and bones of fish and small animals. These samples were taken from sealed deposits.

4.5.2 Generally, many of the features on site were shallow and truncated horizontally by modern features, as well as by modern services, so there was a high chance of contamination. There were few rubbish pits or features with genuine primary fills, which may have given an indication of their use. Similarly, within the buildings no primary 'use' layers survived. Most feature fills and deposits represented later gradual silting or demolition deposits with a high degree of residuality. Medieval features predominantly comprised intercutting pits. Therefore many features were not good examples for sampling.

4.5.3 Unfortunately of the 32 samples 3 were spoilt or went missing, so 29 were presented for assessment.

5 QUANTIFICATION OF ARCHIVE

5.1 Paper Archive

Type	Evaluation	Excavation	Total
Context register sheets	3	49	52
Context sheets	56	874	930
Plan registers	1	4	5
Plans at 1:50	0	52	52
Plans at 1:20	0	275	275
Plans at 1:10	0	5	5
Plans at 1:5	0	0	0
Section register sheets	1	7	8
Sections at 1:10 & 1:20	17	159	176
Trench record sheets	9	0	9
Photo register sheets	1	27	28
Small finds register sheets	1	2	3
Environmental register sheets	1	6	7

Table 1: Quantification of Archive – paper archive

5.2 Digital Archive

Type	Evaluation	Excavation	Total
Digital photos	172	2363	2535
GPS survey files	1	2	3
Digital plans	4	90	94
GIS project	N/A	N/A	N/A
Access database	1	1	1

Table 2: Quantification of Archive – digital archive

5.3 Physical Archive (By Contexts containing material)

Type	Evaluation	Excavation	Total	No. of bags	Total fragments	Total weight
Struck flint	6	109	115	149	1002	-
Pottery	17	215	232	346	4961	73717g
Ceramic building material (CBM)	12	209	221	619	9416	1839k
Burnt Clay	0	9	9	-	-	-
Mortar	0	41	41	65	669	27.8k

Type	Evaluation	Excavation	Total	No. of bags	Total fragments	Total weight
(Including <i>Opus signinum</i>)						
Plaster (Including Painted)	0	26	26	37	Inc. in Mortar quantific.	Inc. in Mortar quantific.
Clay Pipe	1	1	2	2	-	-
Glass	0	6 (2?)	6	10	-	-
Coins	0	11	11	n/a	-	-
Worked stone	1	22	23	31	156	466k
Small Finds	2	56	58	n/a	295 (of which 193 nails)	-
Slag	1	20	21	18	-	-
Animal bone	11	173	184	693	750	-
Shell	4	99	103	145	672	10064.2g
Environmental bulk samples	6	32	38	n/a	-	-

Table 3: Quantification of Archive - physical Archive

Feature Type	Number of type
Pit	129
Ditch (Number of Interventions)	99
Wall	28
Posthole	24
Post pad	7
Oven	2
Well	2
Robber trench	11
Layers	32
Treethrow	30

Table 4: Context quantification

6 ARCHAEOLOGICAL RESULTS

6.1 Methodology

6.1.1 The contextual data was assessed in order to establish whether it would provide a coherent spatial and chronological framework. Contexts were assigned to groups and each group to a chronological phase.

6.1.2 The following summary and discussion of results are based on a provisional contextual hierarchy produced as part of the assessment process. This may change following further analysis. It is presented within traditional chronological periods. The Roman period has been sub-divided into several sub-periods or phases (Phases 4.1-4.3) based on stratigraphic analysis and artefact information (Figures 3 and 4).

6.1.3 The periods and sub-periods follow those of the Tunbridge Lane excavations to the north (Newton 2016) so that the two sites can be discussed as part of the same narrative.

6.2 Overview

6.2.1 The excavations uncovered three high status Roman buildings. One of the buildings (Building 1) is likely to be part of a bath house. They form part of rural villa complex or 'villa rustica', dating to around AD c200-400. The buildings are likely to have been arranged around a courtyard or gardens. The presence of box-flue tile and *pilae* stacks (relating to hypocaust underfloor heating systems) are indicative of the wealth and status of the buildings owners.

6.2.2 The buildings' walls had been heavily robbed in antiquity. This is not unusual as building materials in Cambridgeshire were always in short supply, stone and tile were often re-used in later buildings. The buildings seen within the excavation probably form a small part of larger ranges of buildings, some of which were constructed from timber and have left little trace.



Aerial photograph showing the three buildings uncovered during the recent PCA excavations.

1) Apsidal building. 2) Bath house. 3) Building containing at least three rooms.

6.2.3 Areas dedicated to agricultural work and other necessary occupations , represented by pits, ditches and a well, were carried out around the buildings, as evidenced in previous excavations.

6.3 Mesolithic to Neolithic

6.3.1 A large assemblage of residual Mesolithic and Neolithic (and early Bronze Age) burnt and struck flint fragments was recovered from later features. This is discussed in the lithic assessment in Section 7.37.

6.3.2 The lithic assessment concludes that “for all periods, this appears to include the preparation and reduction of cores and the production of a wide range of tools that are most suggestive of broad based settlement activities. It is consistent with the findings from other excavations in this area that have revealed extensive prehistoric occupation along the periphery of what was then a developing Fenland landscape. The assemblage confirms the findings for the evaluation and adjacent excavations to the north that indicate intensive activity in the vicinity

through much of the prehistoric period”.

6.4 Bronze Age

6.4.1 A single prehistoric pit [111] was identified in Trench 2 during the evaluation. This was 0.80m by 1.20m wide and 0.47m deep and contained a range of finds including an assemblage of Bronze Age pottery with affinities to the Collared Urn tradition and struck flint of Early Bronze Age date. The quantity and range of finds in the pit indicate occupation activity nearby, but no other prehistoric features were revealed during the excavations.

6.5 Roman

6.5.1 The majority of features revealed during the excavation were Roman in date. Stratigraphic analysis, together with provisional dates provided by the ceramic assessment, has allowed the sub-division of the Roman period into several phases. The phasing will allow the results of the excavations to be easily compared with the results from the adjacent Tunbridge Lane site.

6.5.2 This phasing is provisional and will need to be refined using the results from the artefact assessments and other specialist reports (Section 10).

6.5.3 Undated (Roman)

6.5.4 Pits and postholes are present scattered across the western part of the site, internal and external to the enclosures. While the features are currently allocated to the ‘undated’ period, they could conceivably be related to any of the later Roman sub-periods. Integration of the artefactual data with the structural data will further refine this interpretation.

6.5.5 Pre- to early 3rd century AD (Phase 4.1)

6.5.6 A large number of ditches (Ditches 23-38) could not be assigned securely to any of the Roman sub-periods or phases. Stratigraphically, most of the ditches are earlier than the boundary ditches of the 3rd and early 4th

century (Phases 4.2 and 4.3) and they are also noticeably smaller. The ditches are generally 0.5m wide and 0.3-0.4m deep and are on a NE-SW alignment with at least three ditches on a perpendicular alignment. Together the ditches seem to form a system of enclosures.

6.5.7 It is possible that the ditches are part of an early field system that was later replaced by larger fields with wider boundary ditches. This is comparable to observations made on the Tunbridge Lane site to the north, where the more fine grained enclosure system was dated to the 3rd century (Newton 2016, 39).

6.5.8 The only feature securely pre-dating the 3rd century AD was a small pit [516] which contained three small fragments of abraded Southern British Grog-tempered Ware, datable to c. AD120-200/230. Its location near the northern boundary of the site could suggest that it represents an isolated feature associated with the pre-3rd century structures located on the Tunbridge Lane site.

6.5.9 3rd century AD (Phase 4.2)

6.5.10 The majority of features date to the 3rd century and represent the main phase of occupation on the Tunbridge Villa site. Three stone buildings, Buildings 1, 2 and 3 are located on the eastern part of the excavation around an area devoid of other archaeological features. It is possible that the buildings were arranged around a courtyard or open area.

6.5.11 *Building 1 (Figure 5)*

6.5.12 Building 1 was semi-subterranean, sub-rectangular in shape (length c.6.6 m, width c.5 m, depth c.0.9 m; including the foundations), with a double apse at the south-eastern side. Nothing remained of the building above modern ground level, however the foundations and sub-terranean sections of wall survived to a depth of c.0.75 m below ground level. Rammed chalk foundations were present underneath the sub-rectangular part of the structure, although no foundations at all were present

underneath the apses.

- 6.5.13 The structure was split into at least two rooms by an internal dividing wall. There was an opening on the SW side of the structure c.0.45 m in width, flanked by two twin tile stacks (2009 and 2048) which are both c.0.4 m in width, c.0.55 m in length and c.0.75 m in depth; the opening was straight on to natural soils and its function is unclear (Section 2008 fig. 8). There was no sign of burning, discounting the existence of a possible flue.
- 6.5.14 Internally, remnants of a partial tile floor layer (2055 and 2056) were present, as well as a partial *opus signinum* layer (2054), which could possibly also be the remnant of a floor (Section 2000, fig. 8).
- 6.5.15 The group number for the walls of the building is 2044; within this group are the following wall numbers: 2003, 2006, 2009, 2012, 2015, 2018, 2037, 2046, 2048, 2050, 2052 and 2062.
- 6.5.16 The walls were generally constructed of shaped chalk blocks, the occasional shaped limestone and clunch blocks, small flint nodules and one block of quartz. In places there were two or more courses of tile. The blocks facing into the building were well faced and shaped, while those behind were less carefully shaped. The bonding material was predominantly lime mortar but *opus signinum* was also used. Parts of the walls contained large quantities of mortar, likely to make up for the lack of available building stone. This is further supported by the variety of stone used in the construction. The survival of a lime render in some areas also suggests that the interior of the building was rendered.
- 6.5.17 Demolition layers filled the entirety of Building 1 (Section 2000 fig.8). The first two layers comprised friable mid grey-brown sandy silt with frequent inclusions of large chalk building blocks, likely from a higher level of the structure. Layers above were a mixture of compacted mortar and rubble and friable mid grey-brown clay-silt, with frequent mortar and chalk rubble inclusions. All layers contained CBM, pottery, oyster shell and bone.

- 6.5.18 Truncating the latest demolition layer was robber pit [2022]. This was a steep sided, oval pit with a concave base. It had a single fill (2021) which was a friable, mid grey-brown clay-silt and contained large quantities of rubble and broken tile, as well as pottery and oyster shell. It is likely that the robbing took place soon after the demolition of the building.
- 6.5.19 The building was truncated by two modern service trenches and a geotechnical pit.
- 6.5.20 While there was a systematic robbery of building materials which has removed much of the evidence for the use of Building 1, there is still no convincing evidence for hypocausts or a furnace. The *opus signinum* floor remnant (2054) was coupled with a rendering on wall 2003, indicating a possible pool area in the SW room. Therefore, the interpretation of Building 1 as a bath house is as yet provisional.
- 6.5.21 *Building 2 (Figure 6)*
- 6.5.22 Building 2 consisted of one rectangular room with internal dimensions of 8m by 4.5m in width and an external, added curved wall section at its northern end which was c.6m in length. The walls were c.0.9m wide. The rectangular building comprised walls [5015], [5002], [5009], [5006], [5028], plus curved wall [5018], [5023]. Wall [5023] was mainly mortar with a high level of painted plaster finds. A possible doorway [5040] was located in the north-eastern side of the building.
- 6.5.23 The walls did not survive above ground level and the masonry recorded represents the lowest course of each wall within the foundation cuts. The wall foundations generally survived to a depth of c.0.5m and comprised no more than one rough course of chalk cobbles with small inclusions of tile and Barnack limestone fragments, laid on a foundation of rammed mortar (Sections 5007 and 5009 fig.8). Similar to Building 1, the walls were heavily filled with lime mortar, making up for a lack in building material.
- 6.5.24 The circular wall, which was added to the building at a later stage, may

represent the apse of a further room. However, its precise function is unclear due to its incomplete survival.

6.5.25 Three post pads ([5038], [5044], [5048]) were excavated inside the rectangular room, but their function is unclear.

6.5.26 [5060] was a post pad, 1m x 0.59m x 0.51m in dimension, to the south outside of the building. It was made up of chalk and tile packing, with mortar and dark brown silty sand. It had unusually high concentrations of mortar (60%), the tile remained vertical into the mortar giving an indication of the position of the former post.

6.5.27 Demolition layer (5001) comprising chalk rubble with mortar filled most of the interior of Building 2 and contained unusually high levels of red tile, as well as pottery. This suggests that the building may have had a tile roof.

6.5.28 *Building 3 (Figure 7)*

6.5.29 Building 3 was a structure comprising at least four rooms and continued beyond the limit of excavation. Its overall dimensions were 14.5m x 11m with internal rooms measuring 4.4m x 3.8m, 3.6m x 2.4m, >5.6m x 7m and 4.5m x 8.5m. A row of post pads (3065, 3067, 3071, 3077, 3080, 3085) was located along the southern and eastern external edge of the building.

6.5.30 The walls did not survive above ground level and the masonry recorded represents the lowest course of each wall within the foundation cuts. The walls of Building 3 were contexts [3112], [3093], [3048], [3040], [3024], [3021], [3018], [3015], [3012] and [3003].

6.5.31 The wall foundations generally survived to a height of 0.30m and comprised no more than one course of rough chalk fragments with limestone cobbles, occasional inclusions of flint nodules and tile fragments set in thick lime mortar (Section 3025 fig.8). Only internal wall [3016] was made up of one course of large, rectangular shaped limestone blocks topped with a layer of flat tile. Wall [3024] also had one surviving

course of tile (Section 3029 fig8).

6.5.32 The building was robbed in antiquity, evidenced by several large robber trenches (3035, 3037, 3053, 3055, 3056, 3058, 3060, 3084, 3088, 3104), which followed the lines of the walls (Section 3015 fig8). The robber trenches were backfilled with often tightly packed limestone rubble and roof tile. The robbed-out building was filled and covered with several demolition layers (3033, 3041, 3049, 3050) which comprised light to mid brown silty sand with frequent inclusions of chalk and limestone rubble, mortar flecks and flint fragments.

6.5.33 *Oven*

6.5.34 To the immediate south of Building 2 was a keyhole shaped oven or kiln [739] that was 1.7m long with a flue at the southern end and a c.1.0m diameter wide chamber. The structure was built of rammed chalk but no signs of firing were recorded during excavation so it is possible that the oven was never in use. Its precise function is unclear. One small piece of Terra Sigillata and shell-tempered ware respectively were retrieved from its bottom fill. The feature was heavily disturbed during machining so no environmental samples were taken.

6.5.35 *Pits and Ditches*

6.5.36 Contemporary with the buildings were a number of pits and ditches, all located on the north-western part of the site.

6.5.37 The main boundary was a ditch, made up of one long continuous segment, Ditch 4, on a NW-SE alignment. This was 34m long and c.2m wide with a terminus at its south-eastern end. A corresponding perpendicular ditch segment, Ditch 13) with a terminus at its north-eastern end was located to the south, suggesting that this was an enclosure with an entrance facing the main farmstead. This possible entrance was later infilled by a shorter ditch segment, Ditch 11 and a large pit [697].

6.5.38 A small number of isolated pits and a short ditch segments, Ditch 5, are

scattered across the north-western half of the excavated area. Their precise function is unclear.

6.5.39 Late 3rd century to early 4th century, 250-350 AD (Phase 4.3)

6.5.40 Pits and Ditches

6.5.41 The NW-SE aligned boundary was re-defined in this period and the earlier Ditch 4 replaced or re-defined by later boundary Ditch 18. It is possible that the earlier ditch remained in use as the westward curving section of the ditch seems to have been re-cut and/or re-defined by ditch segments Ditch 37 and Ditch 21.

6.5.42 Two ditches, Ditch 28 and Ditch 29, are located on a perpendicular alignment to Ditch 18 and continue beyond the northern limit of excavation. A further curvilinear feature, Ditch 31, lies close to the northern edge of excavation and may represent a small enclosure. A small number of pits were located within the enclosures, their precise function is unclear.

6.5.43 The alignment of the ditches matches with the late 3rd to early 4th century system of enclosures identified on the Tunbridge Lane site to the north and most likely represents the continuation of that system around the edges of the central building complex.

6.5.44 Well

6.5.45 A large lined well [678] was located immediately adjacent to the curvilinear boundary Ditch 21. The well was 1.69m in diameter and approximately 1.10m deep (Section 141 fig. 8). It had a lining (756) made up of Barnack limestone fragments and pieces of brick, some still stuck together as *pilae* stacks. Both are robbed and re-used building material from the 3rd century buildings.

6.5.46 The top of the well was truncated by a later pit, which may have been used as a rubbish pit as it contained a relatively large number of ceramic

fragments (58 in total), animal bone, three coins dated to the late 3rd century, a chalk loomweight and several iron fittings and nails.

6.5.47 Medieval (1066 – 1485)

6.5.48 A group of intercutting pits was located in the north-eastern corner of the site. The pits were sub-circular in plan and ranged from 2.70m x 1.80m to 0.80m x 1.0m in size and from 0.4m to 0.95m in depth. Two pits were rectangular and linear in plan respectively and c.1.40m wide and 3.30m and 7.40m long. The fills of the pits contained a quantity of medieval pottery (63 sherds in total), three iron nails, a copper alloy strap end and a corroded coin that was not yet datable. The pits most likely represent quarry pits.

6.5.49 Modern (1900 – present)

6.5.50 The site formed part of the RAF Bottisham during the Second World War, and a number of original buildings relating to this use survived on the site, alongside a small number of later buildings. The buildings were recorded at English Heritage Level 1 or 2, as appropriate, by Archaeology South East (CgMs 2014).

6.5.51 The site was then occupied by Crystal Structures Ltd and the former RAF buildings were variously in use as workshops and stores. The structures were demolished prior to the archaeological works.

6.5.52 Services of the former buildings and two small below-ground WWII air raid shelters considerably contributed to the truncation of the archaeological remains. The air raid shelters were recorded as structures AS1 and AS2 during the building recording (CgMs 2014).

7 THE FINDS

7.1 Introduction

7.1.1 All specialist assessments have been completed. The exception is the report on the metalwork and glass, where a catalogue has been compiled (Appendix 2) but the report is not yet available. The results of all specialist reports are reproduced below. Results of assessment of materials from the evaluation have not yet been integrated, this will form part of the analysis stage. Research potential and recommendations are discussed in Section 10: Updated Project Design.

7.2 The Romano-British Pottery

7.2.1 By Eniko Hudak

7.3 Introduction

7.3.1 The excavations at Bottisham, Cambridgeshire (ECB4674) yielded a total of 5012 fragments of Romano-British pottery weighing 75.499 kg and representing 64.89 EVEs. The assemblage was fully quantified and catalogued using the standard measures of sherd count, weight, and Estimated Vessel Equivalent (EVEs). The assemblage was recorded using Museum of London fabric codes (Symonds 2002) extended by National Roman Fabric Reference Collection codes (Tomber and Dore 1998) and custom codes where necessary, and the data was entered into an MS Access database.

7.4 The assemblage

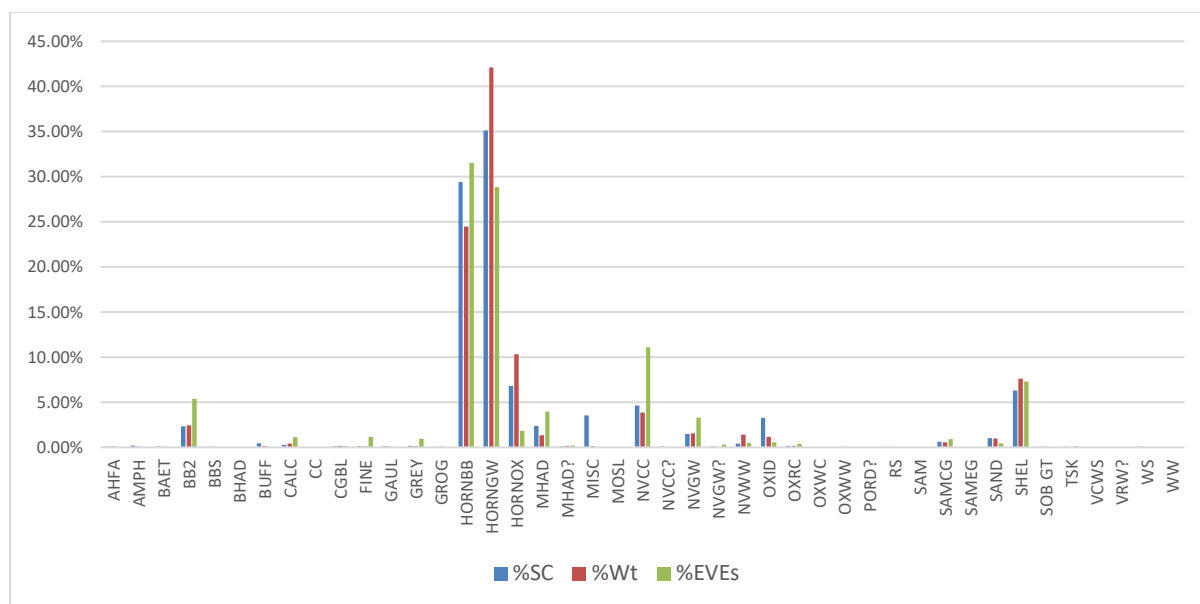
7.4.1 Roman pottery was recovered from 206 individually numbered contexts with 83 sherds being unstratified. Individual context assemblages were mainly small (less than 30 sherds), with 34 medium-sized (30-100 sherds), and nine large assemblages (over 100 sherds). The condition of the assemblage is mixed, but mainly abraded with a mean sherd weight of 15g suggesting that some degree of redeposition had taken place. Only a few fragments were noted to show signs of sooting, burning, limescale, or post-firing perforations.

