Assessment of an Archaeological Excavation of Land at Stuart Rd, Gravesend, Kent

Site Code: KSRG 04

Central National Grid Reference: TQ 6437 7426

Written by Guy Seddon and Lorraine Darton
Pre-Construct Archaeology Limited, April 2005

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CONTENTS

1 ABSTRACT

1.1 This report details the results of an archaeological excavation undertaken by Pre-Construct Archaeology Ltd, of land at Stuart Rd, Gravesend, Kent. The archaeological excavation followed an evaluation and was commissioned by Duncan Hawkins of CgMs on behalf of Bellway Homes in advance of the proposed redevelopment of the site.

1.2 The evaluation was carried out by Pre-Construct Archaeology and comprised four trenches. The evaluation trenches produced material dating from the Late Bronze Age to the Roman period.

1.3 The excavation was comprised of five trenches. Area A, was an open area situated in the south-west of the site. Areas B, C, D and E were smaller, positioned strategically where building work would be intrusive on the archaeology beneath the footprint of the proposed development. The excavation revealed evidence for possible Mesolithic-Early Bronze Age activity on or around the site, Roman and Early Saxon occupation in the immediate vicinity and some post-medieval activity.

1.4 Part of the flint assemblage was most characteristic of Mesolithic or Early Neolithic industries, though they were all residual. The earliest recorded features from the site were two postholes, towards the north of Area A, probably dating to the Bronze Age.

1.5 A series of parallel east-west aligned ditches and gullies contained pottery dating to between 150 and 370 AD. These linear features probably represent a Roman field system and the northernmost ditch aligns with a ditch recently excavated at Gravesend Hospital (KGEH 04) 23m to the east.

1.6 Three small pits and two postholes probably of an early Saxon date were sealed by a colluvial layer containing pottery dating to between 575 and 650 AD in Area E.

2 INTRODUCTION

2.1 An archaeological excavation was conducted by Pre-Construct Archaeology Ltd on Land at Stuart Rd, Gravesend, Kent (Fig 1), between 2nd and 10th September and 11th and 22nd October 2004. The work was commissioned by Duncan Hawkins of CgMs Consulting on behalf of Bellway Homes.

2.2 The first phase comprised of two trenches, Area A c. 25 x 15m to the south west of the study area the other, Area B, c. 3.5 x 2.5m was positioned further to the north. The second phase comprised of three trenches, Areas C and E measured c. 10 x 5m whilst Area D measured c. 10 x 10m (Fig 2).

2.3 The site central National Grid Reference is TQ6437 7426. The site was bounded to the east by Stuart Road with buildings fronting the road forming its eastern boundary to the north and south car parks belonging to commercial buildings and to the west by a disused chalk quarry, now a retail park.

2.4 Duncan Hawkins produced an archaeological desk-top assessment of the site[1]. The archaeological evaluation was undertaken by Pre-Construct Archaeology Limited in September and October of 2004 comprising four trenches[2]. The method statement for the ensuing excavation was produced by David Divers of Pre-Construct Archaeology Ltd[3].

2.5 The field excavation was supervised by Fiona Keith-Lucas and Guy Seddon, under the direction of David Divers and Tim Bradley. The work was monitored by Adam Single Archaeological Officer for Gravesend and Kent County Council.

2.6 A temporary benchmark (TBM) was located with a value of 15.83m OD which had been brought in from a bench mark on the north east corner of the Old Hospital site (value 13.55m OD).

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[1] Hawkins, D. 2004. Archaeological Desk Based Assessment on Land at Stuart Road, Gravesend, Kent. CgMs Consulting, Unpublished Report

[2] Keith-Lucas, F. 2004. An Archaeological Evaluation on Land at Stuart Road, Gravesend, Kent. Pre-Construct Archaeology Ltd, Unpublished Report

[3] Divers, D. 2004. Method Statement for an Archaeological Excavation at Stuart Road, Gravesend, Kent.Pre-Construct Archaeology Ltd, Unpublished Report