7.4.2 The majority of the assemblage was recovered from Roman period contexts, especially Sub-period 4.3 – AD250-350 (Table 5). The rest of the assemblage, but still a considerable proportion of the site total (19.7% of SC), were residual in Medieval and Post-medieval contexts (Periods 6 and 8), and a small amount of fragments came from unphased contexts (Period 0).

Phase	Notes	SC	Wt(g)	EVEs
unstratified		83	1686	0.95
Period 4	Unphased Roman	505	6949	4.75
Period 4.1	c. AD120-200/230	6	52	0
Period 4.2	AD200-300	545	9667	8.91
Building 1	Periods 4, 4.2	695	10274	13.07
Building 2	Periods 4, 4.2	333	5406	4.66
Building 3	Periods 0, 4, 4.2	180	4737	2.97
Period 4.3	AD250-350	1673	25920	19.54
Period 4.4	AD300-350	8	111	0.06
Period 6	Medieval	735	7914	7.59
Period 8	Post-medieval	98	1278	1.37
Period 0	Unphased	151	1505	1.02
TOTAL		5012	75499	64.89

Table 5: Quantification of all Romano-British pottery by Period

7.4.3 There is a range of regional, extra-regional and imported fabrics represented in the assemblage dating to both the early and late Roman periods (Graph 1). The assemblage is dominated by coarse wares, in fact, over 71% of the entire site assemblage by sherd count (77% by weight and 62% by EVEs) consists of products of the Horningsea potteries (HORNGW, HORNBB, HORNOX). This is not unusual given the proximity of the site to the Horningsea kilns (cf. Newton 2016).



Graph 1: Overall quantification of the assemblage

7.4.4 The Horningsea Ware fabrics have been divided into reduced (HORNGW), reduced with burnishing/slip (HORNBB), and oxidised (HORNNOX) variants. The equivalent of HORNGW and HORNBB is HOR RE1, and of HORNNOX is HOR OX1 as established by Newton and Peachey (2012). Forms have been identified with the help of Evans 1991 typology, as the range of form variants represented this assemblage better than those published by Newton and Peachey (2012), and the latest publication was not available yet at the time of cataloguing of the assemblage (Evans et al. 2017).

7.4.5 The most common Horningsea forms in the assemblage were jars, followed by dishes and bowls (Table 6). The most commonly occurring jar types included several everted rim, cordoned, beaded rim constricted necked jars and large storage jars, while dishes were mainly plain rim 'dog-dish' style, and bowls were bead-rim/triangular-rim and flanged. The forms and fabrics can be dated to the time the Horningsea kilns were in use mainly in the 2nd and 3rd centuries AD.

7.4.6 Overall, the Horningsea potteries were long-lived and include certain

Gallo-Belgic dish copies in their repertoire which cannot be later than the 1st century. None of these were present within the Tunbridge Lane assemblage. Flanged bowls tend to date to after AD250 and might well be 4th century, thus the overall date of Horningsea pottery is between the late 1st and mid-4th centuries AD (Evans 1991).

Type	Evans 1991 type nos.	EVEs
STORAGE JARS	1-11	2.62
CONSTRICTED NECKED JARS		
everted rimmed cordoned	18-23	2.84
beaded everted rimmed	24-29	14.12
internally ledged	30-35	2.42
beaded shouldered	41-42	2.22
BOWLS		
flanged bowls	52-54	2.03
bead-rimmed bowls	57-58	0.95
bead-rimmed dishes/bowls	69	1.70
DISHES		
simple rimmed dishes	66-67	4.47
simple rimmed dishes with external cordon	68	1.01

Table 6: Horningsea pottery form types by EVEs

7.4.7 The rest of the coarse wares include shell-tempered wares (SHEL), possibly nearby products; Nene Valley grey wares (NVGW), Black-Burnished Wares (BB2, BBS), and Much Hadham wares (MHAD, BHAD); and small amounts of late Roman fabrics such as Alice Holt Farnham ware (AHFA), Portchester D ware (PORD), Oxfordshire White Ware mortaria (OXWW), and Thameside Kent (TSK), ware.

7.4.8 Fine wares are mainly Nene Valley colour coated-wares in forms of beakers, jars, dishes, bowls, and castor boxes (NVCC). There are also some Oxfordshire products (OXRC, OXWC), and very small amounts of Continental imports, such as Central Gaulish Black Slipped (CGBL) wares and Moselkeramik (MOSL). Terra Sigillata (SAM, SAMCG, SAMEG) is scarce, less than 1% of the site assemblage, and includes mainly 6Dr33

type cups, a complete lion's head spout of a 7Dr45 mortarium and a single decorated fragment of a 4Dr30 bowl.

7.4.9 Amphorae are also rare, there are only some fragments of Baetican (BAET) Dressel 20 type olive oil amphorae, Gauloise (GAUL) wine amphorae and unsourced fabrics (AMPH). Mortaria are mainly Nene Valley White Ware grooved flange type (NVWW 7GRF), some MHAD, OXRC, and OXWW.

7.5 Phasing

7.5.1 *Unphased Roman*

7.5.2 A total of 505 sherds weighing 6.949 kg and representing 4.75 EVEs were recovered from unphased Roman contexts (excluding contexts from Buildings 1-3, which are discussed separately below). Unsurprisingly, the most common fabrics are the Horningsea products with 64.16% of sherd count (85.36% of weight, 61.47% of EVEs), followed by Much Hadham and Nene Valley products. The latest dated component of the assemblage consists of very few sherds of OXRC, AHFA, and CALC, which fabrics are all dated to the second half of the 3rd century and later. There are only three fragments of SAMCG including one decorated sherd which was also perforated.

7.5.3 *Early Roman to 3rd century AD, c. AD120-200/230AD (Phase 4.1)*

7.5.4 There were only six sherds (0.052 kg, 0 EVEs) found in Period 4.1 contexts including HORNGW, SHEL, unsourced oxidised wares (OXID), and some Southern British Grog-tempered Ware (SOB GT) fragments, which are probably residual.

7.5.5 *3rd century AD, 200-300AD (Phase 4.2)*

7.5.6 Period 4.2 contexts yielded an assemblage of 545 sherds weighing 9.667 kg and representing 8.91 EVEs (excluding Buildings 1-3). Again, Horningsea products are dominant with 73.94% of sherd count (73.69% weight, 55.11% EVEs) followed by SHEL, Nene Valley products, BB2 and

MHAD. There are a few fragments of CGBL and Terra Sigillata, including a large lion's head spout. The assemblage is also jar dominated, Evans 1991 Type 29 is the most commonly occurring form. There are also some 3rd century Nene Valley curved rimmed and funnel neck indented beakers with barbotine scale decoration, a castor box lid with rouletted decoration (Perrin 1999: Fig. 61), and NVWW grooved-flange mortaria.

7.5.7 *Late 3rd century to early 4th century AD, AD250-350 (Phase 4.3)*

7.5.8 Period 4.3 produced the largest phase assemblage with 1673 sherds weighing 25.920kg and 19.54 EVEs, and included some of the largest individual context assemblages from pits [602] and [682]. Yet again, Horningsea products are most common with 71.49% (77.82%; 51.94%) in forms of Type 29 constricted necked jars, some very large storage jars (Types 1-11), and Type 66 plain rimmed dishes including a flat base from (546) with a graffito (possibly cursive). The post-AD250 flanged bowls (types 52-54) are also more common. Nene Valley products and SHEL are also present in considerable quantities in forms of hooked and everted rim storage jars (SHEL), and some 4th century jars, beakers and flagons including a Howe et al. (1980) type 68 with white painted decoration and a post-firing hole near the handle. Other late 3rd and 4th century fragments include some hooked-rim CALC jars, OXRC bowls and a 7C100 type mortarium (Young 1977). There is a total of eight vessels in this phase assemblage with post-firing holes, four of which came from pit [682].

7.5.9 *Early 4th century AD, 300-350AD (Phase 4.4)*

7.5.10 Only eight sherds were recovered from Period 4.4 (0.111 kg, 0.06 EVEs) including Horningsea ware fragments, and a single sherd of a CALC hooked rim jar.

7.5.11 *Building 1 – 3rd century AD (Phase 4.2)*

7.5.12 A total of 695 sherds weighing 10.274 kg and representing 13.07 EVEs were recovered from the contexts of Building 1. Layer (2001) yielded the

largest individual context assemblage from the site with 473 sherds (6.151 kg, 8.30 EVEs). The proportion of Horningsea products is even higher than the individual Period assemblages with 84.89% of sherd count (83.20%; 79.11%). Forms are mainly type 29 jars, type 66 dishes, and type 52 flanged bowls especially from Layer (2001). Nene Valley products are again well represented, including some 4th century Samian Dr38 copy flanged bowls (Perrin 1999: Fig. 63), some late castor box bases and a lid (ibid. Fig. 62) from contexts (2001) and (2023). There is also a small amount of BB2 and MHAD, and some Continental imports (CGBL and MOSL), but no Terra Sigillata was recovered from Building 1.

7.5.13 *Building 2 – 3rd century AD (Phase 4.2)*

7.5.14 Building 2 contexts yielded 333 sherds (5.406 kg, 4.66 EVEs), with demolition layer (5001)=(465) containing 177 sherds (2.327 kg, 2.78 EVEs). Unlike all the Period and the Buildings assemblages, the Building 2 assemblage is dominated by shell-tempered pottery especially hooked-rim storage jars comprising 49.39% (49.50%; 33.48%), which could suggest a different function of this building. Horningsea pottery follows with 36.28% (38.81%; 34.55%) and includes type 29 jars and type 69 bowls/dishes. There are some NVCC beaker and flanged bowl fragments, and very small amounts of BB2 and the late OXRC bowls. Like Building 1, no Terra Sigillata was found in Building 2 contexts.

7.5.15 *Building 3 – 3rd century AD (Phase 4.2)*

7.5.16 A considerably smaller assemblage was recovered from Building 3 contexts (180 sherds, 4.737 kg, 2.97 EVEs). Similarly to Building 1, the proportion of Horningsea pottery is quite high (83.15%; 88.32%; 67%) in forms of type 29 jars and a considerable amount of the large storage jars (types 1-11). Other coarse ware fabrics include SHEL, NVGW and NVWW, BB2, and MHAD. There are a very few fragments of NVCC, but again, no Terra Sigillata was found.

7.5.17 *Medieval and Modern (Periods 6 and 8)*

7.5.18 About one fifth of the entire site assemblage was residual in medieval and modern contexts: 735 sherds were found in Period 6 (7.914kg, 7.59 EVEs), and 98 sherds in Period 8 contexts (1.278 kg, 1.37 EVEs). These are mainly Horningsea pottery, but there is a wide range of fabrics including the latest of the Roman material such as AHFA, PORD, CALC and OXRC. It also includes the only Samian stamp on site, a rosette stamp from context (248).

7.6 Conclusions

7.6.1 Overall, the assemblage is dominated by products of the Horningsea potteries, which is due to the proximity of the potteries to the site. Despite the small proportion of other coarse and fine wares there is a wide range of Romano-British pottery represented including regional, extra regional and Continental imports dating to the entire Roman period, but with emphasis on the 3rd and 4th centuries AD. In terms of functional analysis, the dominance of coarse wares and jars would suggest a rural site type (Evans 2001), but the occurrence of extra-regional products outside their normal distribution areas (AHFA, PORD) and Continental imports such as CGBL and MOSL indicates access to wider trade networks as well as a degree of wealth. It is also interesting to note that there was no Terra Sigillata found within Buildings 1, 2, and 3; and that Building 2 had a rather different assemblage to the other two buildings in terms of fabrics but not so much in forms, which could indicate a slightly different function.

7.6.2 The assemblage compares very well to that of the possible villa site at Tunbridge Lane (Newton 2016). That assemblage is also heavily biased towards Horningsea products comprising 80-85% of the pottery in each phase, which is also explained by the proximity of the Horningsea potteries reducing the need to import other wares by being readily and cheaply available. The second most common pottery at the villa site are the products of the Lower Nene Valley followed by Oxfordshire and Hadham products. Again, very similar to this assemblage, however shell-tempered wares are not mentioned which form an important component at this site. Samian is also scarce and seems to be long lived, which might

also be true to this assemblage.

7.7 The Post-Roman Pottery

7.7.1 By Berni Sudds

7.8 Introduction

7.8.1 A relatively modest assemblage of post-Roman pottery was recovered during the investigation, amounting to 140 sherds, representing 92 vessels and weighing 1804g. The majority dates to the medieval period, although a small quantity of post-medieval pottery was also retrieved. The fabrics were examined under x20 magnification and recorded using a system of mnemonic codes based on common name. As far as possible these comply with those laid out in the recently published type series for Cambridgeshire (Spoerry 2016), although identification of some sherds remains provisional at this stage.

7.8.2 The pottery was recorded and quantified for each context by fabric, vessel form and decoration using sherd count (with fresh breaks discounted), weight and estimated number of vessels (ENV). An ACCESS database recording these attributes can be found with the site archive. The pottery types encountered appear below in Table 7. A summarised catalogue of the pottery by context, including date ranges and suggested spot dates, is available as an excel table (not reproduced here).

Fabric code	Common name	Date range		SC	ENV	Weight
Late Saxon and early medieval pottery						
NEOT	St Neot's type ware	1175	1100	1	1	5
EMEMS	Early medieval Essex micaceous sandy ware	1050	1225	2	2	12
Medieval pottery						
MEL	Medieval Ely ware	1150	1350	13	24	109
MEMS	Medieval Essex-type micaceous grey sandy wares	1150	1400	14	12	146
HEDI	Hedingham fineware	1150	1350	32	29	263
EAR	Essex/ East-Anglian redware	1150	1400	13	8	110

MSW	Medieval sandy coarseware (including non-Essex micaceous wares)	1175	1400	30	6	603
HUNFSW	Huntingdonshire fen sandy ware	1175	1300	3	3	37
GRIM	Grimston ware	1175	1400	6	3	79
BRIL	Brill/ Boarstall ware (OXAM)	1200	1500	4	1	60
COLS	Colchester-type ware	1200	1400	1	1	4
MISC	Miscellaneous/ unsourced coarsewares	1100	1400	3	1	132
UPG	Unprovenanced glazed ware	1150	1400	3	2	58
LMTC	Late medieval transitional ware with calcareous inclusions	1400	1600	5	1	70
Post-medieval pottery						
GRE BICR	Glazed red earthenware with bichrome decoration	1480	1600	1	1	6
GRE	Glazed red earthenware	1550	1800	4	4	41
PMBL	Post-medieval black glazed red earthenware	1580	1700	1	1	10
STSL	Staffordshire-type combed slipware	1660	1870	1	1	9
PEAR TR	Pearlware with transfer-printed decoration	1770	1840	1	1	4
ENGS	English stoneware	1800	1900	1	1	32
YELL	Yellow ware	1820	1900	1	1	1

Table 7: Medieval pottery types

SC = Sherd count; ENV = Estimated number of vessels; Weight in grams pottery types

7.9 The Assemblage

7.9.1 Very little pottery pre-dating the late 12th century was recovered from site, with just one of Late Saxon date, and just two sherds of possible early medieval date. The majority dates from the late 12th to 14th century, and where present decoration is most indicative of a late 12th to 13th century date. The remainder of the assemblage is comprised of a small quantity of late-medieval and post-medieval pottery.

7.9.2 Bottisham lies on the border between two ceramically defined sub-regions, the Cambridgeshire fen edge and south Cambridgeshire. Whilst these do not constitute hard and fast divisions, there is a notable difference in ceramic consumption between the villages of these two

areas (Spoerry 2016, 35-40 and 49-56). As might be expected the assemblage from site indicates Bottisham shares traits in common with both regions, but fundamentally has greater affinities with assemblages to the south of the county, dominated by products from Essex (Spoerry 2016, 49-50).

7.9.3 The single Late Saxon vessel is represented by a non-diagnostic body sherd of St Neot's type ware, ubiquitous to the region. The two sherds of early medieval pottery, one from pit fill (263) and the second unstratified, appear to be from the same vessel, a micaceous coarseware jar provisionally identified as Early medieval Essex micaceous sandy ware (EMEMS). The medieval coarseware assemblage is comprised of micaceous sandy wares both from Essex, in the form of Medieval Essex-type micaceous grey sandy wares (MEMS), but also probably from Suffolk. The latter group includes 24 sherds from the same unstratified flared bowl with a squared rim and a high thumbed shoulder. The vessel is a close match to Hollesley-type ware bowls from Suffolk, although could be from another centre in Suffolk producing a similar range of wares as part of broader tradition (Anderson 2004; P. Thompson pers comm.). These have been provisionally included under the Medieval Sandy Coarseware fabric code (MSW), although should probably be assigned a new code. Further examples attributed to this fabric are also probably from Suffolk, including a couple of Bury Sandy wares, but the assemblage also includes non-micaceous sandy wares from as yet identified sources that more typically characterise this group (Spoerry 2016, 238). Smaller quantities of Medieval Ely ware (MEL) and Huntingdonshire fen sandy ware (HUNFSW) were also recovered that demonstrate more limited contact to the north and north-west. Other than the bowl, there are few diagnostic coarseware sherds, but these include a MEMS squared jar rim and three body sherds decorated with applied thumbed strips (MEL; MEMS; MSW).

7.9.4 The glazed wares are dominated by products from Essex, most notably Hedingham fineware (HEDI), as identified at Fulbourn to the south-west of

Bottisham (Spoerry 2016, Table 6.1). These largely occur in the sandier fabric, commonly used for the distinctive 13th century strip jugs of the industry, of which at least two were identified in the assemblage (pit fills 314 and 352), although the finer fabric was also recorded. There are also several more generic Essex/ East-Anglian redware jugs that cannot be sourced to a kiln, although at least one example is probably from Colchester and another possibly from Harlow. The remaining glazed wares include nine jugs from Ely, three from Grimston and one from Brill (MEL; GRIM and BRILL). The Medieval Ely ware jugs include one with a stab-decorated rim and another with applied rouletted strip decoration. Jugs produced at Grimston in Norfolk and Brill in Buckinghamshire travel relatively far from source. The single jug from Brill, sherds of which were found in both pit fill (239) and (350), has a biconical profile and is decorated with applied body coloured and red clay vertical and diagonal strips. The vessel is hard and high-fired, however, and possibly represents a later product of the industry.

7.9.5 Just five sherds of Late medieval transitional ware (LMTC) were recorded, all from the same vessel, deposited in demolition layer (2001) with a bichrome glazed red earthenware (GRE BICR). The latter is superficially similar to Ely Bichrome ware but is quite sandy in texture, possibly indicating an alternative source. Together, these vessels are suggestive of a 16th century date. Post-medieval black glazed red earthenware was also made in Ely, but the single tyg base from site relatively is relatively low-fired, more akin to Essex examples. The handful of remaining post-medieval pottery is comprised of well-paralleled mass-produced regional types.

7.10 Distribution

7.10.1 Most of the pottery was recovered from a series of inter-cutting Phase 6 pits and ditches towards the north-western end of the site, with a small quantity considered intrusive within Roman features (Phases 4-4.3), and just two sherds retrieved from a modern cut (Phase 8). Although many of the feature assemblages are small, and the fragmentary condition of the

material is indicative of re-deposition, a few larger groups were recovered, including from pits [240] and [358], and together with some instances of large fresh con-joining sherds, suggest the pottery was dumped as rubbish from activity nearby. The earliest post-Roman pottery, represented by three sherds of Late Saxon and early medieval date, was either intrusive within a Roman ditch, unstratified or deposited with later pottery, so there is no definitive evidence that the site was being exploited prior to late 12th century, although activity of this date is implied in the vicinity. Similarly, evidence for activity dating to the late medieval and post-medieval period, although present, is relatively slight.

- 7.10.2 The range of form types recovered can be well-paralleled in medieval assemblages, although the relative quantities are atypical. Jar forms tend to dominate, particularly in rural assemblages, with a smaller quantity of jugs being recovered. In the current assemblage jugs are over twice as frequent as jars, even accepting a bias towards their identification in sherd material through the presence of glaze. The number of jugs is clearly in excess of what might be expected in a general domestic context and more typical of a high-status household.

7.11 Ceramic Building Material

- 7.11.1 By Dr. Kevin Hayward

7.12 Introduction and Aims

- 7.12.1 A very large assemblage (9416 examples 1839 kg) of ceramic building material was assessed in order to:
- Identify the form and distribution of the Roman ceramic building material.
 - Identify any ceramic building material that is medieval or post medieval in date.
 - Produce an excel catalogue of ceramic building material Bottishamcbm.xls.

- Please refer to other aspects of the building material assemblage at Bottisham including stone (Hayward 2017a), mortar (Hayward 2017b) and painted wall plaster (Seddon 2017).
- Make recommendations for further study including suggestions for a fabric overview of ceramic building material at Bottisham.

7.13 Methodology

- 7.13.1 A 100% retention policy for the ceramic building material excavated at Bottisham was put in place. This enabled a detailed considered review of the brick, roofing tile and box flue to be made for this Romano-British building; It was hoped that a detailed review of their distribution, would begin to establish what the building(s) (B1-B3) was used for and whether their function changed over time.
- 7.13.2 Processing was undertaken In-house by Heidi Hauser at PCA central office in Cambridge and a complete catalogue was produced (Bottishamcbm.xls)
- 7.13.3 With the absence of a Cambridgeshire Roman ceramic building fabric collection, it was decided to leave an overview of the fabric until publication stage.

7.14 Local Clay Resources

- 7.14.1 Upper Cretaceous Lower Chalk including the underlying Cambridge Greensand dominates the underlying geology of this part of Cambridgeshire. There is also a blanket of Anglian Till to consider with its wide array of hard erratic materials from west and north Britain. There are outcrops of brick clay in the Gault to the south-west at Cambridge (Worssam & Taylor 1969. 130), whilst Kimmeridge clay and the underlying glacial till have in the past been used as a source of clay for the brick in Cambridgeshire (Worssam & Taylor 1969, 130).

7.15 Roman Ceramic Building Material

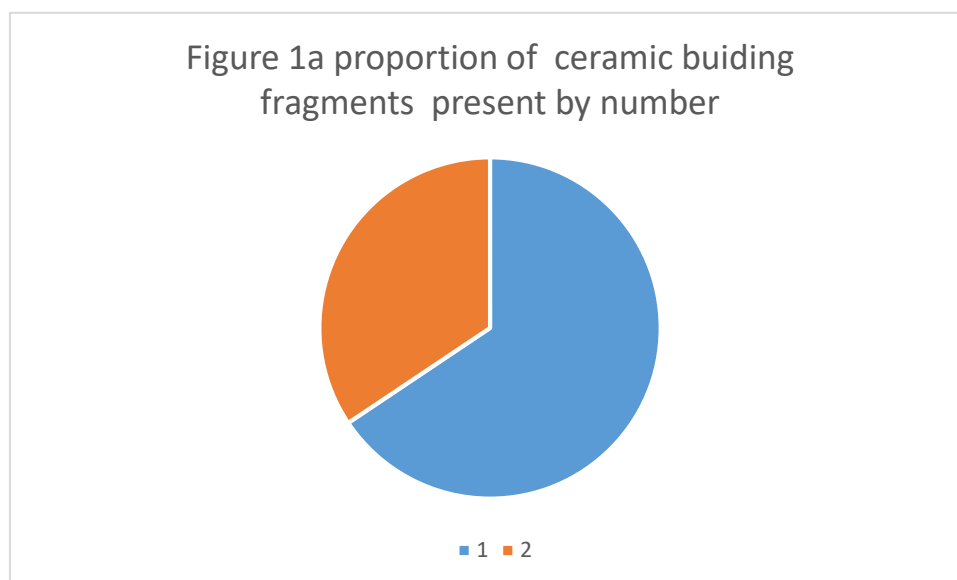
- 7.15.1 Quantity 9416 examples 1839kg.

7.15.2 As expected the largest quantities of ceramic building material recovered are those used in the construction and demolition of the three buildings on site (B1-B3) (6178 examples 1424 kg) (Graph 2 Figure 1a). Other features away from these buildings contributed 3238 examples, but a much lower weight (415kg) which can be explained by the fact that many are from dumps consisting of smaller broken up brick and tile fragments. For a detailed breakdown of ceramic building material by form, please refer to the comprehensive database Bottishamcbm.xls.

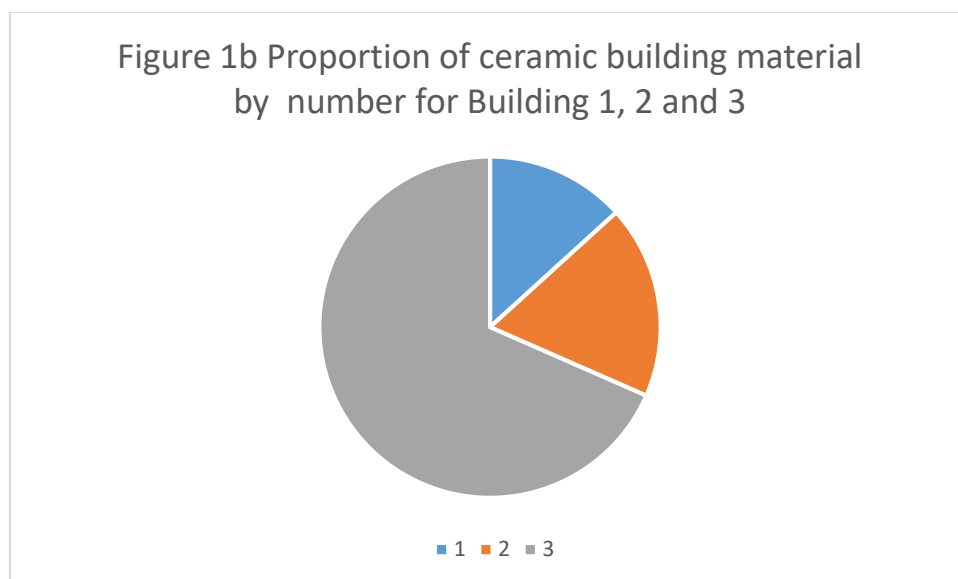
7.15.3 *Buildings*

7.15.4 A review of the proportion of ceramic building material by number and by weight used in each of the three buildings (B1-B3) is illustrated in Graph 3 (Figure 1b) and Graph 4 (Figure 1c) respectively. It can be shown that Building 3 accounts for three quarters to two thirds of all Roman dated material, with Building 1 and 2 comparable by size.

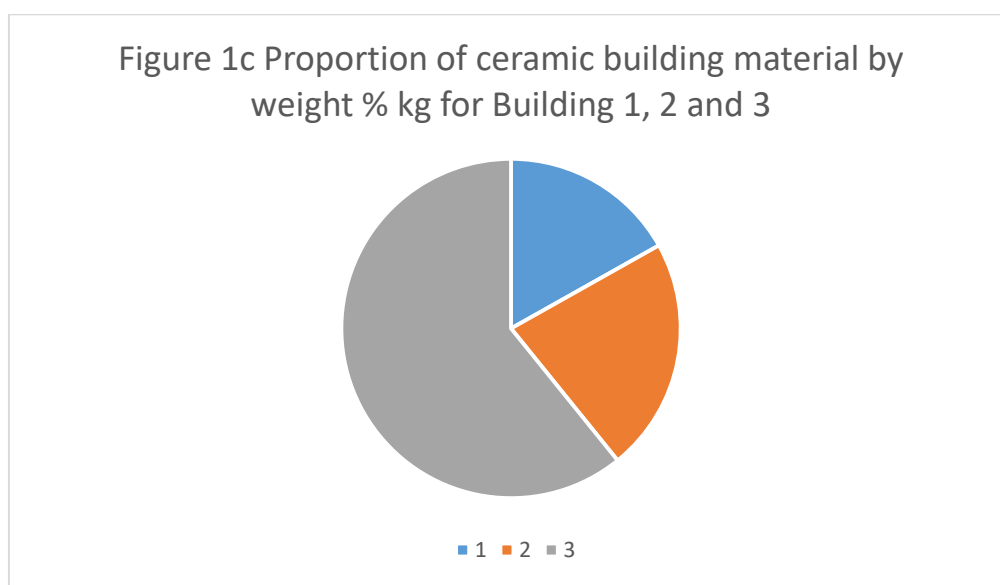
7.15.5 The types of ceramic building material present varied considerably from one building to another, reflecting that each had a separate function.



Graph 2 (Figure 1a): 1= Buildings 2= Well fills and Ditches



Graph 3 (Figure 1b): Proportion of Roman ceramic building material by number for each building at Bottisham



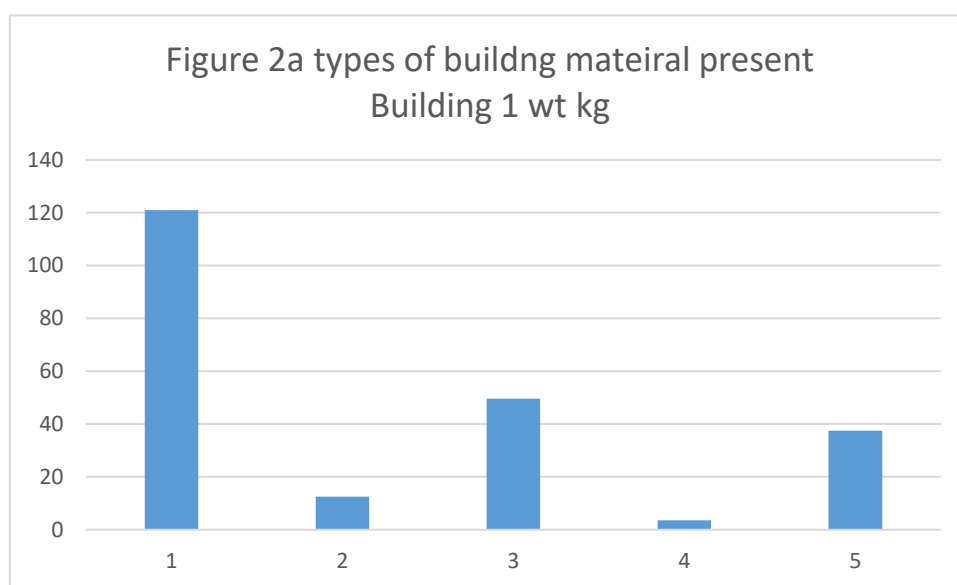
Graph 4: (Figure 1c) Proportion of Roman ceramic building material by wt % for each building at Bottisham

7.15.6 *Building 1*

7.15.7 819 examples 240kg.

7.15.8 It can be seen in Graph 5 (Figure 2a) that brick was utterly dominant as a

building material, whilst other flat elements such as tegulae and flat tile are present also. What is remarkable here is how little curved imbrex has survived 3.5kg, this would indicate that reuse of flat elements was important in this building, indicating that the construction was rather rapidly constructed.



Graph 5 (Figure 2a): Types of building material present

1= Brick 2=Box flue 3= Tegulae 4=imbrex 5= Roman Tile undifferentiated

7.15.9 *Building 2*

7.15.10 1132 examples 318kg

7.15.11 Significant proportions of Roman roofing tile (tegulae and imbrex) dominate this group, which would suggest that this is a ceramic tiled roof structure (period 4.2) that had suffered subsequent in-situ collapse (period 4.3). Figure 2b illustrates the abundance of roofing tile in both imbrex and tegulae, with negligible Roman brick. From this, we should surmise that Building 2 is almost certainly a timber framed wattle and daub structure with a ceramic tiled flanged and curved roof.

7.15.12 *Building 3*

7.15.13 4227 examples 866kg

7.15.14 Huge quantities of combed Box flue tile were present in this structure, including rare examples of trapezoidal shaped box flue tile elements, suggesting that this structure had extensive wall jacketing. Figure 2c illustrates that over half (451kg) is box flue tile and with 10% roofing material, and 25% brick the indications are that building 3 did not have a ceramic tiled roof and stone (clunch ashlar) rather than brick may have, in the main. been a preferred construction material. Even at a bathhouse site 10% box flue tile would normally be the order of the day, so the presence of such enormous quantities swamping everything else this would suggest rapid disuse and disintegration of this heated building.

7.15.15 *Peripheral ditches and Pits*

7.15.16 The character of the ceramic building material away from the buildings is summarised in Figure 2d. There are large quantities of curved imbrex and flanged tegulae which suggests preferential dumping of shaped elements that could not be reused as building material. What is more the roofing tile (imbrex, flat and tegulae) also have pigment (see below) suggesting dumping from a completely separate building to B1-B3. No coloured tegulae were recovered from these structures.

7.15.17 By contrast 6he fill [752] [753] [757] of the well is characterised by a small group of horizontal Roman building materials (39kg) dominated by what appear to be large largely offset pilae stacks consisting of rectangular bricks, smaller than Lydians coated in a thick plaster like mortar (Type 3). The serve no functional purpose and it may be they represent stucco covered bricks intended to resemble stone moulds.

7.16 Brick

7.16.1 A review of the brick assemblage particularly from Building 1, shows little variation in thickness between 36 and 42mm. These thicknesses are consistent with small pedalis to lydian sized bricks rather than much larger bipedalis or sesquipedalis. Many examples of brick laid on top of one another as heated pilae stacks are present in the well fill [753]. Some of these however are offset and are coated in a thick low-density plaster.

7.17 Roofing Tile

7.17.1 Standardisation of the flanged profile and cut away in the tegulae standard dimensions in the imbrex, from building 2 at least, suggest a single build.

7.17.2 Painted roofing tile?

7.17.3 The roofing material assemblage from Bottisham had a sizeable group if painted or dipped red, brown and white tegulae, flat tile and imbrex from the fill [417] [476] [477] [478] [479] of a period 4.3 pits and ditches away from the buildings. The roofing elements are coated all over in these pigments suggesting that after firing that had been dipped into some sort of solution to stand out. No known parallel has been uncovered of this oddity so far, but further research may help establish what they were intended for. What is clear is that they represent dumped roofing material from an entirely separate construction to buildings 1 to 3, which contain no painted roofing material. Some of the imbrex appear to be tightly angled ridge tiles that ran along the apex of the roof perhaps accentuating these colours.

7.18 Box Flue Tile

7.18.1 The very large box flue from the assemblage from Bottisham is all combed, with no evidence of roller stamped dies nor early knife scored forms. The combing is usually linear or diagonal or more rarely waved or semi-circular. Within this homogeneity there are examples of trapezoidal shaped cavity walling perhaps acting as vaulting or arching of a dome in Building 3 [3033] as well as examples of possible half box flue tile forms. Although the latter are usually associated with mid late first century box flues in London (Pringle 2006), no direct comparison should be made between the two. What is more likely is that the half box flue tile and trapezoidal shaped box flue at Bottisham simply reflects regional variability. These are nearly always coated in waterproof *opus signinum* suggested that they are likely to have been used to circulate steam.

7.18.2 Medieval and Post Medieval building materials

7.18.3 9 examples 530g

7.18.4 Only brief comment needs to be made about the very small quantity of peg tile and brick that was recovered from the excavations. The peg tile is all intrusive particularly from a period 4 ditch and; pits [237] [243] [306] [367] [417] [479], whilst a small quantity of red brick from comes from a modern fill [559].

7.19 Discussion

7.19.1 Accurate recording of the entire ceramic building material assemblage used in roofing, cavity walling, and structural build of a series of Romano-British rural buildings at Bottisham provides a unique dataset that forms the basis for further work. The function on the building remains unresolved.

7.19.2 What is immediately apparent from this review is that each of the three buildings (B1-B3) were constructed in different ways. Building 1 was dominated by flat horizontal elements, particularly brick. Furthermore, the near absence of curved imbrex but not flanged tegulae suggests preferential reuse of the flatter flanged elements. Large dumps of curved imbrex in the pits and ditches away from the buildings support this. One further consequence of this dearth of curved roofing elements and near total absence of stone roofing tile at this site (Hayward 2017a) is that Building 1 must have had a thatched or shingled roof. Building 2 on the other hand could only have had a ceramic roof, as tegulae and imbrex are so dominant and in all probability the roof must have collapsed on itself such is the concentration of these elements. Finally the largest Building 3, is dominated by over 450kg combed standard box flue cavity walling elements some of which are trapezoidal shaped. The size and preservation of some of the elements are good and this building provides a good snapshot into the use of a heated building in Eastern England.

7.20 Mortar

7.20.1 By Dr Kevin Hayward

7.21 Introduction and Aims

7.21.1 Two crates and three tubs of mortar, *opus signinum* and daub were retained. This large sized assemblage (669 large examples 27.8kg) was assessed in order to:

- Identify the fabric of each of the different mortar and *opus signinum* types.
- Identify whether it has been possible to relate these different recipes to individual buildings or different building phases.
- Produce a catalogue of mortar types MortarECB4674.mdb
- Please refer to other aspects of the building material assemblage at Bottisham including stone (Hayward 2017a), ceramic building material (Hayward 2017c) and painted wall plaster (Seddon 2017).
- Made recommendations for further study.

7.22 Methodology

7.22.1 The application of a 1kg masons hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10). Background geology involved the consultation of the relevant 1:50000 geological maps for this area sheet 188 (Cambridge), 204 (Biggleswade) 205 (Saffron Walden) and memoir (Worssam & Taylor 1969).

7.23 Local Mortar resources

7.23.1 The underlying geology of this part of Cambridgeshire is dominated by Upper Cretaceous Lower to Upper Chalk including the underlying Cambridge Greensand (Taylor & Worssam 1969) There is also a blanket of Anglian Till to consider with its wide array of hard erratic materials from west and north Britain. Only the glauconitic chalk, clunch has been used as a dimension stone within the Cambridge area, with large outcrops exploited since Roman times in to the 20th century. All of these local materials must be considered when examining the composition of the mortar at Bottisham.

7.24 Mortar Types

7.24.1 A review of seven Mortar types, identified from Bottisham are summarised below (Table 8: Listing of mortar types). A more detailed consideration as to their origin and use of this moderate assemblage are reviewed below in the summary.

7.24.2 Mortar types used to bond reused ceramic building material and barnack stone in masonry structures from the villa house structures including those used in period 4.2. Contexts in Building 1 [2001] [2003] [2012] [2037] [2048] [2050] [2052], Building 3 [3019] [3022] [3038] [3046], Building 2 [5015] [5018] consist of a range of loose orange-brown light brown sandy lime mortar with chalk and flint inclusions (Types 1; 1a; 1b). These mortars are also attached to stone and ceramic building material in large dump and demolition layers associated with these buildings [2025] [2027] [5001] [5004] [5005] [5014] [5037] [5040] [5051]

7.24.3 The brown sandiest recipe (Type 1) is associated with structures from Building 1 [2048] [2052] but mainly Building 3 [3019] [3022] as well as dump [3048]. There is also a large group of this mortar from the demolition of Building 2 [5001] where sill fragments are found.

7.24.4 The cream-brown Type 1a is the most common especially structures [2003] [2012] [2037] [2050] and dumps [2025] [2027] from Building 1 and structures [3046] from Building 3 but none from demolition or structures associated with Building 2.

7.24.5 Type 1b more organic like (daub like) and is only from structures [5015] [5018] and demolition horizons [5004] [5005] [5014] [5037] [5040] [5042] [5051]. associated with Building 2.

7.24.6 The lining for the later period 4.3 well [756] is coated with a clay rich puddled mortar (Type 4) which may have served as an impenetrable impermeable skin.

7.24.7 *Opus signinum*

7.24.8 Hard, waterproof pink Roman concrete is represented by Type 5. This material, which contains large 20mm chunks of Roman concrete, is present in one structure, the surface or flooring of Building 1 [2054]. Chunks are widely dispersed in the Period 4.2 fills of Ditch 1 [176] Ditch 2 [333], Ditch 8 [658] Ditch 12 [440], and Roman Period 4 fills of Ditch 29 [267] [270] Ditch 31 [217] Period 6 pit fills [239] [247] [248] [320] [361] This may suggest that they derive from buildings outside of the excavated area, although it seems likely that they represent waterproof flooring or just possibly coating for *bessalis pilae*.

7.24.9 *Plaster backing and coating*

7.24.10 This mortar type is common throughout the site. It is a grey, low density, tuffaceous vegetative daub like plaster which is present in the Period 4.3 well fill in large quantities as loose fragments [759] but more especially coating the wedge shaped stacked small lydion bricks, that may mimic stone cornices. Examples are present in Building 2. Curved and sill like faced plaster form a distinctive profile in later period 4.3 pits [417] [479] one with pink and yellow paint). Some back flat wall plaster fragments in the 4.3 fil of ditch 18 [306] [367] (see Sudds 2017) A pink low density pink *opus signinum* type mortar (Type 2) may also represent backing for plaster with examples from in the fill of the robber trench in Building 3 [3054] and fill of period 4.3 pit [580].