2.7 The completed archive comprising written and drawn records will be deposited with an appropriate local museum.

2.10 The site was allocated the site code KSRG 04.

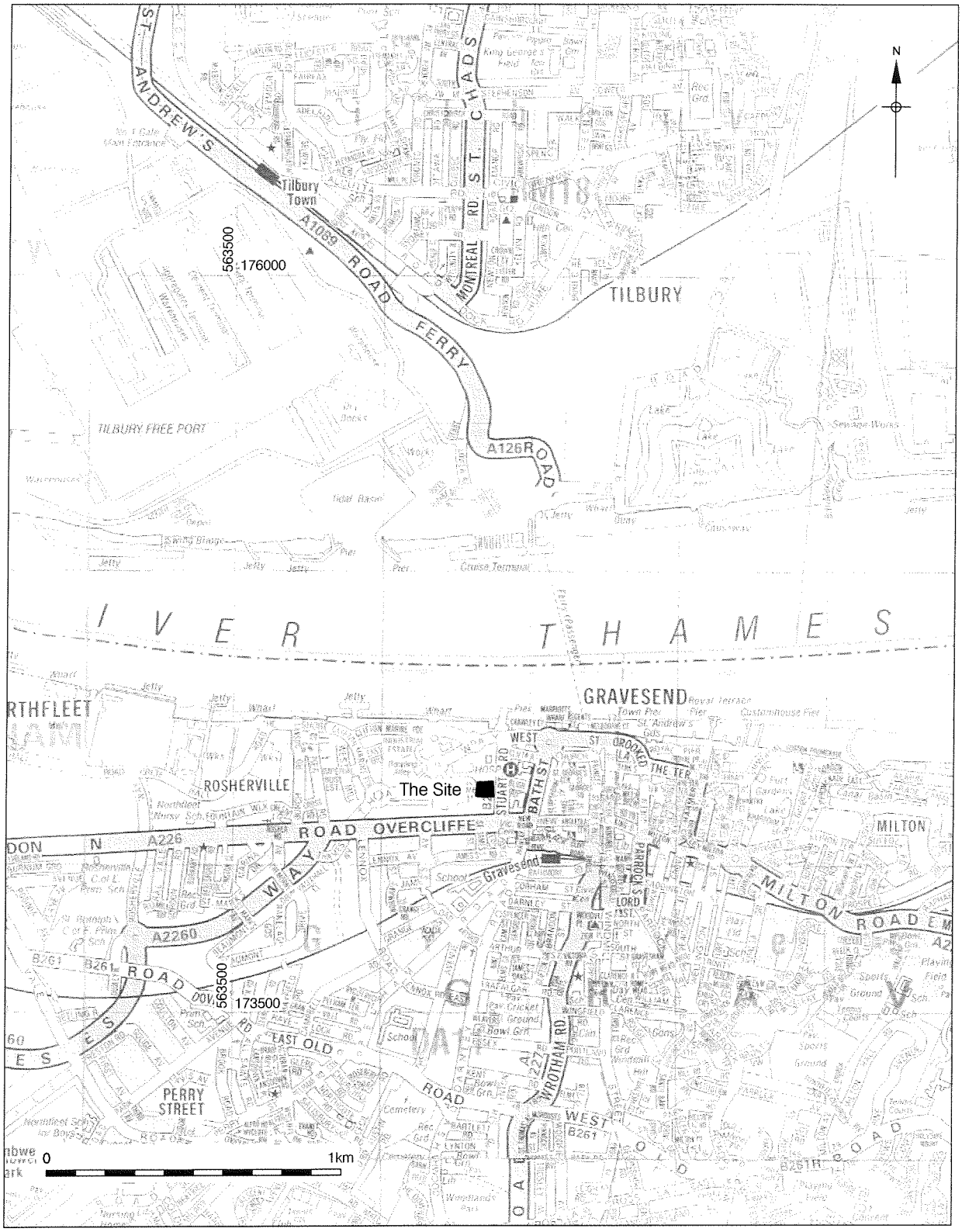

Figure 1
Site Location
1:20,000

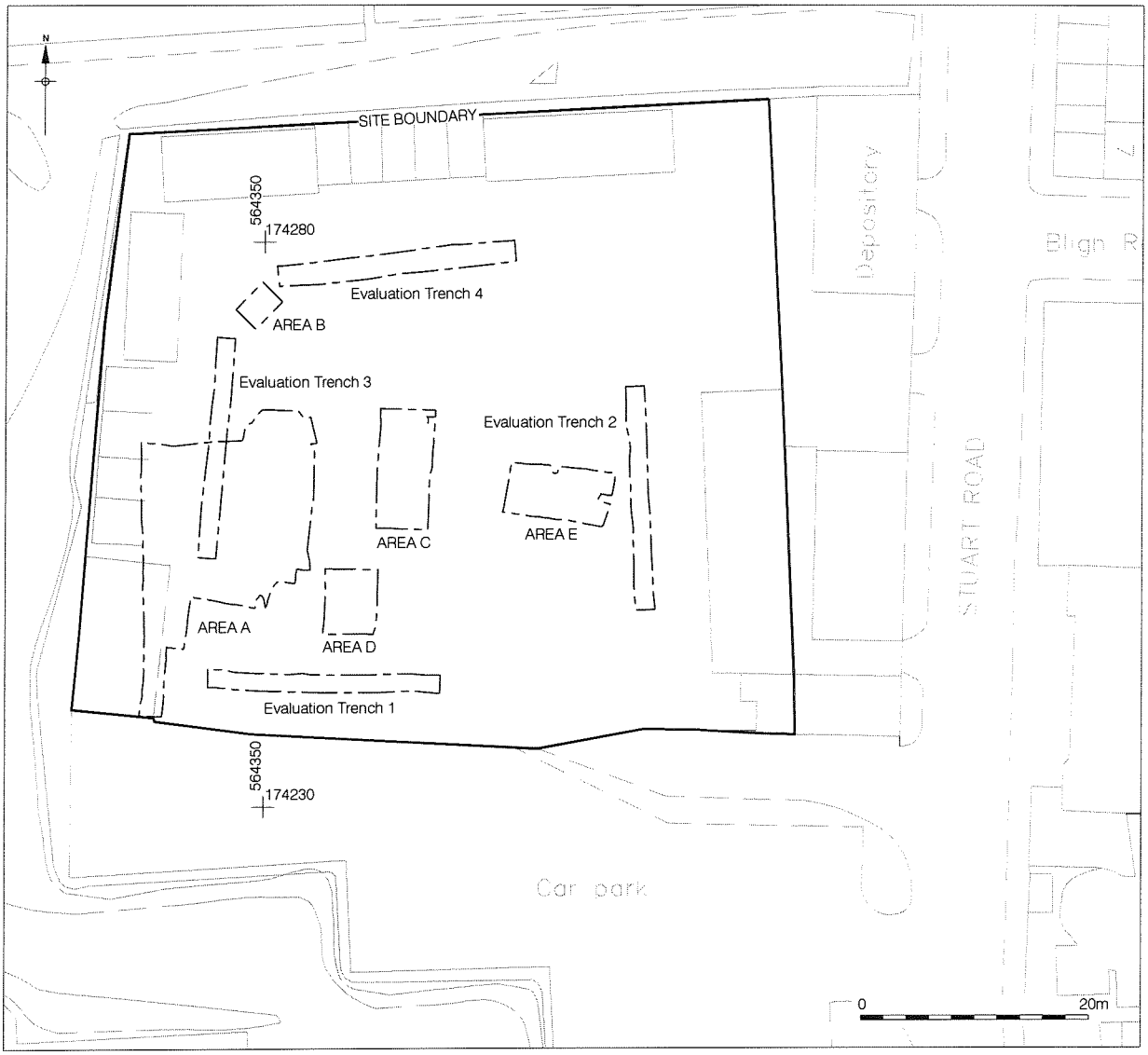

Figure 2
Excavation Areas
1:625

3 PLANNING BACKGROUND

3.1 Planning background

3.1.1 The archaeological evaluation and resulting excavations were undertaken in response to the conditional planning permission granted by Kent County Council for residential development of Land at Stuart Rd, Gravesend, Kent.

3.1.2 The local policy framework is provided by the Gravesham Local Plan (adopted May 2000).

3.1.3 Policy BE 10 states:

DEVELOPMENT ON LOCALLY IMPORTANT ARCHAEOLOGICAL SITES WILL NOT NORMALLY BE PERMITTED. ON ARCHAEOLOGICAL SITES WHERE PRESERNATION IS NOT WARRANTED, APPLICATIONS WILL NORMALLY BE REFUSED UNLESS ARRANGEMENTS HAVE BEEN MADE BY THE DEVELOPER TO ENSURE THAT TIME AND RESOURCES ARE AVAILABLE TO ALLOW SATISFACTORY ACHAEOLOGICAL INVESTIGATION AND RECORDING OF THE SITE BY AN APPROVED ARCHAEOLOGICAL BODY, TO TAKE PLACE IN ADVANCE OF OR DURING THE DEVELOMENT. THE SPECIFICATION AND PROGRAMME OF WORK FOR THE ARCHAEOLOGICAL INVESTIGATION, INCLUDING ITS RELATIONSHIP TO THE PROGRAMME OF DEVELOMENT, ARE TO BE SUBMITTED AND APPROVED BY THE BOURGH COUNCIL. IN ORDER TO DETERMINE A PLANNING APPLICATION, THE BOURGH COUNCIL MAY REQUIRE THE DEVELOPER TO PROVIDE ADDITIONAL INFORMATION, IN THE FORM OF AN ASSESMENT OF THE ARCHAEOLOGICAL OR HISTORIC IMPORTANCE OF THE SITE IN QUESTION AND THE LIKELY IMPACT OF DEVELOMENT. IN CERTAIN CASES, SUCH AN ASSESSMENT MAY INVLVE AN EVALUATION EXCAVATION. PRESERVATION IN SITU WILL BE FAVOURED BY THE BOURGH COUNCIL IN MOST CASES.

3.1.4 An archaeological desk based assessment [4]was prepared which collated existing archaeological, topographic and land-use data for the site. This identified that the site was not within an archaeological priority zone, neither was it adjacent to a Scheduled

[4] Hawkins, D. An Archaeological Desk Based Assessment on Land at Stuart Road, Gravesend, Kent. CgMs, Unpublished Report

Ancient Monument. However Prehistoric and Roman remains were discovered immediately east of the site.

3.1.5 As a result and in consultation with KCC Archaeological Officers a programme of archaeological field evaluation and excavation has been carried out to asses the nature of archaeological deposits within the study area and mitigate the development impact on the buried archaeological resource.

4 GEOLOGY AND TOPOGRAPHY