Mortar/Concrete Type	Description	Use at ECB4674
Type 1 Orange-brown light brown sandy lime mortar	Loose orange-brown light brown sandy lime mortar with chalk and flint inclusions; when weathered forms loose sand	Present Building 1 and 3 only [2048][2052] [3019] [3022]
Type 1a Cream brown sandy lime mortar	Cream brown sandy lime mortar with chalk and flint inclusions	Building 1 and 3 only structures [2003] [2012] [2037] [2050] [3046] Very common demolition only [479] [2025] [2027] (adhered to Roman brick) Sill Fragments [2001]
Type 1b Cream brown sandy lime mortar with numerous organic chaff	Cream brown sandy lime mortar with chalk and flint inclusions with numerous organic inclusions almost daub like in composition	Very common Building 2 only structural [5015] [5018] [5004] [5005] [5014] [5037 and

inclusions		demolition horizons [5051] Sill [5042]
Type 2 Fine <i>opus signinum</i> low density	<i>Opus signinum</i> pale pink with grey thin crust inclusions tiny chunks of red ceramic building materials 10mm across maximum with occasional chalk 5mm, gritty vitrified ceramic building material - occasional flint 25mm	Occasional [+] [367] [460] [2026] Building 1 period 4.2 structure [2048] [2050] Building 3 4.2 structure [3092] Plaster [580] robber trench Building 3 [3054] None from Building 2
Type 3 Low density white cream. weathered brown skin plaster mortar	Low density white cream brown skin low density tufaceous mortar lots of chaff inclusions white huge pebble	Very Common faced, curved fragments especially in period 4.3 ditches and pit fills [162] [163] [281] [597] Building 3 4.2 walls [3016] Curved faced distinctive profile [417] [479] (this one with pink and yellow paint) Plaster [306] [367] [480] Daub like [415] [417] [471] [753] [756] in fill of 4.3 well [759] [760] [2001] [5041] Weathered [176] [178] [237] [289] Little from Building 2
Type 4 Clay rich puddled mortar	Clay rich puddled grey light green mortar gley occasional chalk organic inclusions Dauby fabric	Only associated with the later Period 4.3 well lining [756]
Type 5 Very coarse hard <i>opus signinum</i>	Hard pink red <i>opus signinum</i> – very large chunks of red brick, chalk and tufa	Common in Roman and post Roman ditch and pit fills [176] [217] [239] [247] [248] [267] [270] [310] [320] [331] [333] [361] [267] [415] [440] [550] [659] [] some backing plaster [522] One structure floor of Building 1 [2054]
nType 6 very hard gravel concrete mortar	Modern pebble concrete with very hard bonding mortar and brown, black and white pebbles	[+] modern

Table 8: Listing of mortar types

7.25 Discussion

7.25.1 A review of the mortar, *opus signinum* and possible daub fabrics recovered from Bottisham shows an array of recipes used in Buildings 1-

3.

7.25.2 Subtly different bedding sandy-brown opus caementatum lime mortars are associated with particular buildings. For example the Type 1b Cream brown sandy lime mortar with numerous organic chaff inclusions is found only in Building 2, whilst the browner Type 1 and Type 1b mortars are found in walls associated with buildings 1 and 3.

7.25.3 Very little of the hard, waterproof *opus signinum* recovered from Bottisham was found in-situ. The exception was its use in the flooring of building 1, the far majority dumped in ditches at the periphery of the site perhaps indicating that the material may have derived from other (as yet) unexcavated structures. All of this material was probably used to line the flooring of some of the buildings, perhaps as a waterproof sealant especially in rooms where painted wall plaster was uncovered (Seddon 2017).

It is likely that at least some of the moulded plaster like mortar (Type 3) was probably used as painted wall plaster as at least one example [479] shows. The remainder seems to complete coat many examples of stacked offset and wedged fired clay bessalis brick possibly to mimic moulded stone in the form of stucco. This would make logistical and economic sense given that freshly brought in and carved stone would be a more costly exercise than on site production in an area devoid of stone suitable for fine carving.

7.26 Stone

7.26.1 By Dr. Kevin Hayward

7.27 Introduction and Aims

7.27.1 Nine tubs of ashlar, one crate and twenty loose examples ashlar, quernstone, architectural stone and paving were retained. This large sized assemblage (156 examples 466kg) was assessed in order to:

- Identify the fabric of the unworked and worked stone in order to determine what the material was made of and from where it was coming from.
- Identify the form and function of the stone to provide clues as to its use at Bottisham
- Database stonebottisham.mdb accompanies this document.
- Please refer to other aspects of the building material assemblage at Bottisham including mortar (Hayward 2017b), ceramic building material (Hayward 2017c) and painted wall plaster (Seddon 2017)
- Made recommendations for further study.

7.28 Methodology

7.28.1 The application of a 1kg masons hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

7.28.2 As there was no Cambridgeshire stone fabric reference collection housed at PCA consultation of the relevant 1:50000 geological maps for this area sheet 188 (Cambridge), 204 (Biggleswade) 205 (Saffron Walden) and memoir (Worssam & Taylor 1969) provided the local geological background. An additional source of information was provided by the specialists own reference collection of stone samples compiled from earlier research (Hayward 2006; 2009). Where the stone fabric matched with the Museum of London series, it was designated the appropriate MoL 4digit code. However, where the stone fabric had no exact match, the fabric was prefixed by CAM and a number thus CAM1.

7.29 Local stone resources

7.29.1 Upper Cretaceous Lower Chalk including the underlying Cambridge Greensand (Worssam & Taylor 1969) dominates the underlying geology of this part of Cambridgeshire. There is also a blanket of Anglian Till to consider with its wide array of hard erratic materials from west and north

Britain. Only the glauconitic chalk, Totternhoe stone from the underlying Lower Chalk (Worssam & Taylor 1969) has been used as a dimension stone within the Cambridge area, with large outcrops exploited since Roman times in to the 20th century. Alternative material choices to stone therefore need to be considered, such stucco faced brick.

7.29.2 The site, however is accessible via the Cam the Car Dyke to more robust outcrops of freestone from the Lincolnshire Limestone Group (Barnack, Weldon stone) and further north the Millstone Grit outcrops of South Yorkshire. In the absence of hard local stone materials, the value of Millstone Grit and Barnack stone as a secondary walling material needs to be considered.

7.30 Stone – Petrology

7.30.1 A review of 14 rock types, their geological character, source and probable function/ form are summarised below (Table 9: Table summarising the character, source, quantity and probable function of the main stone types). A more detailed consideration as to their origin and use of this moderate assemblage are reviewed below in the summary.

MoL fabric code	Description	Geological Type and source	Use at ECB4886
3108	Fine laminated glauconitic sandstone	Greensand source undetermined probably local	Paving or possible roofing fragment made ground Building 2 [5031] 1 example 30g
3109	Calf brown open textured shelly oolitic limestone with oyster plucked ooids	Blisworth Limestone, Middle Jurassic (Bathonian)	Rare Two ashlar blocks one in period 4.2 wall fill of Building 1 [2018] ANOTHER FROM [5006] 6.1kg
3112	Hard dark grey condensed limestone packed full of small freshwater gastropods <i>Viviparus cariniferus</i>	Purbeck marble, Lower Cretaceous, (Purbeckian) Isle of Purbeck, Dorset	One example Part of a stone mortar period 6 pit fill [239] 0.2kg
3116	White fine soft powdery limestone	Upper Chalk, Upper Cretaceous, Cambridgeshire	Very common 50 examples 14.8kg Mainly rubble [561] Facing blocks in building 1 4.2 [2050] [2052] but also burnt chalk [163] [756] Loomweight

			period 4.3 pit fill [603]
3117	Hard, fine dark grey-black siliceous sediment breaks with a conchoidal fracture	Flint, Upper Chalk, Upper Cretaceous, Cambridgeshire	Rubble [476], pot boiler [720] Hammerstone reused in rubble material Building 1 [2027] 4 examples 0.8 kg
CAM1	Conglomerate – large white fractured quartz and pink feldspar pebbles, occasional old red sandstone lath set in very hard fine dark grey sandy matrix	, Quartz Conglomerate, Basal Upper Devonian, Forest of Dean	Present: Quern 6 examples 12.kg one possible saddle quern in a Roman pit [732] large group in Building 2 demolition horizon [5001]
CAM2	Fine very pale cream cryptocrystalline quartz sandstone	Sarsen, Palaeogene,	Two examples 207g Hammer stone period 4.3 pit fill [603]
CAM3	Hard fine grey-white sandstone	Bunter pebble or block from local Anglian Till Deposit, plucked from Triassic sandstone deposits in the West Midlands	One example reused Rubble 6kg posthole fill Building 1 [2034]
CAM4	Fine microcrystalline igneous rock probable dolerite inclusions from Boulder clay	Basic igneous erratic probably dolerite Western or northern Britain or Norway	One example 353g period 4.2 pit [706]
3121	Fine pale cream concretionary calcareous clay	Septarian Nodule, Tertiary	One example Rubble 0.8kg Masonry wall 4.2 Building 1 [2052]
3123	Weathered lumps of light grey vesicular lavastone with inclusions of white leucite	Neidermendig Lavastone, Tertiary, Andernach region of the Rhine	Present - Quern small very degraded lumps 32 examples 0.6kg mainly period 4.2 ditches and period 6 features [171] [359] [396] [397] [480] [590]
3125	Low density green glauconitic chalk (limestone)	Clunch Upper Cretaceous, Cambridgeshire	Present examples 3.3kg [100] [104] [108] [113] building rubble/ashlar but present only in topsoil
3130	Pale cream sugary open textured coarse quartz arenite (sandstone) to gritstone	Millstone Grit Upper Carboniferous (Namurian) South Yorkshire – Derbyshire possibly Rough Rock which has been identified at Earith and Langdale (Hayward 2006a; b)	Common - Querns 12 examples 40.3kg often period 4.3 ditches [163] [421] [476] [546] [603] [717] Large group in 4.3 Well fill [756] 4 large examples in Building 2 demolition horizon reused as rubble [2001]

3143	Very hard sparry, light cream brown shelly oolitic limestone, with nerineid or spired gastropods	Barnack stone, Middle Jurassic (Bajocian) Barnack, Cambridgeshire	Abundant in large quantities 38 examples 372kg as rubble, very large paving or coursing elements, ashlar, cornice or plinth elements Most reused or used period 4.2 [5002] [5006] [5009] walling Building 2 Building 3 [3019] and Building 1 [2052] [2018] demolition [5001] A many deposited in 4.3 well fill [756]
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Table 9: Table summarising the character, source, quantity and probable function of the main stone types

7.30.2 *Quern (53.3kg 50 examples)*

7.30.3 The use of stone for a specific purpose often requires material being brought in from further afield. A case in point are the three lithotypes used as rotary quern fragments from Bottisham. German lavastone fragments from the Rhineland are present as degraded lumps in very small quantities away from the structures in period 4.2 ditches [171] [396] [397] [590] pit fills [480] and redeposited period 6 features [359]. Millstone grit the hardest and most common material type (40kg) was supplied from South Yorkshire and used as large rotary quern blocks. However, because of the stones durability it had a second use, chopped up and employed as rubblestone for foundation walling material along with Barnack stone as shown from the demolition horizon from Building [2001]. Another group were found dumped within the period 4.3 well fill [756]. The third type, a hard quartz conglomerate from the Upper Devonian of the Forest of Dean (Shaffrey 2006) was similarly broken up and reused as a building stone as shown by its presence in Building 2 demolition horizon present in the [5001]. Another example was found in a Roman pit fill [732].

7.30.4 *Rubblestone, ashlar, container, coping stone (405 kg)*

7.30.5 Most of the assemblage consists of rubblestone used in the foundation

walling of all the buildings. These include both local outcrop materials, clunch, chalk, flint, Sarsen, septarian nodules and Anglian erratics (Dolerite and Triassic sandstone), reused quern (see above) as well as Barnack and Blisworth limestone from North Cambridgeshire and Northamptonshire respectively. Although, many of these limestone chunks appear unworked and without tool marks, it is likely that they arrived at the site partly dressed, perhaps as ashlar or paving. Indeed some of the larger blocks have rough coarse chisel marks. One example of Barnack stone is shaped into a coping element was reused as walling rubble in period 4.2 Building 2 [5002] whilst another had been worked into an 80kg trough or reservoir for water was dumped into the fill of a period 4.3 well [752]. What is clear however is that neither stone has been worked into any intricate sculptural blocks. By contrast, at Stanwick villa, Northamptonshire huge quantities of Blisworth limestone have intricate figured carving depicting various deities that formed part of at least one large Eifel type funeral monument (Coombe, Hayward & Henig in prep.). This would suggest that the freestone at Bottisham had a more functional, structural role. There are also no columns nor any other forms of architectural embellishment, apart from roughly dressed cornice stone something you would expect had these buildings commanded a more decorative function. An absence of stone and ceramic tesserae, native and continental marble inlays from Bottisham would also support the notion that the buildings had more of a commercial role.

7.30.6 Stone Mortar

7.30.7 The use of Purbeck marble, from the Lower Cretaceous of the Dorset coast at Bottisham for purpose of processing and grinding foodstuffs as a stone mortar is evident from a shaped bowl from a modern pit fill [239]. Although this is a rare find, there are further cases of the use of Purbeck marble mortar in the interior of Eastern Britannia as in the example from Stanwick in Northamptonshire (Coombe, Hayward & Henig in prep.)

7.30.8 Roofing/paving

7.30.9 Only one possible stone roofing/paving tile element, a laminated glauconitic sandstone from made ground for Building 2 [5031] was present. By contrast there are very large quantities of tegulae and imbrex, suggesting that many of the roofed structures are ceramic tiled topped, or just possibly shingle and thatch.

7.31 Discussion

7.31.1 The value of this stone assemblage very much lies on the geological character and source of the stone materials. Cambridgeshire is devoid of very hard local suitable for use in stone walling and quern, which means that stone has been brought in from afar. The mere fact that many of the quernstones and ashlar have been reused in the walling of Period 4.2 (200-300AD) Buildings 1-3, supports the idea that stone was indeed a valuable commodity.

7.31.2 There are a variety of stone materials recovered from Bottisham (Millstone Grit, German Lavastone, Old Red Sandstone Forest of Dean, Purbeck marble, Barnack stone and Blisworth stone). This very much reflects how much reliance has put on bringing in materials from quern and rubblestone, ashlar and architectural stone production from great distance. Bottisham's access to these outcrops was made possible by the Car Dyke and River system connecting it to Carboniferous sandstone from South Yorkshire, Devonian sandstones from the Forest of Dean and Bajocian and Bathonian Lincolnshire Limestones from Cambridgeshire and Northamptonshire.

7.31.3 The use of such a diverse array of quernstone types is seen at many other Romano-British rural sites in Cambridgeshire e.g. Earith (Hayward 2006a), Langdale (Hayward 2006b), Whittlesey Brick Pit (Hayward 2005) and Cambourne (Hayward 2006c).

7.31.4 Unlike the larger more palatial villa residences in Eastern England such as Stanwick (Coombe et. al. in prep.), none of the freestone identified in the assemblage had been intricately carved. Instead, the stone has been shaped into basic functional elements limited at best to ashlar, rough

dressed cornice and a stone trough in Barnack stone.

7.32 Animal bone

7.32.1 By Karen Deighton

7.33 Introduction

7.33.1 Approximately 750 bone fragments were collected by hand from a range of features in 5 phases as follows: phase 4 unphased Roman, phase 4.2 C3rd AD, phase 4.3 late C3rd early to C4th, phase 7 Post Medieval and phase 8 modern.

7.34 Methodology

7.34.1 The material was firstly sorted into recordable and non-recordable fragments and bones with fresh breaks were reassembled. Identification was aided by Schmid (1972); Lawrence and Brown (1974) were consulted for small mammals and Cohen and Serjeantson (1996) for birds. Sheep/goat distinction follows Boesneck (1969).

7.34.2 The following were recorded for each element: context, anatomical element, taxa, proximal fusion, distal fusion, side, burning, butchery, pathology and erosion. Ribs and Vertebra were recorded as horse, pig, dog, sheep size or cattle size but not included in quantification as their multiple numbers introduce bias. Recording of fusion follows Silver (1969). Cattle and pig teeth were aged after Grant (1982) and sheep teeth after Payne (1973). Recognition and recording of butchery is after Binford (1981). Recording of sexing data for pig canines follows von den Driesch (1976) and for dog skulls is after The and Troth(1976). Pathology is described after Baker and Bothwell (1980). Measurements were taken after von den Driesch (1976). The material was recorded onto an access database

7.35 The assemblage

7.35.1 *Preservation*

7.35.2 Fragmentation was high with only 6.3 % of long bones complete and 50%

of the bone at the shaft or fragment stage. Only sixty instances of butchery were observed, this was mostly chop marks. Thirty-four examples of canid gnawing were noted, which could suggest that bone was not lying exposed to scavengers for any length of time. Conversely the paucity of evidence for both canid gnawing and butchery could be due to the high level of bone surface abrasion encountered. Only 0.5% of bone was burned and was seen in 3 contexts only. All burnt fragments were of indeterminate taxa. This low occurrence of evidence for burning could indicate that it was not a preferred method of disposal.

7.35.3 Taxonomic Distribution

Phase	0	4	4.2	4.3	6	8	Total
Cattle	2	141	51	176	12	6	318
Cattle size		33	13	40	2	1	74
Sheep			1				1
Goat				2			2
Sheep/goat	1	36	12	50	8	1	93
Sheep size		5	3	3	2		12
Pig		1	9	13	3		26
Horse		7	7	26	3	1	44
Dog		14		4			18
Cat	1						1
Deer sp (cf red deer)		1		2		1	4
Rat sp			1				1
Small Mammal				2			2
Chicken		1		1	1		3
Chicken size		1		1			2
Goose		1		1			2
Goose size			1				1
Crane				1			1
Frog/toad				3			3
Indet bird		1					1
Total	4	239	98	325	31	10	710

Table 10: Animal bone taxa present by period

7.35.4 *Phase 4 (undated Roman)*

7.35.5 In phase 4 animal bone was recovered from demolition layers in building 1 and made ground associated with Building 2 both in the central area of the excavation, along with material from ditches 23, 28-32 34 and 35 and a number of pits. The assemblage was dominated by cattle and cattle size fragments with fewer numbers of ovicaprids. The number of dog remains appears surprising high. However these were largely from a single pit [614] fill [615] and appear to represent a minimum of 2 dogs. Two examples of worked bone including a cattle horncore fragment were noted from separate contexts unfortunately this evidence is too slight to speculate on any bone working activities in this phase. On the whole the assemblage seems to represent domestic rubbish.

7.35.6 *Phase 4.2 (200-300AD)*

7.35.7 For phase 4.2 bone was collected from ditches 3, 4, 11-14 and 16 and a number of pits. Again cattle and cattle size fragments were the most abundant followed by smaller numbers of ovicaprids and pig. The presence of rat here could be intrusive or possibly represent a commensal rodent.

7.35.8 *Phase 4.3 (250—350AD)*

7.35.9 For phase 4.3 bone was retrieved from ditches 18-22, a number of pits and fills of well [678]. This was the largest assemblage from the site and was dominated by cattle and cattle sized followed by sheep/goat and surprisingly high proportions of horse (8%). Where used for riding around 2-5 % of horse bones is more usual as seen at other sites in South East England for example at Braintree (Smoothy1993) or Coggeshall (Bedwin 1988). This phase produced the only goat remains (two horncores) from the site. A male dog skull and femur were observed from contexts of ditch group 18; these are possibly the remains of carcass disposal. A single crane tibia was noted in a fill of well [546], as cranes were eaten during the Roman (Cool 2006) period this could be domestic waste.

7.35.10 Three examples of worked bone and one of worked antler (cf. red deer) were recovered from a single context in pit [602]. The fact that a small concentration was seen in a single feature could suggest that bone working was taking place nearby, however this statement is tentative due to the small amount of evidence

7.35.11 A pathology was of particular interest in this phase from [546] in ditch 18. Eighteen fused cattle vertebrae were noted with ankylosing spondylitis (aka bamboo spine). In this condition bone grows around vertebrae encasing them but leaving the discs untouched. The condition is possibly related to traction.

7.35.12 Once again, on the whole, the assemblage appears to represent domestic waste.

7.35.13 *Periods 6 (medieval) and 8 (modern)*

7.35.14 The assemblages from Phases 6 and 8 consisted of small numbers of common domesticates with the exception of a fragment of antler (possibly red deer) from Phase 6. Due to the paucity of material both assemblages contribute little to the understanding of the site other than to suggest the range of taxa associated with activities taking place during these phases.

7.36 Conclusion

7.36.1 Analysis has shown a reasonably sized assemblage of taxa usual to the periods covered, with some potential for further study (detailed in Section 9.7).

7.37 Lithics

7.37.1 By Barry Bishop

7.37.2 Archaeological excavations at the above site resulted in the recovery of a large assemblage of struck flint and a small quantity of unworked burnt flint fragments. All of the pieces have been individually catalogued and described, this including details of raw materials, condition and, where

possibly a suggested date range (Table 11). This text summarizes the data presented in the catalogue; its aims are to quantify and describe the material, assess its significance in terms of its potential to contribute to the stated research aims and objectives, and to identify any further work needed in order that the material can achieve its full research potential. An assemblage of 42 pieces of struck flint that were recovered from an earlier archaeological evaluation at the site has been reported on separately (Bishop 2014). All metrical descriptions follow the methodology established by Saville (1980).

7.37.3 Quantification

Type	Decorification flake	Decorification blade	Chip (<15mm)	Flake	Prismatic blade	Non-prismatic blade	Blade-like flake	Flake fragment (<15mm)	Flake fragment (>15mm)	Retouched	Core	Conchoidal chunk	Shattered cobble	Unworked burnt stone (no.)	Unworked burnt stone (wt:g)
No.	71	4	46	139	29	18	13	19	25	17	20	19	6	60	522
% struck	16.9	1.0	11.0	33.1	6.9	4.3	3.1	4.5	6.0	4.0	4.8	4.4	1.4		

Table 11: Quantification of the lithic material

7.37.4 A total of 420 struck flints were recorded, these having been recovered from 85 separate contexts representing 75 different features or deposits scattered across the site, mostly as single pieces or in small quantities (Table 11). Just over 0.5kg of unworked burnt flint was recovered from 25 separate features, again, mostly in small quantities with the largest amount comprising only 115g which came from layer [5031].

7.38 Unworked Burnt Flint

7.38.1 The unworked burnt flint was heated to variable degrees but all to the extent that it had shattered, changed colour and become 'fire-crazed', consistent with having been in a hearth. Its wide distribution in low densities across a range of context types suggests that it probably

represents residual or incidentally incorporated material, perhaps from a general background scatter. Although indicative of hearth use, the date of the burning cannot be established and the relatively low densities of burnt flint recorded here could represent occupation during any period at or near the site.

7.39 Struck Flint

7.39.1 The assemblage contains a wide range of flakes, cores and types of retouched implements representing all stages in the reduction sequence, including discarded cores and decortication flakes representing the initial stages of reduction, to used and worn-out tools. Retouched implements and core are both well represented and it is evident that flint raw materials were being procured and converted into tools that were being used and discarded at the site.

7.39.2 Raw Materials

7.39.3 The raw materials consist of a fine-grained and good knapping quality 'glassy' translucent flint that is predominantly black or dark brown in colour although some lighter mottled pieces are also present. Cortex, which was present on a little under half of the pieces, varies from being rough but weathered to smooth and worn, and both recorticated and unrecorticated pre-flaking thermal (frost) fracture surfaces are also common. Flint is not present in the local chalk and the condition of the raw materials suggests that they were gathered from derived sources, most probably remnants of glacial till or the gravel terrace deposits that are present in the vicinity.

7.39.4 Condition

7.39.5 The condition of the assemblage is variable but mostly poor; over 90% of the pieces show some post-depositional damage and with nearly half of these is quite marked. Just over 2% of the struck pieces show clear evidence of burning. Even within the larger feature-assemblages, such as those from pits [236], [273], [288] or [714], the condition of the pieces and the mix of raw materials and technological traits suggest considerable

mixing. This supports the site's phasing and indicates that all or most of the features probably post-date their contained lithics and the material can therefore be regarded as residual deposited.

7.39.6 Around 15% of the assemblage is, or more commonly has started to, recorticate. Whilst generally these pieces tend to belong to earlier periods of flintworking at the site (see below), the differences are not clear-cut and the presence or absence of recortication cannot be confidently used as a means of establishing chronology.

7.39.7 *Technology*

7.39.8 As a whole, the struck flint exhibits a variety of technological approaches used in its reduction. The assemblage is dominated by unretouched flakes and blades or retouched items that individually could not be closely dated on strict typological grounds alone. Nevertheless, considerations of both the technological and typological aspects of the assemblage indicate that that it had been manufactured over a sustained period, from at least the Mesolithic and through to the latter parts of the Bronze Age.

7.39.9 *Mesolithic / Early Neolithic*

7.39.10 The earliest evidence for flintworking at the site comprises a number of blades, blade-like flakes and blade cores that can be dated to the Mesolithic or Early Neolithic periods. There are also a number of flakes that are thin and had been competently struck from well-maintained cores that, although must be assigned a slightly broader date range, would comfortably fit within the same industries as the blades. Blades contribute over 12% of the overall assemblage, of which over half are prismatic, and blade-like flakes a further 3%. Many other fragmented but potential blades were also identified (Table 11).

7.39.11 Retouched implements likely to belong to these periods include a burin that was made on a crested blade from pit [288]. Burins are mostly common found in Upper Palaeolithic and Mesolithic assemblages and the

use of a crested blade as a blank suggests the possibility of a late Glacial or early Post Glacial date for this piece. Other indications of potentially early flint use include a very abraded and deeply recorticated blade fragment that came from ditch [332]. A broader Mesolithic or Early Neolithic date can be assigned to a burnt fragment of a long-end scraper from pit [580], a piercer made on a prismatic blade from pit [435], a finely denticulated narrow flake from pit [236], a bifacially worked unfinished arrowhead or ovate knife from pit [677] and a cortical backed cutting tool made on a narrow flake from pit [714].

7.39.12 On strict typological or metrical grounds it is difficult to separate the industries spanning the Mesolithic – Neolithic transition. Whilst the burin and perhaps some of the very skilfully produced prismatic blades, many of which have recorticated, are most likely to be Mesolithic, the recovery of a leaf-shaped arrowhead during the evaluation also demonstrates that the latter period is certainly represented at the site. Additionally, many of the blades are technologically most comparable to those from Early Neolithic industries from the area (e.g. Bishop 2007; Billington 2013).

7.39.13 Many of the cores recovered from the site are likely to date to these periods. These include six blade cores, five of which, from pit [319], ditch [700], layers [5030] and [5041] and an unstratified example, have two platforms, the other, from layer [5042], has a single platform. There are also three cores, from pits [288], [615] and [760], which had been abandoned at early stages, probably due to flaws within the flint. Additionally, three of the conchoidally fractured chunks appear to represent disintegrated blade cores. These are from pit [416], ditch [726] and demolition layer [2001]; the latter has ‘retouch’ suggesting that it had been re-used as a thick, blunt pointed implement.

7.39.14 *Later Neolithic / Early Bronze Age*

7.39.15 Present within the assemblage are a number of flakes that although not systematically produced were skilfully detached; these often being thin and with narrow and carefully edge-trimmed or faceted striking platforms.

Although not easily defined or closely dateable, they are most characteristic of Later Neolithic or Early Bronze Age flintwork. No truly diagnostic pieces of either of these periods was identified although the presence of a Levallois-like core from layer [5030] would, if correctly identified, indicate that the former period is represented. Other cores that are most reminiscent of those from these periods include a narrow flake core from layer [5031] and a multi-platformed flake core from pit [677]. There are no retouched implements that can with confidence be placed in these periods although a few of the scrapers, such as those from tree-throw hollow [514] and the example from unstratified deposits in Area 1 do show a high quality of retouching and production that is mostly seen in Later Neolithic industries.

7.39.16 *Later Prehistoric*

7.39.17 A large part of the assemblage, perhaps even the majority of pieces, can be broadly dated to the later prehistoric period, particularly the latter parts of the Bronze Age and potentially even the Iron Age. This material is the product of a much simpler flake-based industry and derives from a successful if very unstructured approach to obtaining suitable working edges on both flakes and cores. The assemblage is dominated by variably sized but short and usually thick flakes whose frequent hinged distal terminations or crushed platforms indicate a casual approach to their detachment. They mostly have deep, markedly obtuse, striking platforms consisting of cortical or simple flaked surfaces and are comparable to Martingell's 'squat' flakes (1990; 2003). A high proportion of the flakes have cortex covering over half of the dorsal surfaces and nearly all retain some cortex, indicative of both the small size of the raw materials and short knapping sequences.

7.39.18 There are no truly diagnostic implements that characterize these periods as during this time tools tend to be rather informally produced and limited to scraping-type implements and chopping, denticulated or notched tools. Such pieces include a small end scraper made on a 'squat' flake from

ditch [439], a denticulated side scraper from ditch [446], a coarsely denticulated flake from pit [682] and a coarsely notched flake from layer [5030]. Possibly also of a later prehistoric date are two implements that re-use much earlier recorticated blanks. These comprise a shallowly retouched cutting implement from pit [416] and an end scraper from tree-throw [523]. It should also be noted that in many later prehistoric assemblages there are high numbers of flakes that have light retouch or show evidence for use-wear that indicates many tools were used in a largely unmodified state. It is likely that many of the flakes recorded here had been similarly used but, due to post-depositional attrition, such traces can no longer be confidently identified. The cores that are likely to belong to these periods are mostly minimally worked and largely unshaped or prepared. They include the examples from pits [288] and [576], ditch [702] and layer [5031]. Other likely later prehistoric cores may also have been used as core-tools. These include a minimally worked core from pit [260] and a bifacially worked core from pit [602] that appears to have been used as chopping tools, a flake core that had been steeply 'retouched' from ditch [726] and possibly a simple flake core made on an elongated cobble from pit [273]. This may have been used as a pick-like implement, although it shows considerable post-depositional damage that obscures any possible use-wear.

7.40 Significance

7.40.1 The assemblage can be regarded as large, considering the size of the area investigated, and confirms the findings from the evaluation and the adjacent excavations to the north of the site that indicate fairly intensive activity in the vicinity throughout much of the prehistoric period (Bishop 2014; Peachey 2014). For all periods, this appears to include the preparation and reduction of cores and the production of a wide range of tools that are most suggestive of broad based settlement activities. It is consistent with the findings from other excavations in this area that have revealed extensive prehistoric occupation along the periphery of what was then a developing Fenland landscape.

7.40.2 The assemblage's main significance is that it is capable of illuminating prehistoric occupation at the site which is otherwise not represented in the structural record, and offer some insights into the nature and range of the activities conducted there. Unfortunately, the residual nature of the assemblage and the paucity of diagnostic implements means that its interpretation is somewhat limited.

7.41 Environmental Samples

7.41.1 By Lisa Gray MSc MA ACIfA

7.42 Introduction

7.42.1 Twenty-nine samples were presented for assessment. These samples were taken during an excavation that revealed Roman settlement and a possible villa and farmstead (PCA 2014, 4).

7.42.2 The aims of this assessment are to determine the significance and potential of the plant macro-remains in the samples, consider their use in providing information about diet, craft, medicine, crop-husbandry, feature function and environment.

7.42.3 This assessment follows an archaeobotanical evaluation carried out by Val Fryer (Fryer 2014) where she recommended that further sampling took place.

7.43 Methodology

7.43.1 Samples were taken and processed by Pre-Construct Archaeology. All samples were completely processed using a Siraf-type flotation device. Flot was collected in a 300 micron mesh sieve then dried.

7.43.2 Once with the author the flots were scanned under a low powered stereomicroscope with a magnification range of 10 to 40x. The whole flots were examined. The abundance, diversity and state of preservation of eco- and artefacts in each sample were recorded. A magnet was passed across each flot to record the presence or absence of magnetised material or hammerscale.

7.43.3 Identifications were made using uncharred reference material (author's own and the Northern European Seed Reference Collection at the Institute of Archaeology, University College London) and reference manuals (such as Beijerinck 1947; Cappers et al. 2006; Charles 1984; Fuller 2007; Hillman 1976; Jacomet 2006). Nomenclature for plants is taken from Stace (Stace 2010). Latin names are given once and the common names used thereafter. Low numbers of non-charcoal charred plant macro-remains were counted. Uncharred plant remains, fauna and magnetic fragments were given estimated levels of abundance unless, in the case of seeds, numbers are very low in which case they were counted.

7.43.4 At this stage numbers given are estimates but where only one item is present that has been noted. Identifiable charred wood >4mm in diameter has been described as that. Charred wood <4mm diameter are described as 'flecks'. Samples this size are easier to break to reveal the cross-sections and diagnostic features necessary for identification and are less likely to be blown or unintentionally moved around the site (Asouti 2006, ¶ 31; Smart and Hoffman, 1988, 178-179). Fragments smaller than this and larger than 2mmØ were scanned in case any fragments of twig or roundwood survived.

7.44 Results

7.44.1 The Plant Remains

7.44.2 The results are tabulated in tables Table 14 Table 15 Table 16 in Appendix 1.

7.44.3 Charred plant remains were the most frequent taxa type in these samples. The most frequently occurring charred plant remains were charred cereal grains and charred wood fragments.

7.44.4 Twenty-five samples contained charred grain. The most abundant grain assemblages were found in samples from the Roman Period: <9> (ditch 251), <12> (pit 245), <16> (ditch/beam slot 332), <29> (pit-charcoal layer

682) and undated samples <18> (well-basal fill 313), <32> (charcoal layer 602) and <2000> [2023]. Moderate quantities were found in Roman samples <10> (ditch 238), <15> (pit 313), Medieval sample (Quarry 273) and undated samples <24> (posthole 523) and <26> (layer-south of sewer 560).

7.44.5 The grains in these samples were mostly well-preserved and included free-threshing (*Triticum aestivum/durum/turgidum*) wheat and glume wheat (*T.spelta*). Grains of barley (*Hordeum vulgare*), rye (*Secale cereale*) and oat (*Avena sp.*) were also present.

7.44.6 Seventeen samples contained identifiable charred wood fragments. The most abundant charred wood fragments were found in sample <29> (Roman pit-charcoal layer 682). Moderate quantities were found in sample <12> (Roman pit 245) and <27> (Undated posthole 570).

7.44.7 Six samples contained charred seeds in association with grain assemblages. These were Roman samples <9> (ditch 251), <10> (ditch 238), <15> (pit 313), <16> (ditch/beam slot 332), <29> (pit=charcoal layer) and undated samples <32> (charcoal layer 602) and <3> (pit-basal fill). The seeds observed at this stage were those of grasses and legumes.

7.44.8 Chaff was found in two samples. A grain sprout was found in sample <12> (Roman pit 245). Abundant spelt (*T.spelta*) glume fragments were found in sample <32> (undated charcoal layer 602).

7.44.9 Fragments of charred hazelnut (*Corylus avellana*) shell were found in sample <36> (layer-dump in building 5041).

7.44.10 Uncharred seeds were scarce and only present in one samples, sample <28> (ditch 591). This as one elderberry (*Sambucus nigra*) seed.

7.44.11 Uncharred root/rhizome fragments were moderate or abundant in twenty-seven of the samples. Only samples <10> (ditch 251) and <23> (Undated posthole-basal fill 526) contained no root/rhizomes.

7.44.12 *Fauna (see tables 1 to 3 in Appendix)*

7.44.13 This is not a zooarchaeological report so only general comments on overall taxa type will be made here.

7.44.14 Terrestrial mollusca were present in twenty-seven samples. Twenty-five contained the subterranean snail *Ceciliodes acicula* (Müller). This snail burrows well below the ground surface (Kerney & Cameron 1979, 149) and can play a role in bioturbation. Low numbers of freshwater mollusca were seen in sample <9> (Roman ditch 251) and <29> (Roman pit-charcoal layer 682). A fragment of oyster (*Ostrea edulis*) shell was seen in sample <36> (Undated layer-dump in building 5042). Low numbers of earthworm cocoons were seen in sample <12> (Roman pit 245) and <26> (Undated layer –south of sewer 560).

7.44.15 *Inorganic (see tables 1 to 3 in Appendix)*

7.44.16 Magnetic fragments were present in very low numbers in undated samples <23> (posthole –basal fill 526) and (layer- dump in building 5041). None were clearly hammer-scale. Fragments of coke/coal were found in undated samples <23> (posthole-basal fill 526), <24> (posthole 523), <36> (layer-dump in building 5041) and <2000> [2023]. Fragments of possible jet were found in undated sample <24> (posthole 523) and <32> (charcoal layer 602). A potsherd was found in undated sample <37> (layer/hearth? – dump in building 5042).

7.45 Discussion

7.45.1 *Biases in Recovery, Residuality, Contamination*

7.45.2 Nothing with regards biases in recovery, residuality or contamination was highlighted for any of these samples at the time of writing but evidence for possible bioturbation and intrusiveness was present in the form of fragments of uncharred root/rhizome and terrestrial snails that were moderate to abundant in most samples.

7.45.3 However, many of these samples contained large, well-preserved charred

assemblages that are likely to be linked to the use of the feature due to their good preservation and quantity.

7.45.4 *Quality and type of preservation.*

7.45.5 Most of the plant remains in these samples were preserved by charring. Charring of plant macrofossils occurs when plant material is heated under ‘...reducing conditions...’ where oxygen is largely excluded (Boardman and Jones 1990, 2) leaving a carbon skeleton resistant to biological and chemical decay (English Heritage 2011, 17). These conditions can occur in a charcoal clamp, the centre of a bonfire or pit or in an oven or when a building burns down with the roof excluding the oxygen from the fire (Reynolds, 1979, 57).

7.45.6 Charred plant remains are very resilient and survive changing preservation conditions and being moved around in the soil but in the case of these samples the abundance of charred plant remains per litre of sampled soil does suggest that the samples context were stratigraphically secure and have potential to provide useful information.

7.46 Small finds and metalwork

By Ruth Beveridge

7.47 Introduction

7.47.1 The assemblage recovered from the excavation, ECB4674, is made up of two hundred and ninety-five objects of metalwork, glass, bone/antler and stone materials. They are listed by material and date in Table 12. Of this total, one hundred and ninety-three are nails. The objects were collected from seventy contexts. Most of the material was recovered from Roman contexts, predominantly from the fills of pits and ditches and from demolition layers; nineteen items were unstratified. Three contexts produced collections of more than five objects. The largest group of finds was from the fill of pit 682 with seventy-one objects being retrieved; these are all nails, including forty-six hobnails. Forty-six objects were recovered from demolition layer 5001, twenty-five of which are nails. Thirty-four

objects were retrieved from the fills of pit 602, this was a more varied collection of items including only fourteen nails.

Material:	Copper alloy	Iron	Lead	Glass	Bone	Antler	Stone	Slag
Period:								
Roman	24	198	2	27	3	2	1	
Medieval	1							
Post Medieval	1	2						
Modern	1							
Uncertain Date	1	22	6					4
Totals:	28	222	8	27	3	2	1	4

Table 12: Small find quantities by material and date

7.47.2 The finds have been recorded below and a full listing is provided in the catalogue. They have been examined with the aid of low magnification, but without the assistance of radiographs.

7.48 Condition

7.48.1 Overall the metalwork is in poor condition with corrosion masking detail on many of the iron objects and the copper alloy coins. The surface of the glass is iridescent and flaking; indicative of being unstable.

7.48.2 Roman

7.48.3 Glass

7.48.4 Twenty six pieces of Roman glass and one bead were recovered from the excavation; much of it was in poor condition. Several are detailed below. The largest number of glass fragments, sixteen, were retrieved from demolition layer 5001 for Building 2. These include fragments of window glass, a tubular rimmed vessel and pieces of a delicate, ribbed vessel. Overall, the glass is lightly tinted and full of bubbles, characteristic of mid-fourth century glass (Cool and Price 1995, 218). Also of note were three fragments of clear glass retrieved from demolition layer 2001; these are thin walled and possibly from a drinking beaker.

7.48.5 SF 57, fill 603 of pit 602: Translucent, cobalt blue bead of Guido's square

sectioned type 5 (Guido 1978, 95). It tapers in length slightly and the diameter of the lengthwise perforation varies from 1 - 2 mm. Evidence of wear around the perforation ends.

7.48.6 The square sectioned bead occurs frequently throughout England, with Guido dating this type to the 3rd century or later. At Vindolanda this bead type was the second most common type found, frequently recovered from civilian or bath house contexts (Birley and Greene 2006, 21). It is believed that this small bead would have been utilised as a spacer as part of larger pieces of jewellery, (ibid, 21).

7.48.7 SF 21, fill 417 of pit 416: Fragment of the base of a bottle. The glass is a clear, lightly tinted green colour; it is thin walled. Within the glass are many bubbles. The surfaces are degrading/laminating. It has a circular centre and dimple. The underside of the base is concave. Possibly the base of a cylindrical bottle.

7.48.8 Bone/Antler

7.48.9 Five objects of bone/antler were excavated. All but one item, SF 50, were recovered from pit 602. They are summarised below, with the hairpin being of note. SF 50 may point to some domestic level of antler working on the site.

7.48.10 SF 34 from fill 603 of pit 602: Complete pin with faceted cuboid head and tapering shaft that is swollen in the centre. The shaft is circular in section and measures 5mm in diameter at its widest point. The pin has polished surfaces. The lozenges and triangles of the faceting are well formed and almost entire, with only slight irregularities due to the removal of cancellous bone. It falls into Crummy's Type 4 which date to c. 250AD or later.

7.48.11 It is thought that Type 4 pins only occur in low numbers throughout the province due to the complexities in forming the head (Crummy, 1983, 23). The faceted head form also occurs in jet and copper alloy, and it is

possible that the bone examples are cheaper imitations of these. The examples in jet and copper also occur in contexts post 250 AD, indicative of an overall later 3rd to 4th century date for this form.

7.48.12 SF 38 from fill 603 of pit 602: Elongate strip of bone, rectangular in plan. The longitudinal edges have oblique grooves across them; one of the shorter ends is stepped, the other is mitred. It is comparable to a piece of inlay found in Colchester, Crummy, 1983, 83, no 2153. Strips of bone were primarily used as casings for wooden boxes (Wilson, 1968, pls 61-2) or as decorative inlay on furniture (Nicholls, 1979).