4.1 The solid geology at the site was Upper Chalk, as seen on the 1:50,000 Geological Survey Sheet 271: Dartford, and confirmed by recent geotechnical investigations on site[5]. The chalk was overlain by a colluvial deposit.

4.2 The site was located on land that sloped steeply down to the River Thames, approximately 250m to the north of the site. As a result, small scale terracing had taken place so that the space could be utilised as a car park. This left the ground level at between 17.01m OD to the south and 15.61m OD to the north.

[5] Soiltec Laboratories Ltd. 2002 A Report on a Site Investigation at Stuart Road, Gravesend, Kent. Unpublished report

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 Introduction

5.1.1 The Desk Based Assessment brought together pertinent historical information and the search sites of the Kent Sites and Monuments Record within a 500m radius of the site[6]. The salient points of this will be covered, with consideration of the recent excavations, KGEH 04, directly opposite this site on the corner of Bligh Road.

5.2 Prehistoric

5.2.1 Although the SMR does not record evidence for prehistory within 500m of the site, the Bligh Road (KGEH 04) excavations uncovered significant prehistoric remains. A Bronze Age colluvial layer overlay the north west corner of this site. A large east-west aligned ditch dated to the Late Iron Age-Early Romano British period was also discovered.

5.3 Roman

5.3.1 A site in the centre of Gravesend was excavated in 1978, as yet unpublished, this revealed significant Roman remains. These included ditched enclosures, a north-south road, and evidence for nearby masonry structures. The Bligh Road (KGEH 04) excavations also uncovered significant Roman archaeology, including a burial and evidence for a possible earth and timber building.

5.4 Saxon and Medieval

5.4.1 The site lies outside the medieval town and as a result no Saxon or Medieval archaeology is recorded on the SMR within 500m of the site. The Bligh Road excavations however did produce evidence for possible early Saxon fish smoking pits.

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[6] Hawkins, D. 2004. Archaeological Desk Based Assessment on Land at Stuart Road Gravesend, Kent. CgMs Consulting, Unpublished report.

5.5 Post Medieval

5.5.1 As with the medieval period the site lies outside the town. The study area saw neighbouring chalk extraction in the 19th century and the construction of a Victorian work house towards the northern end of the site. Major development of the area did not begin until the 20th century.