7.48.13 SF 50 from demolition layer 2020: Tapered end section of an antler tine. At its widest diameter there are multiple saw cuts that only extend half way through the tine.

7.48.14 SF 51 from fill 603 of pit 602: Possible fragment of a curved bone handle. In plan it is rectangular, in profile it is curved. Towards one end are three horizontal grooves. It may have formed the handle to a knife similar to an example from Caistor (Darling and Gurney 1993, 111, fig. 88, no. 558).

7.48.15 SF 52 from fill 603 of pit 602: A length of an antler beam, ovoid in section. One end is sawn with the saw marks still clearly visible. The opposite end is stepped with uneven knife marks. One longitudinal section of the outer surface has been removed by shallow knife cuts. Whilst this piece is smaller and there is no clear evidence for a socket, it is similar in form to the antler knife handles found at Caistor, (ibid, 112, 564).

7.48.16 Copper alloy

7.48.17 Coins

7.48.18 A total of eighteen coins were recovered from the excavation, five are unstratified; the remainder are from the fills of pits, a well or from demolition layers. Of the eighteen, eight are too corroded or worn to be able to identify with certainty. SF41, 42, 43 and 48 were all recovered from demolition layer 5001 and are possibly *nummi*. Similarly with SF 49,

a possible coin retrieved from fill 752 of well 678. A further two discoidal objects that are possible *nummi* are SF 54 from fill 660 of pit 662 and a coin that was recovered embedded in mortar, this from demolition layer 2030. SF 53, a coin retrieved from fill 181 of medieval phased pit 182, is currently unidentifiable but may be a *nummi* that is residual in that context.

7.48.19 Of the eighteen coins four have been identified as radiates falling within Reece period 13. It is likely that all are barbarous radiates. Five have been identified as *nummi* that are also likely to be contemporary copies. Where it was possible to assign Reece periods they have been noted, with one *nummus* from Reece period 16, two from period 17 and one from period 19. Whilst this is a small collection of coins the two main periods of coin loss in Roman Britain are represented, the late third century and the mid-fourth century. It is of interest to note a coin of Valentinian within the assemblage; this is of a much later fourth century date and could be useful in understanding the duration of Roman occupation on the site.

7.48.20 SF 4: unstratified. Barbarous radiate of Carausius (AD286-93), AE 2 in size. Reece Period 13. Obv: radiate head right, Legend [] RAVS []. Rev: possibly figure of Pax. Only letter visible is A. Pax being the most common reverse for this issue of Carausius. Surfaces worn and encrusted. Date: AD275 - 285.

7.48.21 SF 1:, unstratified. Radiate, possibly of Tetricus II, size AE 3. Barbarous radiate, Reece Period 13. Encrusted so some detail masked. Obv: radiate bust facing right. Legend: CPIV [].Rev: standing figure, possibly Spes Publica. Date: AD275 - 285.

7.48.22 SF 12: unstratified. Pierced *nummus* of AE 1 size, weighing 5g. Both faces are very worn. It has a circular perforation close to the flan edge. Possibly mid-fourth century AD. This coin is of interest as pierced Roman coins are commonly found in post-Roman/Anglo-Saxon burial contexts.

7.48.23 SF 19: unstratified. Possible barbarous radiate of Carausius, with figure of Laetitia on reverse. Faces worn and corroded. Size AE 2, Reece Period

13. Date: AD275 - 285.

- 7.48.24 SF 23: from cut 5031. Nummus of House of Valentinian. AE 3 size. Reece Period 19. Worn and corroded with detail masked by dirt. Obv: jewelled bust right. Rev: Victory walking left with wreath. Legend is possibly Securitas Rei Publicae. Date: AD364 - 78.
- 7.48.25 SF 24: from cut 5031. Nummus of AE 3 size. Possibly House of Constantine. Faces worn and corroded.
- 7.48.26 SF 29: fill 603 of pit 602. Radiate of Tetricus II (AD 271 - 4), size AE 2. Reece Period 13. Oval in plan with some of the flan edges missing. Obv: radiate bust right, young and clean shaven. Legend: CPIVESV[TETRI]CVS CAES. Rev: worn with little detail visible, Barbarous radiate type. Date: AD275 - 285.
- 7.48.27 SF 30: unstratified. Nummus, size AE 4, weighing less than 1g. Obv: detail masked by dirt. Possibly Constans. Rev: Two victories facing one another, each with a wreath. Legend: VIC [TORIAEDD AVGG] QNN Mint mark D//TRP. Trier. Reece Period 17. Date: AD 347 - 8.
- 7.48.28 SF 33: fill 603 of pit 603. Nummus of Constantine II as Caesar, good condition, size AE 3, Reece Period 17. Obv. Laureate bust right, cuirassed. Legend: CONSTANTINVS IVN NOBC. Rev: two soldiers and two standards with additional branch between standards. Legend: GLOR[IA EXE]RC[ITVS]. Mint mark PCONS s for Arles. Stamped off flan so probably a contemporary copy. Date: AD 300 - 35.
- 7.48.29 SF 47: demolition layer 500I. Nummus, size AE 3. Reece Period 16. Obv: bust facing right. Rev: Altar with globe on top. Poor condition, corroded and worn faces and damaged flan. Date: AD 318 - 324.
- 7.48.30 Other objects
- 7.48.31 SF 14, unstratified: Hemispherical shaped bell with a pair of incised lines round the circumference; these are inlaid with a white, possibly silver,

metal. There is a raised central boss. The clapper is missing, this would originally have passed through the boss to create the suspension loop. An example of this type of bell was recovered in Colchester, Crummy, 1983, 127, no.4166 that dates from the mid- 2nd century AD. It is thought that these small bells were likely attached to the collars of animals, however some have also been used for personal adornment and attached to armlets such as a further example from Colchester, (ibid, fig. 54, no. 1811).

7.48.32 SF 20: fill 417 of pit 416. Three pieces of a sheet metal mount, possibly square originally. The largest piece is sub-rectangular in plan, the outer long edge is folded over. Along the length of this edge is a border of repousse/raised dots. There is further moulded decoration within the border. This is obscured by corrosion and dirt. They are probably fragments of a mount or a buckle plate such as an example from Richborough of 4th century date, Cunliffe, 1968, plate 35, no. 107.

7.48.33 SF 36: fill 602 of pit 603, is a fragment of sheet copper alloy, sub oval in plan. Corrosion and dirt obscures detail, however, on one surface are two raised dots and a possible fixing. As with SF 20, this too may be part of a decorative mount.

7.48.34 SF 40: fill 691 of pit 692. Trapezoidal shaped mount or buckle frame. The frame has bevelled outer and inner edges. In one corner the metal expands into a curved strip. Two strips of curving metal, thin rectangle in section also survive but do not directly join. This object is possibly part of Roman military regalia, however, comparisons with similar material would be required to confirm this.

7.48.35 SF55: group context 5000, is a spherical shaped object, possibly copper alloy. It appears to have a woven texture to the outer surface.

7.48.36 SF 56: fill 5043 of post hole 5044 is a small fragment of a brooch. In plan, sub rectangular, in profile it is L shaped as it appears to be the corner of the item. On the outer surface is the remains of a clasp for a pin.

7.48.37 Iron

7.48.38 Twenty-nine iron objects, or fragments of, were recovered from the excavation. Many of the objects were obscured by corrosion products and the entire assemblage will benefit from undergoing x-radiography in order to facilitate identification. Where provisional identifications were possible without x-rays, the objects have been discussed below; seven have been classified in the catalogue as unidentified. All but four of the iron objects are from contexts of Roman date.

7.48.39 Over half of the iron objects have been identified as fittings, usually strips of iron with attachment holes. The function of these fittings could be as fixings for furniture or of a more structural nature. Five iron fittings were retrieved from pit 602 which has been dated to c. 250 - 350AD, including SF39. SF 39 is an elongate strip fitting, rectangular in plan, rectangular in section. At one end is an in situ nail with a flat, round head and square sectioned shank. It is comparable to the iron box fittings in Crummy, 1983, 86, nos. 2202 and 2205.

7.48.40 In addition to the fittings, an iron ring was recovered. SF 9 is a pennanular shaped ring of uncertain function. D-shaped in section. Rings are common finds on Roman sites and served multiple functions. Manning (1985, plate 65, S18-56) illustrates the diversity in size of those found. He mentions the range of functions they are utilised for includes as harness fittings and tethering rings (ibid, 140).

7.48.41 One iron object, a stylus, reflects an element of literacy on the site. It is comprised of three co-joining fragments of a forged stem that is circular in section. One terminal expands into a triangular shaped eraser; the other tapers to a point. The tip of the stylus may be separated from the stem by a shoulder. It was recovered from the demolition layer 2001 and is of Roman date. It is possibly a Manning Type 1a styli; similar to example N9 from London (Manning 1985, plate 35). It is a common type of stylus but often rendered unrecognisable due to corrosion.

7.48.42 Amongst the iron objects one is a tool, and was found in pit 426. It is an elongate object with tapering shank and wedge-shaped in profile. The head is rectangular in plan; as the object tapers it becomes a narrow rectangle in section. The head shows signs of battering. It is comparable to the Roman small smiths punches in Manning, 1985, plate 5, A23. The length of these small punches would indicate they were unlikely to have been held by hand, more likely held with a wire hoop, (ibid, 10). A similar example of a punch that was possibly a small hot chisel was found at Caistor-on-sea (Mould, 1993, 114, fig. 91, no. 590) also from a late Roman context.

7.48.43 Agricultural practices in the vicinity of the site are reflected in the find of an iron goad from pit 602 of late Roman date. The iron shank is coiled, tapering to a tip at both ends. Examples of similar ox-goads were found at Baldock (Manning and Scott 1986, 152, fig. 66, nos. 514-516).

7.48.44 Nails

7.48.45 Whilst nails are usually difficult to date, having altered little over time, one hundred and thirty-one of those recovered from the excavation are from contexts that allow them to be identified as Roman. Several types of nails have been identified pointing to the array of functions they were utilised for. Eighty-four are Manning Type 1 or 1b. The diameter of the heads suggest the majority of these were used for joined objects of furniture or boxes; only five had diameters above 20mm, more indicative of nails utilised for structural timbers. Seven nails are Manning Type 3, possibly performing a similar function to Type 1; forty are Type 10. The Type 10 hobnails, either with a domed or pyramidal head, were used on the soles of Roman footwear.

7.48.46 The nails were recovered across the site from the fills of pits, ditches and demolition layers. In contrast the majority of the hobnails were recovered from pit 602; possibly reflecting the disposal of a single pair of boots.

7.48.47 Chalk

7.48.48 SF 35, fill 603 of pit 602: Complete loomweight. Sub-square/rounded in plan, rectangular in section. This object has a central, vertical perforation which is circular and measures 28mm in diameter and weighs 669g. Evidence of wear suggests it was hung in one way more than the other. Riddler, 2013, 139, recorded a chalk weight at a Roman sanctuary in Kent. He suggests that these objects were originally used as loomweights on a warp weighted loom. During the Roman period it is uncommon to find loomweights of chalk, more usually they are made from ceramic. The presence of one at Bottisham could be the result of utilising local materials for this purpose.

7.48.49 *Medieval*

7.48.50 Copper alloy

7.48.51 A worn and corroded folded strap end was recovered from fill 246 of pit 245. It is bent in the middle. It is made from a rectangular shaped piece of sheet folded over. It has slightly angled corners at the folded end. There are five rivet holes, one central, one in each corner. Two rivets with domed heads survive in situ close to the folded end. Possibly decorated on both sides. Comparable examples have been found in London that date between late 13th to early 15th century (Egan and Pritchard, 1991, 159, no 749).

7.48.52 *Post medieval/Modern*

7.48.53 Copper alloy

7.48.54 SF 3: unstratified. Cast crotal bell. Spherical in shape with an integral squared suspension loop at its apex. It has a thick medial band that imitates the joining of the two hemispheres. The upper hemisphere has two sound holes either side, the lower has two sound holes joined together by a slot. Undecorated. Within the bell is the original iron pea. Dates c.1550 - 1650.

7.48.55 SF 32: fill 605 of pit 604. Elongate object with pyramidal head and

tapering shaft that is square in section. The shaft curves and is missing its tip. The surface of the shaft is worn, given it a more rounded appearance. It is possibly part of a furniture fitting or drawer handle such as an example from Norwich in Margeson, 1993, 80, fig. 45, no. 486, that was found in a late 17th/early 18th century context.

7.48.56 Iron

7.48.57 As well as Roman ironwork, two objects recovered from demolition layer 2001 are intrusive. One is SF27. It is a U shaped heel from the base of a shoe. It has a groove on the ground surface in which sit two nails. The web of the heel is narrow in width, and has one surviving squared end. The heel is approximately 68mm wide. This type of heel was not in use until after the 19th century. The second object is the heel and neck of a plain, rowel spur with a slight bend of the neck at the break.

7.48.58 Steel

7.48.59 SF 13: unstratified. Machine cut block, rectangular in plan, with striations across each surface.

7.48.60 *Uncertain date*

7.48.61 Lead

7.48.62 Eight pieces of lead waste or sheet were retrieved in total. SF 1 , 5, 6 and 28 are all possibly pieces of lead casting waste. SF 7 is a strip of lead waste, sub-rectangular in plan. Each end of the strip has been folded inwards. The outer surfaces are irregular and encrusted with dirt. It is possibly a piece of folded sheet flashing or guttering, Riddler, 2013, 142.

7.49 Discussion

7.49.1 The small finds assemblage reflects the use of the site during the Roman period with little evidence for medieval or later occupation. The proportion of ironwork is high, mainly in the form of nails, fixtures and fittings. With the exception of the coins, there are few other copper alloy objects, with

objects of personal adornment being under-represented from the site. The accumulation of rubbish debris in demolition layers and pits, particularly pit 602, being the main source of the finds.

8 ORIGINAL AIMS AND OBJECTIVES

8.1 Broad Aims

8.2 The purpose of the archaeological investigations as set out in the Written Scheme of Investigations (Hinman 2016) was as follows:

8.3 To seek to contribute to an understanding of the character, condition, date and extent of any archaeological remains within the proposed development area.

8.4 The excavation aimed to put the results in a local, regional and national context, as appropriate, with reference to the East Anglian regional research agendas:

- Research and Archaeology: A Framework for the Eastern Counties: 1. Resource Assessment (Glazebrook 1997);
- Research and Archaeology: A Framework for the Eastern Counties: 2. Research Agenda and Strategy (Brown and Glazebrook 2000);
- Regional Research Framework for the Eastern Region (Medlycott and Brown 2008);
- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011).

8.5 In particular the excavation had the following aims:

- To characterise and record the archaeological remains on site in order to inform mitigation on the impact of development;
- To examine the nature, date and function of any features on site;
- To retrieve information to reconstruct past landscapes and environment;

- To determine the human impact on the landscape;
- To disseminate the results to the wider archaeological community and other interested parties.

8.6 Site Specific Research Aims

8.7 Site specific aims for the Roman Period are outlined in the brief and are summarised here.

8.8 Building forms and functions will be characterised where possible. This will be achieved through analyses of available building plan, physical remains, as well as finds distributions and comparisons with the known buildings remains excavated to the north and north-east of the site. Comparisons will be made between these local examples and examples from the wider region.

8.9 The pottery forms and fabrics will be assessed in detail to provide information on the proportions of locally made and imported wares and types. The pottery as well as the other artefact assemblages will be directly compared with local and regional Roman finds assemblages to identify areas of specific land use and activities where possible as well as trade links and interactions. Site 'zones' or areas of activity will be determined with the aid of GIS spatial and distribution analyses.

8.10 The evaluation identified well-preserved environmental remains and subsequently, an extensive program of environmental sampling will be undertaken in consultation with specialist advice to enable a model of the Romano-British environmental landscape. Sampling will aim to highlight not only microfossils but also remains associated with craft and industry, domestic and farming activities. Pollen samples will be taken as appropriate from deep and/ or water-logged features. Suitable samples (such as soil micromorphological samples) will also be taken from buried soil deposits in discussion with the appropriate specialist.

8.11 Targeted sampling and/ or sieving for smaller faunal remains such as fish,

bird and small game bones will be implemented for both prehistoric and Roman contexts in an attempt to demonstrate the full range of faunal material in the site assemblage.

9 RESEARCH POTENTIAL

9.1 The Contextual Data

- 9.1.1 The regional research agendas have stated the need to place archaeological sites within a better understanding of the landscape as a whole. As such it will be an objective of the project to set this site within its local and regional context by comparison with other excavated sites, in particular the Tunbridge Lane site to the north (Newman 2016), and study of historic landscape features.
- 9.1.2 The results of the excavations have good potential to address the original research aims. The identification of high status buildings relating to a wealthy farm complex or 'villa rustica' raises some new avenues for investigation and should help to bring greater clarity to the understanding of the Roman remains present at Tunbridge Lane, Bottisham.
- 9.1.3 The archaeological remains present within the Crystal Park site have clear potential to significantly enhance our understanding of previous work in the immediate vicinity of Tunbridge Lane. Archaeological work conducted in advance of the redevelopment of the former doctor's surgery (E/02/00141/FUL) at 29-33 Tunbridge Lane, at the new surgery site (E/99/0824) and at Ancient Meadows (south of Tunbridge Hall, E/00370/04), combined to demonstrate the presence of a Roman rural settlement of moderate to high status, possibly a 'villa' estate in this part of Bottisham. The main buildings associated with this complex were found to lie within the Crystal Park site. Previously, large clunch-built foundations surrounding a deep cavity were excavated at the very limit of excavation at the southern boundary of the Tunbridge Lane site (e.g. HER ECB2915 and MCB 20080) (Newton 2016).
- 9.1.4 The previous excavations in the immediate vicinity of this site revealed a series of buildings and barns, yards and industrial areas contained in ditched enclosures, likely to represent the farmyards and agricultural infield attached to the villa. One tonne of ceramic building materials, along with a wide variety of other finds and environmental evidence, was

recovered from the Tunbridge Lane site. Box flue tile indicates the presence of a hypocaust heating system in one or more buildings somewhere in the area, possibly including a bathhouse. This Roman archaeological evidence was anticipated and proven to continue into the Crystal Park site.

9.1.5 The results indicate that there is a good concordance between the features and finds from the current and past excavations. As with the Tunbridge Lane site and considerable quantity of ceramic building material has been recovered. An initial scan of the material on site and during processing indicated that the double apsidal building (2) at Crystal Park is likely to be the remains of a bath house. The presence of Opus Spicatum with the fabric of the surviving walls of Building 2 is a good indicator of this function (Hayward, K. pers comm.). As with previous work the pottery assemblage appears to be largely utilitarian in nature with local products such as Horningsea Wares predominating. Little evidence of conspicuous consumption or material wealth is evidenced from the finds assemblages which is in direct contrast to the presence of the buildings.

9.2 Romano-British Pottery

9.2.1 All of the pottery has been fully recorded, however, it is recommended to integrate the Horningsea pottery types with the latest available typology (Evans et al. 2017) and update the database and records accordingly. Although a basic comparison in terms of dates and fabrics has been undertaken in this assessment report, there has been little in the way of contextual analysis of the Roman pottery assemblage, which is a key issue and will need to be addressed in the analysis. Key groups/features will need to be identified and discussed in more detail. It is also recommended to include a pottery report in the publication and to illustrate a range of the Horningsea products characteristic of the assemblage.

9.3 Post-Roman Pottery

9.3.1 Although relatively small, the assemblage provides evidence of both the date and nature of activity in the immediate vicinity of site. The high

preponderance of jugs is notable and it would be worth trying to locate a possible source for these through documentary research and map regression. Further work should seek to confirm provisional identifications and attempt to source the small number of unprovenanced sherds. Following this, a short publication text should be produced, accompanied by two to three illustrations.

9.4 Ceramic Building Material

9.4.1 The site has a number of oddities that may reflect local or regional trends in the use of ceramic building materials. All of these deserve further analysis and research for publication. These are:

- The presence of dipped or pigmented red, brown and white tegulae, imbrex and flat tile in large dumps away from the buildings. As far as is known, pigmented roofing elements find no parallel in Roman Britain and this building complex may provide a first for Roman Britain. Further research is necessary.
- Trapezoidal shaped combed cavity walling elements and what appear to be half box flue tiles. No parallel has been found so far in Eastern England.
- Thick plaster coated offset *pilae* stacks may in fact represent stucco moulds, a response perhaps to the difficulty in obtaining high quality dimension stone.

9.4.2 At publication, it is recommended that along with an overview of the forms and distribution of this unique grouping, a ceramic building fabric review should also be undertaken of the assemblage. The use of particular fabrics in certain builds may for example enhance or improve our understanding of the chronological development of the site. Illustrations should also be undertaken, particularly of the box flue tile forms and combing, as well as the offset *pilae* stacks.

9.4.3 It is recommended that after analysis indicative box flue tile samples, as well as examples of indicative and complete tile forms should be retained. Retained material should also include a sample of each tile and brick fabric. The remainder, and bulk, of the material may be discarded (K. Hayward pers comm).