6 ARCHAEOLGICAL METHODOLOGY

6.1 The excavation took place in two phases and comprised five trenches. The first phase consisted of Area A c. 25 x 15m, in the south western corner of the site and Area B c. 3.5 x 2.5m, positioned to the north east of this. Phase two entailed the excavation of Areas C c. 10 x 5m, Area D c. 10 x 10m and E c. 10 x 5m along the southern boundary of the study site.

6.2 A mechanical excavator fitted with a toothless ditching bucket, under archaeological supervision, removed all undifferentiated topsoil and modern overburden in successive spits until archaeological deposits were reached.

6.3 Following the machining, the trenches were cleaned by hand. All features of archaeological interest were fully excavated.

6.4 All features and deposits observed were planned and recorded onto *pro forma* context record sheets. Contexts were numbered sequentially and are shown in this report with square brackets. Plans and sections were drawn at a scale of 1:10 or 1:20 as appropriate. A general photographic survey of the site and working conditions was completed.

6.5 A temporary benchmark (TBM) was located on the site with a value of 15.83m OD. This had been brought in from a benchmark on the site of the old hospital (value 13.55m OD).

7 THE ARCHAEOLOGICAL SEQUENCE

7.1 Phase 1: Natural Deposits

7.1.1 The natural deposits on site consisted of chalk bedrock recorded at 15,45m OD. This was overlain by marl which was sealed by a sandy, silty clay, possibly a colluvial deposit recorded at 16.22m OD.

7.2 Phase 2: Prehistoric (Fig 3)

7.2.1 This phase was mainly represented by a light yellowish brown sandy silt, [25], [34], [101] and [125], that contained worked flints of various prehistoric periods. The dispersal of the flints throughout the layer indicates that this soil was colluvial.

7.2.2 Posthole [113] was sub-circular in plan with very steep sides and a flat base. Measuring 0.4m N-S by 0.35m E-W, it had a depth of 0.36m. Its fill [112] was a mid greyish brown sandy silt that contained five struck flints.

7.2.3 Posthole [115] was circular in plan with near vertical sides and a flat base. It measured 0.44m N-S by 0.54m E-W and had a depth of 0.37m. Its fill [114] was a mid greyish, yellow brown sandy silt which contained three struck flints and a very small and abraded sherd of Bronze Age pottery. It is possible that these postholes were part of some type of structure, though its precise form is unclear.

7.3 Phase3: Roman (Fig 4)

7.3.1 The Roman period was dominated by a series of east-west gullies and ditches forming what is most likely a Roman field system.

7.3.2 Ditch [48] was recorded in the north of the site in evaluation Trench 4. The dimensions and profile of this ditch were very similar to the ditch discovered at the Hospital site (KGEH 04). A possible gully [19] was found in evaluation Trench 2 to the south of ditch [48]. Ditch [11], found also in Area E as [353], Area C as [350], and in evaluation Trench 3 as [44]. Further south was another gully recorded as [42] in evaluation Trench 3, [122] in Area A, [301] in Area C and [37] in evaluation Trench 2. Ditch [105] was recorded in Area A and at the south of the area was ditch [120]. This v-shaped ditch was also recorded in evaluation Trench 1 as [5], it was 3.20m wide and 1.54m deep. The side were steep, falling at *c.*75° from horizontal to a pointed

base. The size and profile of this feature is indicative of a boundary ditch similar to ditch [48]. The ditches and gullies seem to be contemporary, the fills being very similar in nature and containing bone, CBM and pot, dating to between the late 2nd and late 4th centuries.

7.3.3 Several stakeholes and a posthole also belong to this phase though did not contain any dateable material. They were aligned along either side of gully [301], possibly forming fencelines.

7.3.4 Pit [124] contained Early Roman Sand-tempered ware, (43-80 AD) and Patchgrove ware, (30-270 AD), CBM and animal bone within its fill [123].

7.3.5 Layer [335], a light brown sandy silt, contained CBM, burnt and struck flint, bone and pottery dating from the early 2nd –mid 3rd centuries AD.

7.4 Phase 4: Early Saxon (Fig 5)

7.4.1 In Area E a small group of pits, [342], [345] and [357] and stakeholes, [359] and [361], were discovered. A gully or possible beam slot [339] was also recorded in the trench.

7.4.2 Sealing these features was layer [318] which contained early Saxon pottery, (575-650 AD). It also contained Roman pot, (150-370), and CBM and struck flints which suggests that this deposit was most probably colluvial in nature.

7.5 Phase 5: Post-Medieval (Fig 6)

7.5.1 Posthole [107] contained metal and fragments of CBM whereas postholes [305] and [110] did not contain any dating evidence. Both the postholes were sealed by layer [1]=[108]=[319]=[346], a subsoil, which contained post-medieval pottery. A tree bole [355] was found in the west of Area E.

7.6 Phase 6: 19th-20th Century

7.6.1 The whole site was sealed by layer [100]=[310] a highly disturbed topsoil which contained large amounts of demolition rubble, possibly made ground, levelling the site for use as a car park.

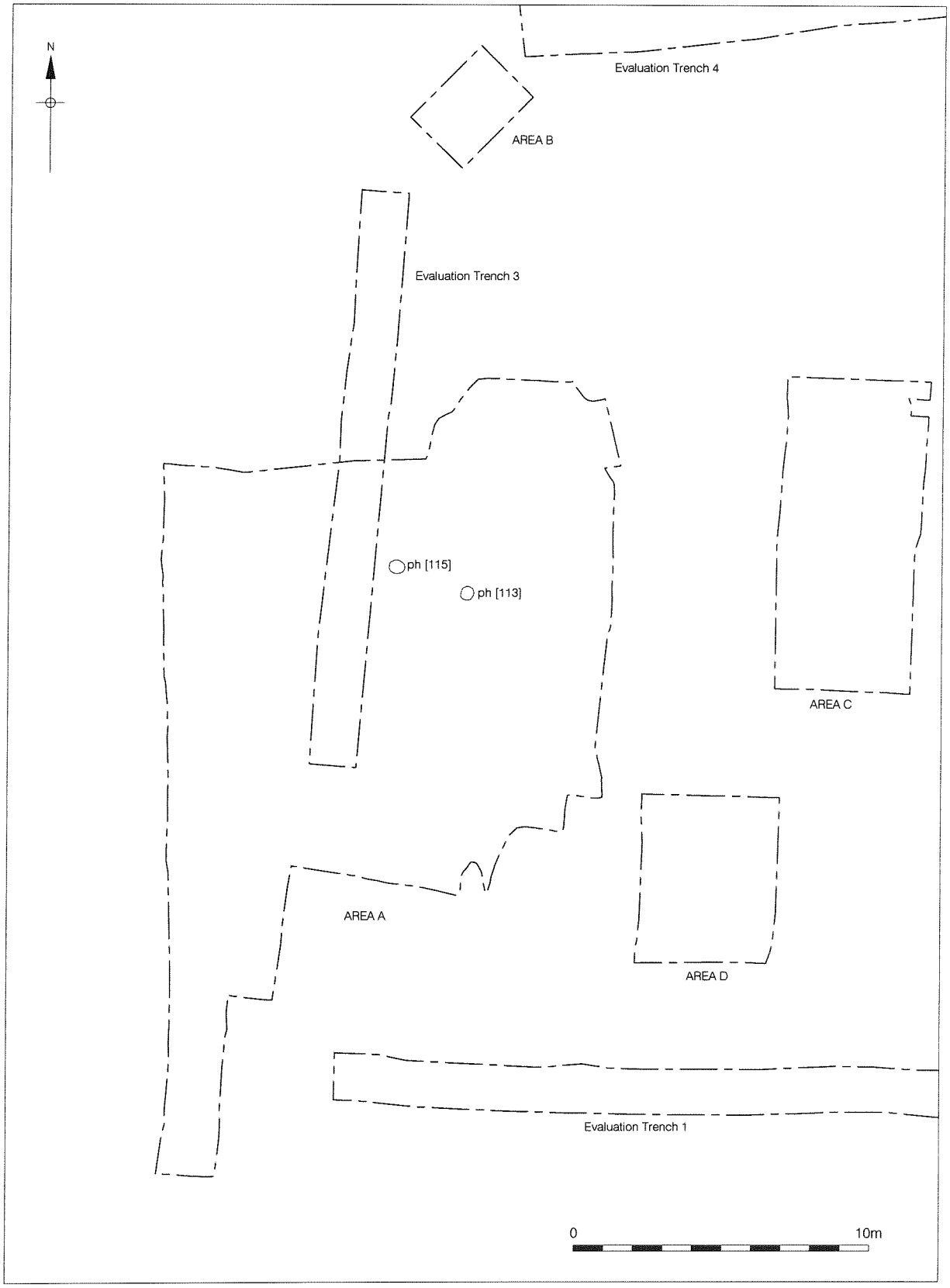
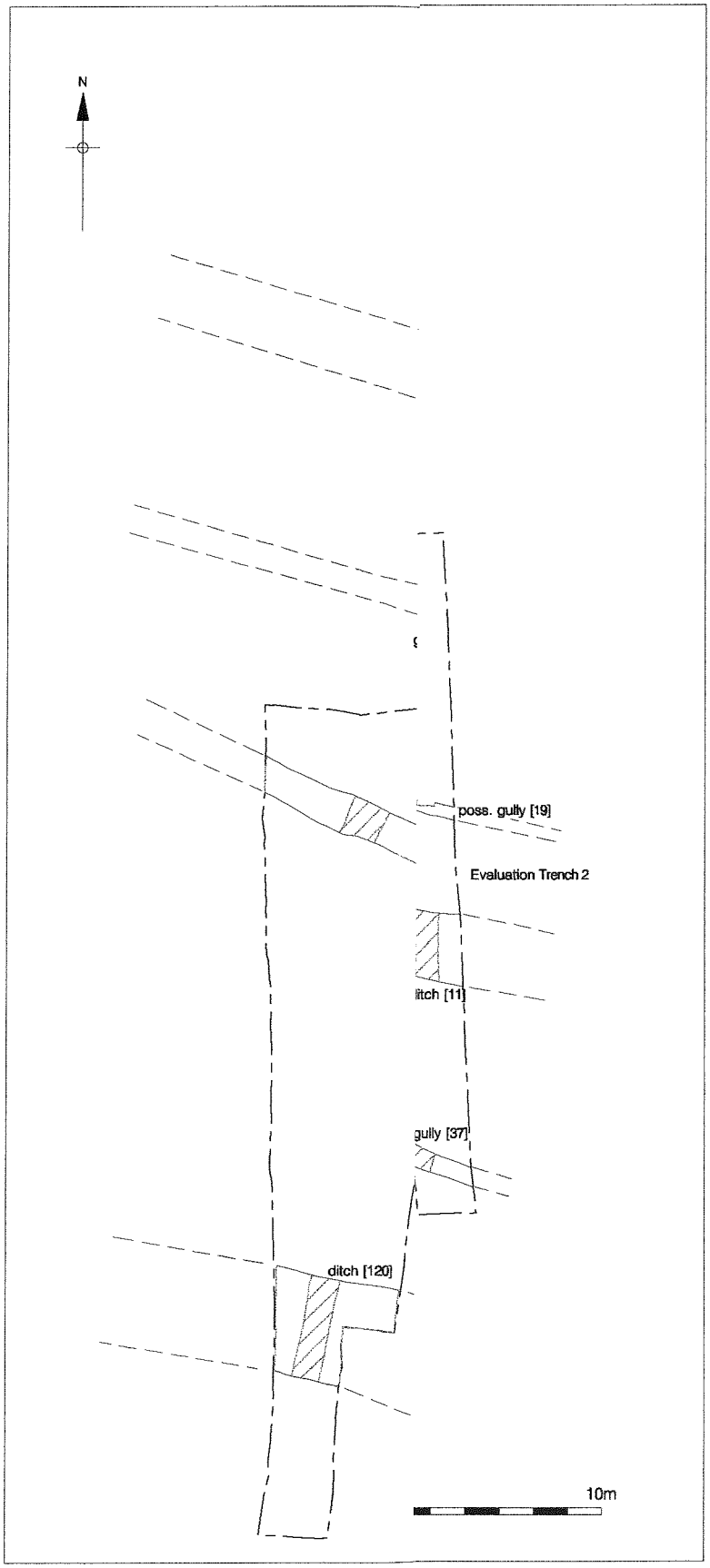