9.5 Mortar

9.5.1 All mortar samples been analysed, catalogued and described, no further analysis is warranted for the purpose of the archive.

9.5.2 At publication, the type 3 wall plaster should be integrated with the remainder of the plaster assemblage (Sudds 2017) to produce one coherent grouping and report of the material. The use of moulded stucco and ceramic building material as a viable alternative to moulded stone in Cambridgeshire and East England should be more fully explored and illustrations made of the elements. Text of the different types of mortar, *opus signinum* and stucco should be integrated into the overall phasing.

9.6 Stone

9.6.1 All stone has been catalogued and described, no further analysis is warranted for the purpose of the archive.

9.6.2 At publication it is recommend that petrological comparison is made between the stone at Bottisham with other Romano-British Rural farmsteads in Cambridgeshire (Hayward 2005; 2006a-c) as a means of more fully understanding stone supply in this part of the Eastern province. Illustration should be made of the stone container, cornice and some of the smaller objects such as Purbeck marble mortar, chalk spindle whorl.

9.7 Animal bone

9.7.1 Although preservation is moderate most of the bone was identifiable to taxa and it was possible to collect some ageing, sexing and metrical data.

9.7.2 Material from the Roman phases (4, 4.2, and 4.3) if combined with previous work (see below) could provide data on herd structure in terms of taxa, ageing and sexing. An insight into dietary preferences could also be gained. It would also be possible to attempt analysis of the spatial distribution of the bone and aid in the understanding of the functions of different areas of the site.

9.7.3 The Roman assemblage is significant at local level as it proves

information on function and economy of villa. At a regional level its significance lies in the fact that it could provide compendia for further work and add to corpus of existing work .

9.7.4 Unfortunately the potential and significance of the assemblages from Phases 6 and 8 are severely limited by their small size.

9.7.5 The amalgamation, if possible, with data from a previous HAT/AS excavation of an adjoining area to the N.E of the site (Cussans and Baxter 2014) and from PCA trial trenching (Reilly 2014) could be undertaken. The following analyses could then be undertaken:

1. Analysis of ageing and sexing data to provide kill-off patterns.
2. Analysis of the spatial distribution of bones to provide information of on-site activity zones.
3. Undertake comparisons with contemporary sites within the region, for example Rayne (Smoothy 1989) Gadebridge Park (Harcourt 1974) and Great Holts Farm (Murphy et al 2000).

9.8 Environmental samples

9.8.1 These samples, particularly the Romano-British ones, have most potential to provide useful information about food and crop-processing. Unfortunately, the uncharred wild plant seeds observed by Fryer (Fryer 2014) as having potential to provide environmental information in her archaeobotanical evaluation were not present in these samples.

9.8.2 The potential of the prehistoric samples is limited because they produced small, poorly preserved charred assemblages containing grains also present in the Romano-British samples. It is possible that these grains are intrusive.

9.8.3 The Romano-British samples, however are very productive. They contain plant remains common in Romano-British samples in the East of England (Parks 2012, 30 & 31). The scarcity of chaff in most of these samples

suggest that they contained cleaned grain ready for storage and consumption. Further analysis of these samples may help in the study of agricultural specialisation and changing patterns of landuse as outlined as research priorities the East Midland Research Framework for the Roman Period (Taylor 2006, 215).

9.8.4 The Medieval samples contain poorly preserved grains of the same type seen in the Roman samples, it is possible that these are residual.

9.8.5 The Undated samples do include several samples that if dated would be interesting to analyse fully, in particular, sample <32> (charcoal layer) with its large cereal assemblage that contains moderate quantities of spelt wheat chaff.

9.9 Lithics

9.9.1 The struck flint has been compressively catalogued and, as it is chronologically mixed, no further metrical or technological analyses are warranted for the purposes of the archive.

9.9.2 The assemblage does have the ability to contribute to a more comprehensive understanding of prehistoric settlement and landscape exploitation along this part of the Fenland margins and could add to any future syntheses of the prehistory of this area. It is therefore recommended that a short account of the assemblage, which can largely be based on this report, and preferably alongside a small number of illustrated pieces, should be included within any published accounts of the excavations.

9.10 The small finds and metalwork

9.10.1 Overall the small finds assemblage has the potential to add further to the interpretation of the nature of activity on the site during the later Roman phases. The metalwork has the potential for understanding domestic activities, including construction, possible domestic scale lead casting, iron smithing and agricultural activities. Further study of the coins, post-cleaning, can add to our understanding of the coin loss on the site and the

length of occupation.

- 9.10.2 The non-metal finds show a potential for exploring the status of the site. The fine quality glass, SF 34 the bone pin with faceted head and the iron stylus indicate occupants involved with markets that may extend beyond their own region.
- 9.10.3 The assemblage reflects the Roman occupation on the site, primarily from the mid- 3rd to 4th century AD. The largest number of objects are of iron, many of which are unstable and as yet unidentifiable. With this in mind and considering the future of the archival storage of the assemblage, the following recommendations are made:
- 9.10.4 All of the iron objects should be x-rayed. This will facilitate accurate description and identification of the objects; assistance in the illustration of some specified artefacts as well as preserving a record of each item for the archive.
- 9.10.5 The following items should be cleaned and stabilised by a professional conservator to assist with identification and long-term preservation: eighteen Roman coins, all of the glass and the iron stylus from demolition layer 2001.
- 9.10.6 A report on the small finds should form part of any future publications; it should consider the finds spatially and temporally on the site as well as relating the assemblage to others from similar sites regionally and nationally.
- 9.10.7 The following objects should be illustrated or photographed to preserve a record for the archive and as illustration for future publication: SF 14 bell, SF 40 mount, all of the bone and antler objects including the pin; the chalk loomweight and the iron stylus. It is possible the ribbed glass bowl will also merit illustration. The number of iron objects requiring illustration may increase or decrease once X-ray has enabled a more detailed study of the severely corroded items.

- 9.10.8 Whilst the glass assemblage is small it appears to be of a high quality and further analysis should be undertaken by a specialist such as Hilary Cool, to identify the vessel fragments to type. This will assist in understanding the status of the villa further.

10 UPDATED PROJECT DESIGN

10.1 Additional Research and Reporting

- 10.1.1 Investigate the Updated Research Questions listed below, by means of library and Cambridgeshire HER research, in order to realise the site's research potential.
- 10.1.2 Integrate the results of the specialist analysis and their recommendations with the final archive report.
- 10.1.3 Disseminate the significant results of the project by publication (see Publication Proposal in Section 9, below).
- 10.1.4 Prepare the site archive for long-term storage and deposit at Cambridgeshire County Council Archaeology Store in order to facilitate future research.

10.2 Updated Research Aims/ Questions

10.3 General Research Themes

- 10.3.1 The following Research Aims can be related to the Research Agenda for the Eastern Counties: (Glazebrook and Brown 2000; Medlycott 2011).
- 10.3.2 *Prehistoric*
- 10.3.3 No further work needs to be undertaken on the flint assemblage. The current report will be integrated into the final archive report.
- 10.3.4 Examine the evidence for, and define the character of, prehistoric activity in the area in order to contextualise the features and residual struck flint assemblage from the site.
- 10.3.5 *Roman*
- 10.3.6 What forms do farms take, and is the planned farmstead widespread across the region? What forms of buildings are present on the site itself and how far can functions be attributed to them?

10.3.7 Building forms and functions will be characterised where possible. This will be achieved through analyses of available building plan, physical remains, as well as finds distributions and comparisons with the known buildings remains excavated to the north and north-east of the site. Comparisons will be made between these local examples and examples from the wider region.

10.3.8 Does the site provide evidence for a centralising of land ownership and control in the mid to late Roman period or can this be explained by changes in farming practices, or organisation in the mid to late Roman period?

10.3.9 Pottery forms and fabrics will be assessed in detail to provide information on the proportions of locally made and imported wares and types. The pottery as well as the other artefact assemblages will be directly compared with local and regional Roman finds assemblages to identify areas of specific land use and activities where possible as well as trade links and interactions

10.3.10 Investigate whether the artefact assemblage and building forms contribute to our understanding of wealth and status in the Roman period.

10.3.11 *Medieval*

10.3.12 The context and artefactual assemblage is too small to answer any substantive research aims relating the medieval period, with the exception of the post-Roman pottery assemblage. Here, further work on the medieval jugs is proposed (see Section 9.3.1) in order to provide some evidence on the date and nature of medieval activity in the immediate vicinity of the site and to find a possible source for the vessels.

10.4 Site-Specific Research Questions

10.4.1 How has the morphology and layout of the site changed during the Roman Period, how does this relate to the surrounding known Roman remains.

- 10.4.2 Examine the type and method of construction for the buildings on the site and the type of building materials used
- 10.4.3 Research the unique characteristics of the CBM at the Tunbridge Lane site, as represented by the presence of the dipped and pigmented CBM fragments, the trapezoidal shaped combed cavity walling elements, and the tick plaster coated offset *pilae* stacks which may represent stucco moulds. This may reveal local or regional trends in the use of CBM.
- 10.4.4 Understand how the structural evidence relates to the archaeological features within this excavation and the adjacent sites.
- 10.4.5 Due to the high degree of residuality of Roman finds, recognise and define the extent and character of medieval activity on the site and how this relates to known medieval activity within the local area.

10.5 Tasks for Post-Excavation Analysis and Archive Report

Task	Description	Completed
1	Integrate contextual evidence and assessments from evaluation.	End of August 2017
2	Refine phasing.	End of August 2017
3	X-ray and conserve metal artefacts as per recommendations (Section 9.10).	End of August 2017
4.0	Complete all additional specialist research and reporting (ready for publication).	End of November 2017
4.1	The landowners have been contacted and a 'Transfer of Title' for all material from the site has been requested. Once a reply has been received, this task will be completed.	CgMs
4.2	In conjunction with specialist, select material for archiving. Not all CBM, stone and mortar will be retained. Material will be discarded with reference to PCA's discard policy and with advice of the relevant specialists.	End of November 2017
4	Integrate additional specialist analysis with structural analysis.	End of December 2017
6	Generate bibliography for library/ HER research.	End of December 2017

7	Refine structural narrative.	End of December 2017
8	Issue as Final Archive Report.	End of February 2018

10.6 Tasks for Publication

Task	Description	Completed
1	Liase with PCAS regarding publication.	End of March 2018
2	Investigate Updated Research Questions:	End of May 2018
2.1	Library research (Cambridge University Library) -Published reports on surrounding fieldwork in site vicinity. -Cartographic evidence	
2.2	HER research (Cambridge) -Prehistoric activity in Bottisham and site vicinity -Roman activity and land-use in Bottisham and wider area - Unpublished reports on fieldwork/ surrounding fieldwork in site vicinity.	
3	Re-work Archive Report figures for publication New figures x c. 8 Finds illustrations and photographs as detailed below.	End of May 2018
4	Prepare publication draft.	End of May 2018
5	Submit to PCAS for publication.	End of June 2018

10.7 Archiving

Task	Description
1	Prepare and deposit site archive with Cambridgeshire County Council Archaeology Store.

11 PUBLICATION PROPOSAL

11.1.1 It is proposed to publish the results of the project as an article in the county archaeological journal, Proceedings of the Cambridge Antiquarian Society (PCAS). The article is provisionally entitled 'Roman Villa Complex at Tunbridge Lane, Bottisham, Cambridgeshire'.

11.1.2 The results of the project should also be considered as part of any future synthesis of the numerous archaeological investigations which have taken place in the vicinity of the site, which shed light on aspects of the development, structure, society and economy of the Roman period in and around Bottisham.

11.2 Estimated Report Statistics

11.2.1 Estimated Word Count: Approximately 5000-6000 words.

11.3 Report Contents (approximate word count)

11.3.1 Introduction and Background: site location, NGR, geology & topography, reason for fieldwork, where to access full 'grey' report and site archive (500 words).

11.3.2 Description of the layout and physical character of the structures, ditches and pitting activity, accompanied by phase plans, in addition to summaries of the associated finds and environmental evidence, with the emphasis being on the overall picture of the site's dating, character, economy, status and environment over time (4000 words)

11.3.3 A discussion of the unique characteristics of the Tunbridge Lane site, its buildings and building materials, potentially with an emphasis on the CBM (500 words).

11.3.4 A discussion of the archaeological evidence in comparison with previous archaeological investigations adjacent to the site (Kenney 2008 and Newton 2016). Comparison with both sites will allow discussion and interpretation of the evidence with regards to different functional areas of the Tunbridge Lane villa/farm complex, its core residential elements and

peripheral functional and industrial areas, as well as a discussion of the chronological development of the site and potential shift in settlement location and emphasis (1000 words).

11.3.5 Further discussion incorporating comparative material from both local and regional Roman Villa sites. Current suggested examples are the sites at Haddon (Upex 1994) and Itter Crescent (OAE 2012), both near Peterborough and both of which each contained a possible Roman bath house. Further examples will be sought (Section 10.6 Task 3) (1000 words).

11.3.6 Acknowledgements: client, consultant, planning archaeologist, manager, CAD Department and officer, site team, site manager, others.

11.3.7 Bibliography: list of sources consulted.

11.3.8 Figures:

Figure No.	Title	Content
1	Location Plan	Map of Local area and relevant locations.
2-3	Phase Plan(s)	Plans outlining site phasing, in context with adjacent sites.
4-6	Structures	Plans of buildings.
7-15	Detailed Feature Plans and Sections	Plans of significant features and relevant section drawings,
15-22	Photographs	Illustrative photographs of the site, the buildings and significant features.
22-TBC	Finds Illustrations (photographs and drawings as appropriate)	Relevant finds material. See specialist sections for recommendations. Illustrations will be a selection of: Flint: a small number of indicative pieces. Stone: stone container, cornice, chalk spindle whorl, example of the Purbeck marble mortar.

		<p>CBM: Indicative examples of the box flue tile forms and combing, offset <i>pilae</i> stacks.</p> <p>Roman pottery: a range of the Horningsea products which are characteristic of the assemblage.</p> <p>Post-Roman pottery: two to three indicative examples.</p> <p>Small finds: SF 14 bell, SF 40 mount, all of the bone and antler objects including the pin; the chalk loomweight and the iron stylus; potentially the ribbed glass bowl. The number of iron objects requiring illustration may increase or decrease once X-ray has enabled a more detailed study of the severely corroded items.</p>
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Table 13: Proposed publication figures

12 ACKNOWLEDGEMENTS

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14 APPENDIX 1 – ENVIRONMENTAL REMAINS

Table 14: Prehistoric Samples

Sample	Fill	Cut	Feature	Bulk sample volume (L)	Flot volume (ml)	Charred grains			Charred wood >4mmØ	charred wood <4mmØ	Modern root/rhizomes	Terrestrial Mollusca	Ceciliodes acicula (Müller)
						a	d	p					
17	366	364	?	20	50	1	1	2	-	-	3	2	2
22	515	516	pit	40	200	1	1	2	1	3	3	1	3

Key: a = abundance [1=occasional1-10,2=moderate 11-100 and 3= abundant>100;

d = diversity[1=low1-4 taxa types, 2=moderate5-10,3= high;

p = preservation [1 = poor (family level only), 2= moderate (genus), 3= good (species identification possible)

Table 15: Medieval Samples

Sample	Fill	Cut	Feature	Bulk sample volume (L)	Flot volume (ml)	Charred grains			Charred wood >4mm	charred wood <4mm	Modern root/rhizomes	Terrestrial mollusca	Ceciliodes acicula (Müller)
						a	d	p					
13	274	273	quarry	20	50	2	1	2	-	1	3	1	3
14	310	309	strip quarry	20	200	1	1	1	1	1	3	-	1

Key: a = abundance [1=occasional1-10,2=moderate 11-100 and 3= abundant>100;

d = diversity[1=low1-4 taxa types, 2=moderate5-10,3= high;

p = preservation [1 = poor (family level only), 2= moderate (genus), 3= good (species identification possible)

Table 16: Romano-British Samples

Sample	Fill	Cut	Feature	Bulk sample volume (L)	Flot volume (ml)	Charred grains			Charred seeds			Charred chaff			Charred twigs	Charred wood >4mmØ	charred wood <4mmØ	Roundwood frag >4mmØ	Dried waterlogged Seeds			Modern root/rhizomes	Terrestrial mollusca	Freshwater mollusca	Ceciliodes acicula (Müller)	Earthworm cocoons
						a	d	p	a	d	p	a	d	p					a	d	p					
7	248	235	pit/tank	20	100	1	1	3	-	-	-	-	-	-	1	1	-	-	-	-	3	1	-	2	-	
9	252	251	ditch	20	50	3	1	2	2	1	2	-	-	-	1	3	-	-	-	-	2	1	1	3	-	
10	237	238	ditch	40	50	2	1	2	1	1	2	-	-	-	1	1	-	-	-	-	-	3	-	3	-	
11	267	266	ditch	20	75	1	1	2	-	-	-	-	-	-	-	1	-	-	-	-	3	1	-	3	-	
12	246	245	pit	40	200	3	1	3	-	-	-	1	1	2	-	2	2	3	-	-	-	3	2	-	3	1
15	316	313	pit	20	40	2	1	3	2	1	3	-	-	-	1	1	-	-	-	-	2	2	-	1	-	
16	333	332	ditch/beam slot	40	100	3	1	3	1	1	3	-	-	-	-	1	3	2	-	-	-	3	2	-	3	-
28	590	591	ditch	40	200	-	-	-	-	-	-	-	-	-	-	-	2	-	1	1	3	3	1	-	3	-
29	680	682	pit-charcoal layer	40	300	3	1	3	1	1	3	-	-	-	1	3	3	-	-	-	-	3	2	1	3	-

Key: a = abundance [1=occasional1-10,2=moderate 11-100 and 3= abundant>100;

d = diversity[1=low1-4 taxa types, 2=moderate5-10,3= high;

p = preservation [1 = poor (family level only), 2= moderate (genus), 3= good (species identification possible)

15 APPENDIX 2 – OASIS FORM

OASIS ID: preconst1-279546

Project details

Project name	Land at Crystal Park, Tunbridge Lane, Bottisham: Archaeological Excavation Report
Short description of the project	Evaluation and excavation of a 3rd to 4th century small 'villa rustica' complex, comprising three buildings with stone foundations including a possible bath house. The buildings were arranged around a possible yard devoid of archaeological features and were surrounded to the west and north by ditched agricultural enclosures. The enclosures contained pits and a clunch-lined well. To the south of the bath house was a small key hole shaped oven.
Project dates	Start: 31-05-2016 End: 12-08-2016
Previous/future work	Yes / Not known
Any associated project reference codes	ECB4674 - HER event no.
Type of project	Recording project
Monument type	PIT Bronze Age, BUILDING Roman, PIT Roman, DITCH Roman, OVEN Roman, PIT Medieval

Project location

Country	England
Site location	CAMBRIDGESHIRE EAST CAMBRIDGESHIRE BOTTISHAM Land at Crystal Park, Tunbridge Lane, Bottisham, Cambridge
Postcode	CB25 9DU
Study area	0.6 Hectares
Site coordinates	TL 5458 6094 52.22450912589 0.263398812518 52 13 28 N 000 15 48 E Point

Project creators

Name of Organisation	Pre-Construct Archaeology Limited
Project brief originator	Cambridge HET
Project design originator	PCA Central
Project director/manager	Mark Hinman
Project supervisor	Jonathan House
Type of sponsor/funding body	Developer

Project archives

Physical Archive recipient	Cambridgeshire County Council Archaeology Store
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Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Human Bones","Metal","Worked stone/lithics"
Digital Archive recipient	Cambridgeshire County Council Archaeology Store
Digital Contents	"Animal Bones","Ceramics","Environmental","Metal","Stratigraphic","Survey","Worked stone/lithics","other"
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Survey","Text"
Paper Archive recipient	Cambridgeshire County Council Archaeology Store
Paper Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal","Stratigraphic","Survey","Worked stone/lithics"
Paper Media available	"Context sheet","Correspondence","Drawing","Matrices","Miscellaneous Material","Photograph","Plan","Report","Section","Unpublished Text"
Entered by	Christiane Meckseper (cmeckseper@pre-construct.com)
Entered on	26 May 2017

16 PLATES



Plate 1: Aerial shot of Roman Buildings 1, 2 and 3.



Plate 2: Aerial shot of Roman Building 1.



Plate 3: Aerial shot of Roman Building 2



Plate 4: Aerial shot of Roman Building 3.



Plate 5: Constructed Roman Well [678]. South-West view.



Plate 6: Constructed Roman Well [678]. North-West view.