Figure 3
Phase 2
1:200



KEY

Sondages across ditches

conjectured line

Figure 4
Phase 3
1:200

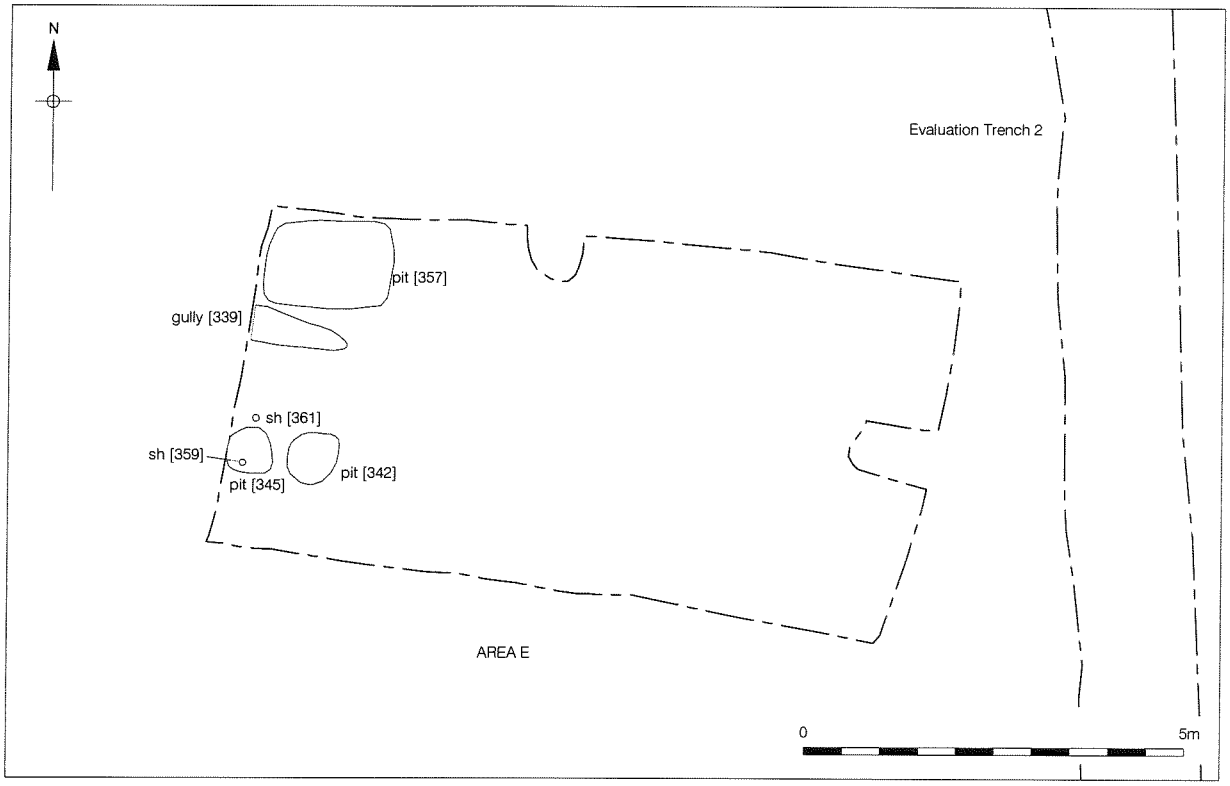
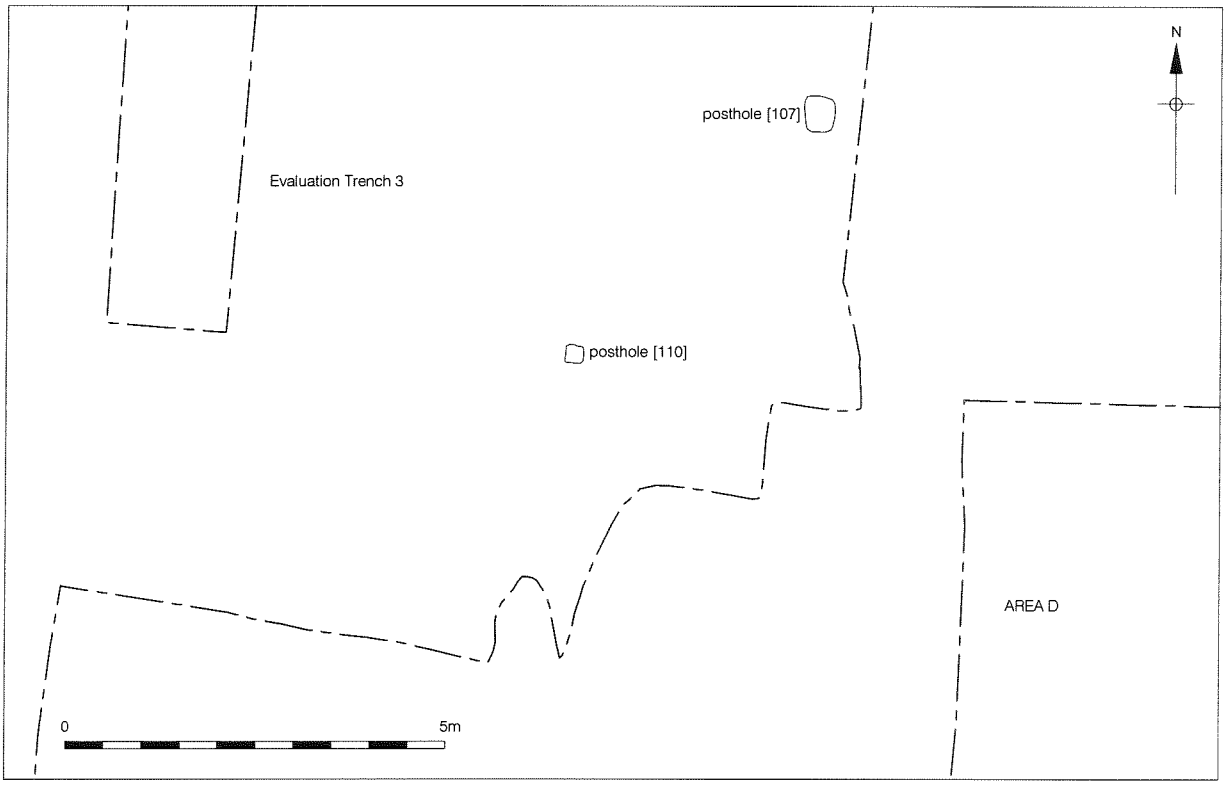
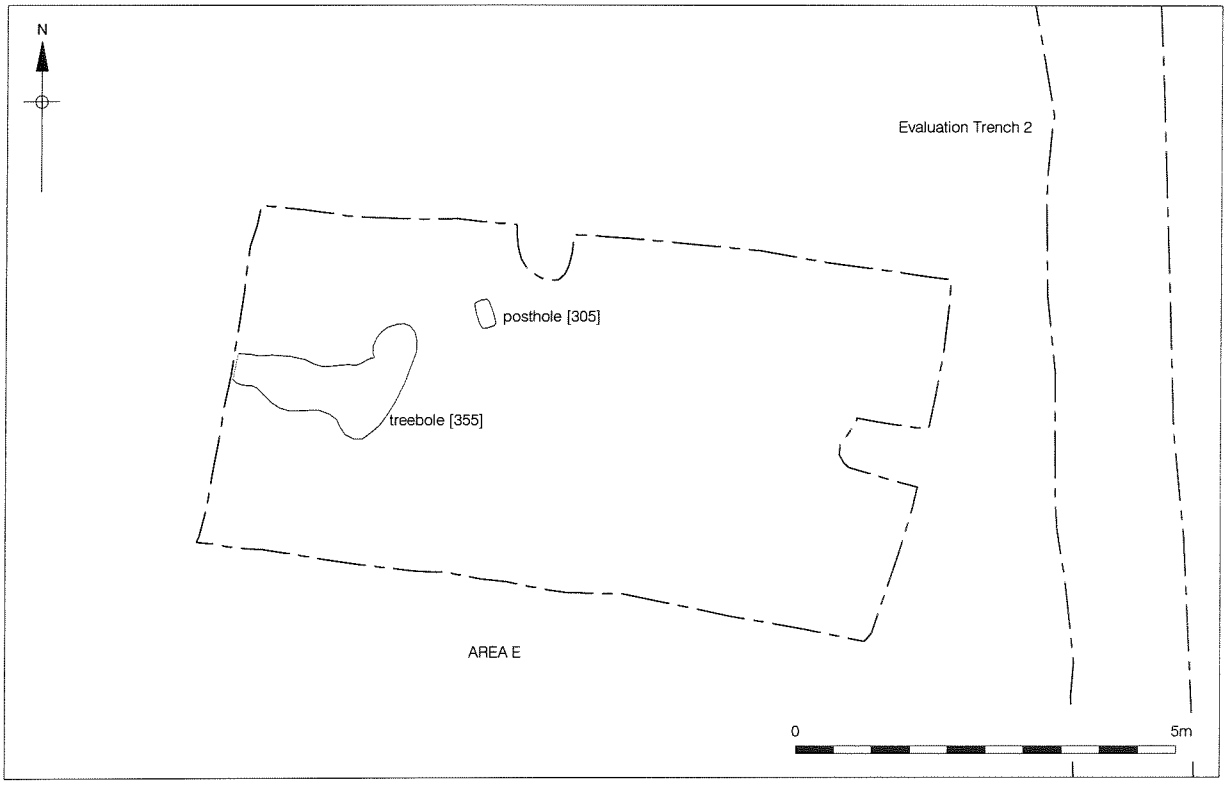


Figure 5
Phase 4
1:100



Phase 5: Area A



Phase 5: Area E

Figure 6
Phase 5
1:100

8 ORIGINAL AND REVISED RESEARCH OBJECTIVES

8.1 Original Research Objectives

8.1.1 The original research objectives of the excavation are listed below along with a summary of the potential for the archaeological evidence recovered from the site to answer these questions.