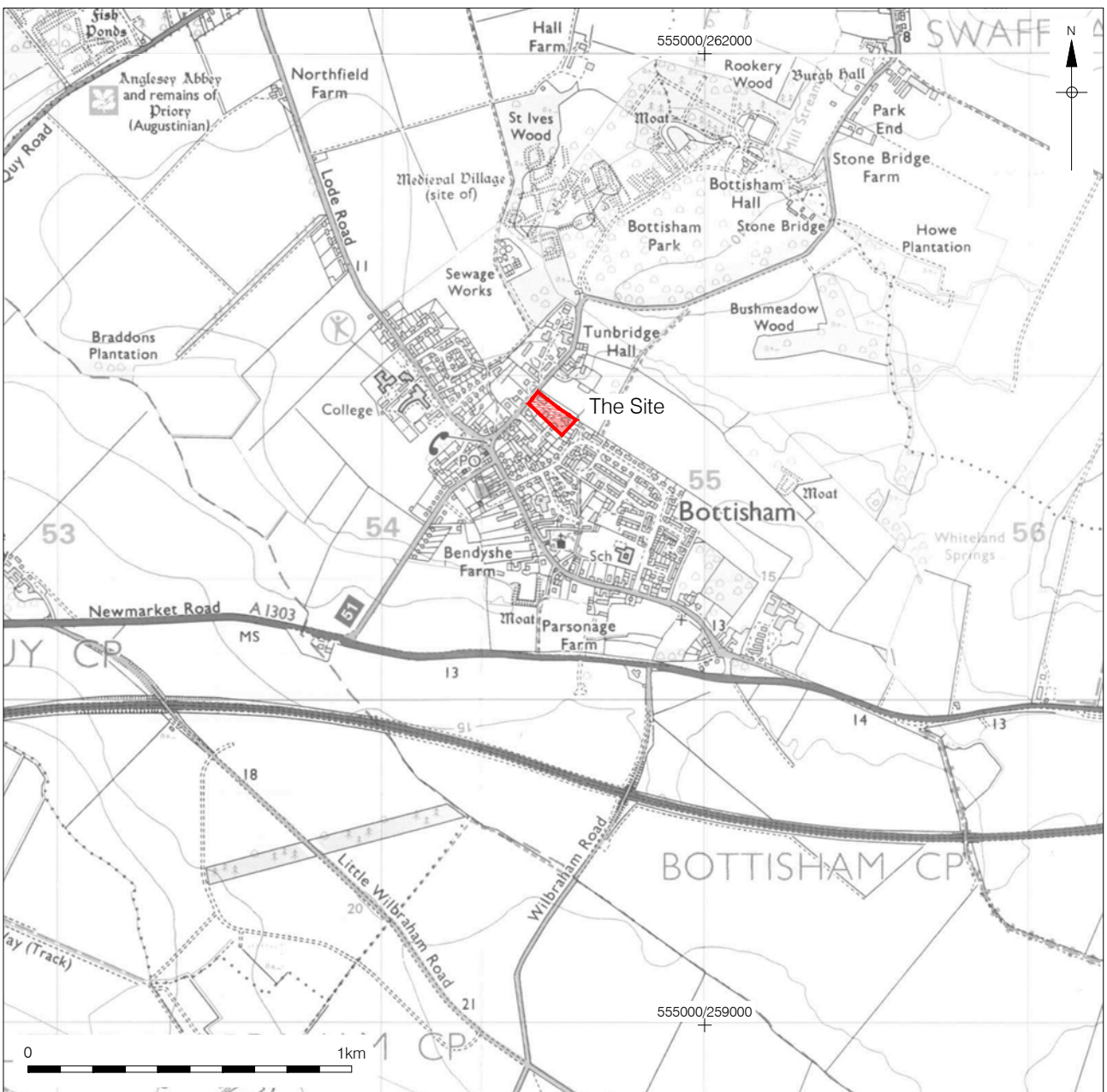
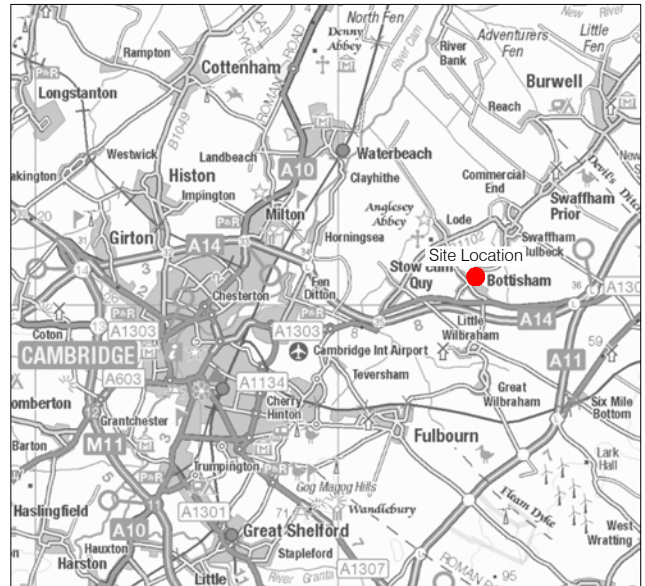


Plate 7: Working shot of constructed Roman Well [678]. SW view. Work credited to Poppy Yapp & David Curry.



Plate 8: Another working shot of Roman Well [678].

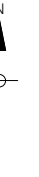
17 FIGURES



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Figure 1
 Site Location
 1:2,000,000, 1:250,000 & 1:20,000 at A4

- CCPB14 Archaeological Features
- ▨ CCPB14 Modern truncation
- ▧ HAT432 & AS1011 Features



0 40m

Figure 2
 Detailed Site Location showing Archaeological Features and adjacent Excavation Areas: HAT432 & AS1011
 1:800 at A3





- Prehistoric
- Roman
- Medieval
- Modern truncation
- Undated features
- Treethrows





0 50m

Figure 3
Overall phased site plan
1:625 at A4



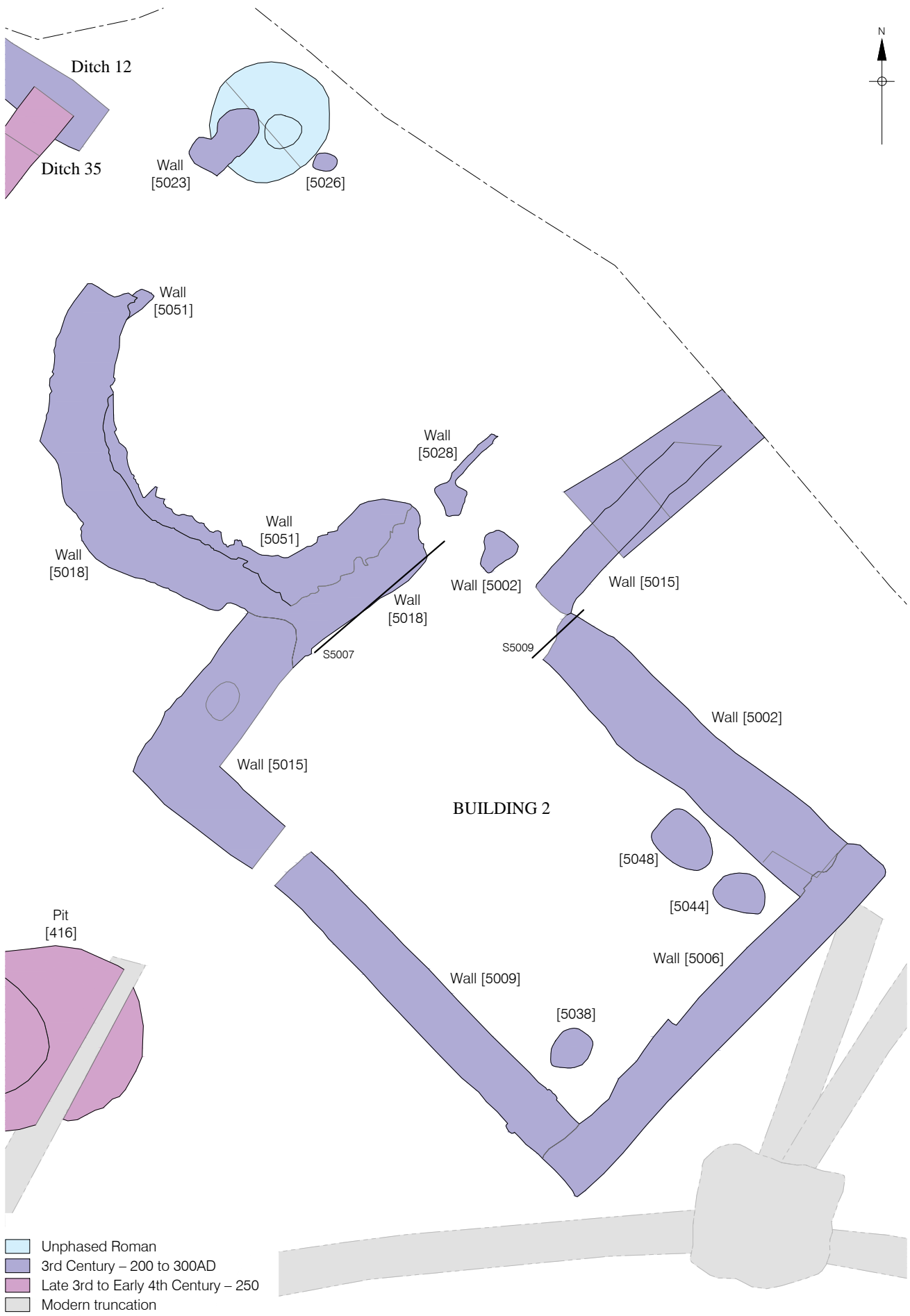
HAT 432 and AS1011 Excavations:
 Natural, Undated and Modern features 
 Roman features 



CCPB14 Archaeological Features:
 Unphased Roman
 Pre to Early 3rd Century - 120 to 200/230AD
 3rd Century - 200 to 300AD
 Late 3rd to Early 4th Century - 250 to 350AD

0 50m
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 12/06/17 MR

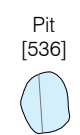
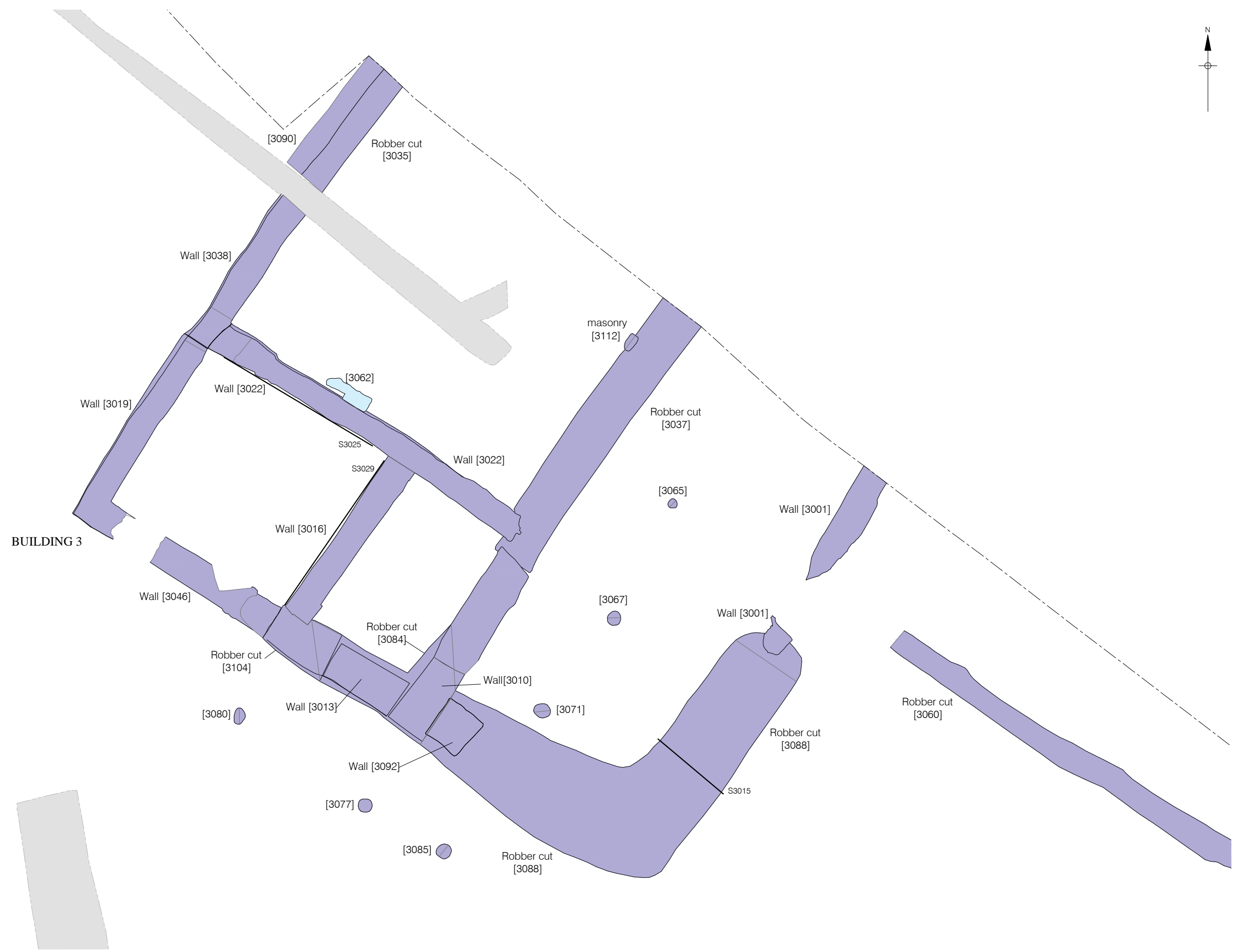
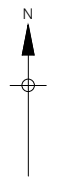
Figure 4
 Roman phase plan with Roman features shown in the adjacent sites HAT432 and AS1011
 1:625 at A3



- Unphased Roman
- 3rd Century – 200 to 300AD
- Late 3rd to Early 4th Century – 250
- Modern truncation



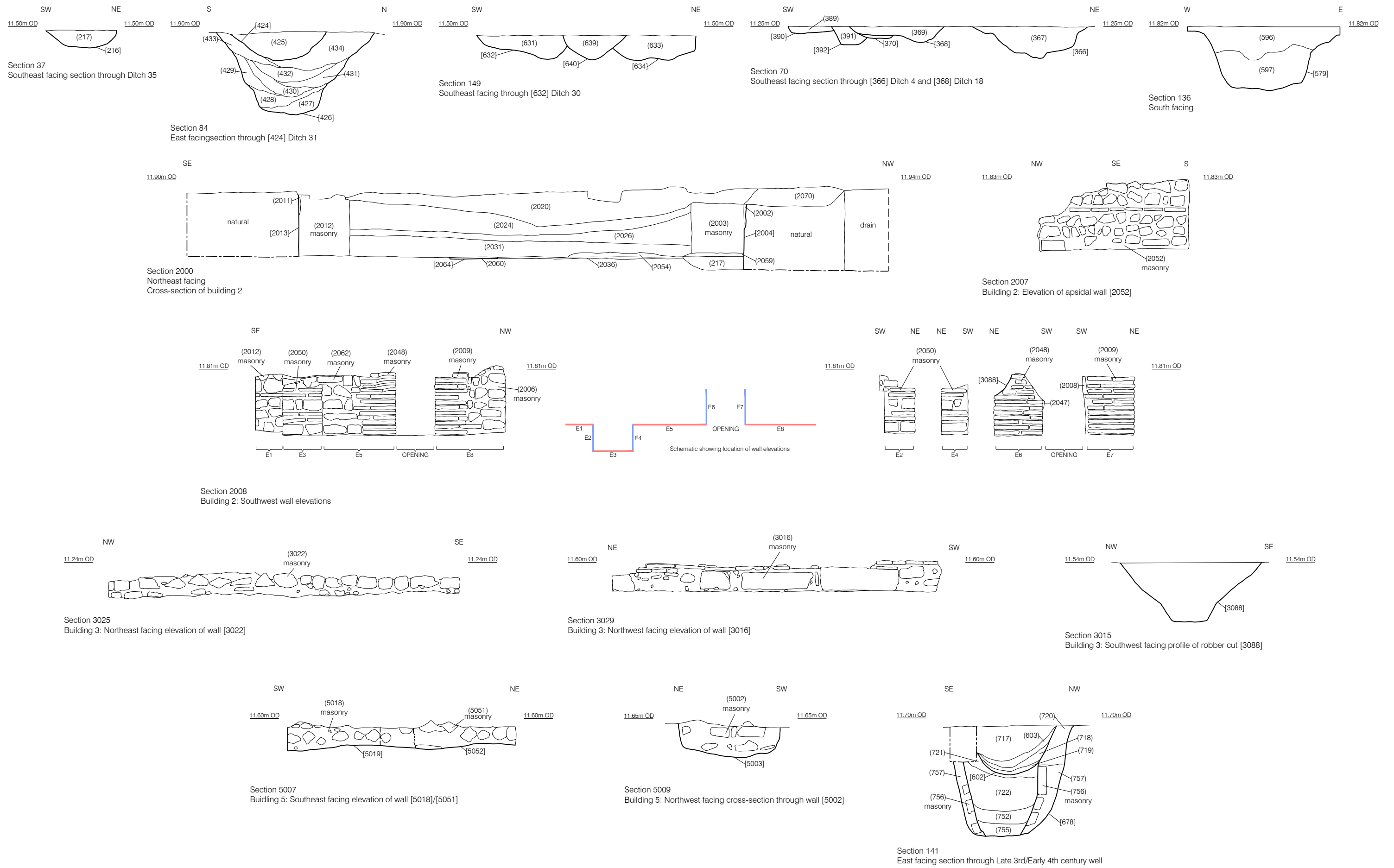
Figure 6
Detail of Building 2
1:80 at A4



- Unphased Roman
- 3rd Century – 200 to 300AD
- Modern truncation



Figure 7
Detail of Building 3
1:80 at A3



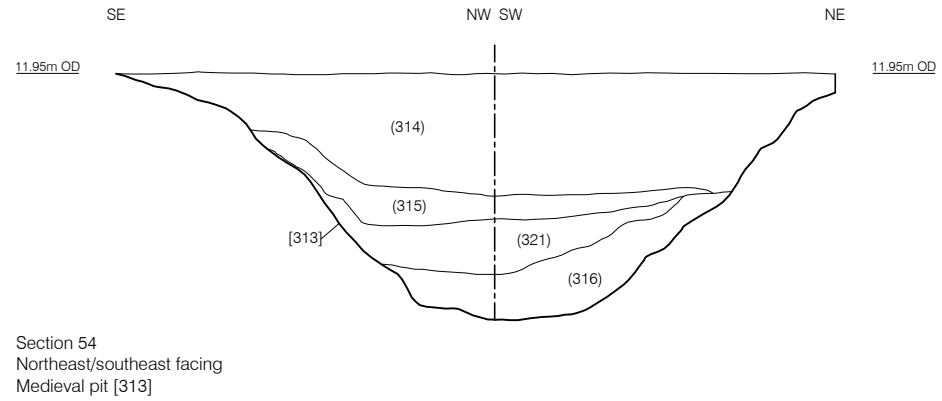
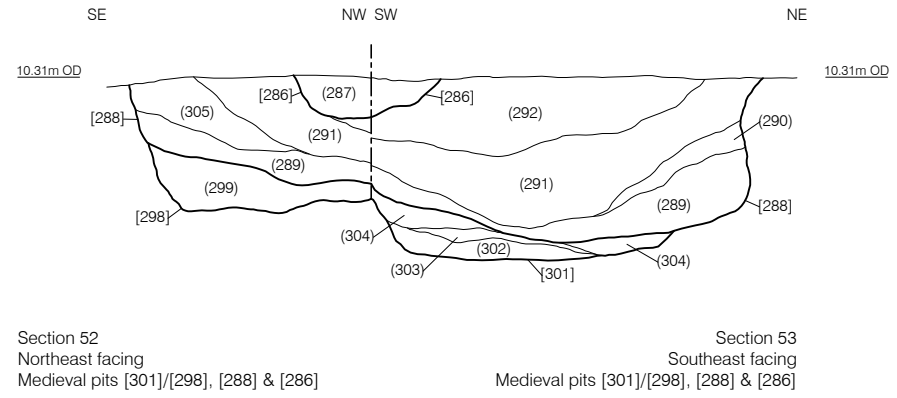
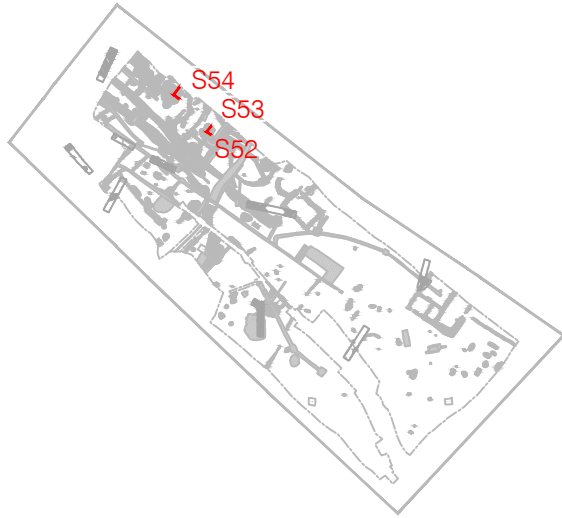


Figure 9
Sections through Medieval pits
1:40 (Inset 1:2,000) at A3

PCA

PCA SOUTH

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96 ENDWELL ROAD
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PCA CENTRAL

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