8.2 Identify the date and nature of archaeological features on the site and what these can tell us about previous land use, specifically during the later prehistoric through to the late Roman period.

8.2.1 The earliest features were two postholes dating to the Bronze Age, suggesting occupation activity within the site. There was no indication of Bronze Age land use as these postholes formed no discernible pattern.

8.2.2 There was no direct dating evidence Iron Age activity. However a series of Roman gullies and ditches aligned on the same east-west alignment as the late Iron Age ditch found at the Hospital site, suggests that this field system was established in the late Iron Age period and gradually silted up during the Roman period.

8.2.3 The pits dated to the early Saxon period contained domestic rubbish indicating settlement on or in the vicinity of the site. This is supported by the presence of daub fragments retrieved from the site, suggesting wattle and daub structures in the immediate area.

8.3 Is there evidence for permanent occupation during the later prehistoric through to the late Roman period?

8.3.1 There is evidence of agricultural land utilisation from the later prehistoric through the Roman period, though not necessarily that of permanent occupation. The Roman ceramics recovered from the excavation date from 43 AD through to AD 370.

8.4 Is there evidence for continuity between the periods identified during the evaluation?

8.4.1 There is no evidence for unbroken continuity between the periods identified on the evaluation. The ceramic evidence shows Late Bronze Age-Early Iron Age activity then early Roman through to 4th century fabrics. From the late 4th century there is another break in the sequence until early Saxon fabrics appear dating to around 450-650 AD.

8.5 What activities were conducted on site?

8.5.1 There was no firm evidence to establish what activities were being conducted on the site during late Prehistory. The Bronze Age post holes are indicative of settlement in close proximity to the site though the actual function of these features, whether building or fence, could not be ascertained.

8.5.2 During the early Romano-British period the site was divided up by ditches into strips following the contours of the hill on a east-west alignment. These most probably represent field boundaries. Building materials recovered do however indicate substantial structures nearby. The forms recovered included two fragments of combed and scored box flue suggesting the construction of a heated room close to the study site.
The environmental record shows a relatively high amount of charcoal in the fills of the gullies suggesting some sort of human activity, involving the use of fire took place.

8.5.3 A comparatively large amount of slag was collected from the site, (1028g). This included possibly Iron Age run slag and a smithing hearth bottom indicating metalworking. Unfortunately the context from which the material was derived, (318), appears to have been a colluvial layer.

8.5.2 Cartographic evidence shows that the site became open farmland outside the post-medieval town of Gravesend.

8.5.3 A Victorian workhouse was constructed in the middle of the site, in an area where archaeological remains were preserved in situ.

8.6 How does the use of the site relate to the sites location overlooking the Thames with access to a range of landscape types

8.6.1 During prehistory the ridgeline on which the site is set would have been an important trackway along the southern bank of the River Thames. The chalk from which the ridgeline is formed would have been a readily available source of flint for knapping and the diversity of the landscape would also have been rich in flora and fauna encouraging hunting, fishing and the gathering of foodstuffs.

8.6.2 With the clearance of the woodland that would have originally flanked the ridge way it meant that it was now possible to till the light, fertile soils. Prior to the development of modern Gravesend the study site would have provided a commanding view of the river, giving it a possible strategic importance.

8.6.3 The Thames would have been an important trade route, not only travelling up river heading way inland into the heart of Britain, but also down stream and across to the continent. This continental trade would have become increasingly important with the development of Londinium and Gravesend location on the Thames would have helped it flourish in the Roman period. The archaeology shows that in this period there was an increase in the population and sizable masonry buildings were constructed. The evidence from the site indicates that was outside the town, probably being used for farming. The lack of cereal grains from the environmental record suggests that the farming on the study site probably took the form of animal husbandry.

8.7 How do the results of the excavation relate to known archaeological activity in Gravesend, specifically the recent excavations at Gravesend Hospital, and the region generally.

8.7.1 Prior to the excavations at Gravesend Hospital, across the road from the Stuart Rd study site, there was no known prehistoric or early Saxon activity within the town of Gravesend. The evidence collated from the excavations at Stuart Road tie in extremely well with that from the Hospital site and a watching brief carried out at 100-102 London Rd.

8.7.2 The London Rd watching brief, just to the west of the site and upon the ridge way produced Bronze Age flints in two small pits. Colluvial layers containing prehistoric struck flints were found at both Stuart Rd and the Gravesend Hospital site.

8.7.3 A large east-west aligned boundary ditch, was discovered on the Hospital site(KGEH 04), dated to the late Iron Age/early Roman period. The same ditch was picked up in Trench 4 of the Stuart Rd evaluation. It was similar in size shape to the large ditch recorded to the south of the Stuart road site.

8.7.6 Just to the south of the site lies Watling Street and to the east is St George's Centre, a five acre site with Roman ditches, enclosures and a N-S aligned road. Though the site was dug in the late 1970s, unfortunately no report has been published on it as yet.

8.7.7 Three kilometres to the south-west of Gravesend, along the line of Watling Street, lies the Roman town and religious complex of Springhead, (Vagniacae), where excavations have unearthed two square and three rectangular temples. Associated with this are two cemeteries, one just outside the town and the other at nearby Pepperhill.

8.7.8 On the Gravesend and North Kent Hospital site seven burnt pits, interpreted as smoking pits, were discovered. Archaeomagnetic dating conducted on two of the pits placed them in the early Saxon period at between 485-510 and 500-530 AD.

Revised Research Questions

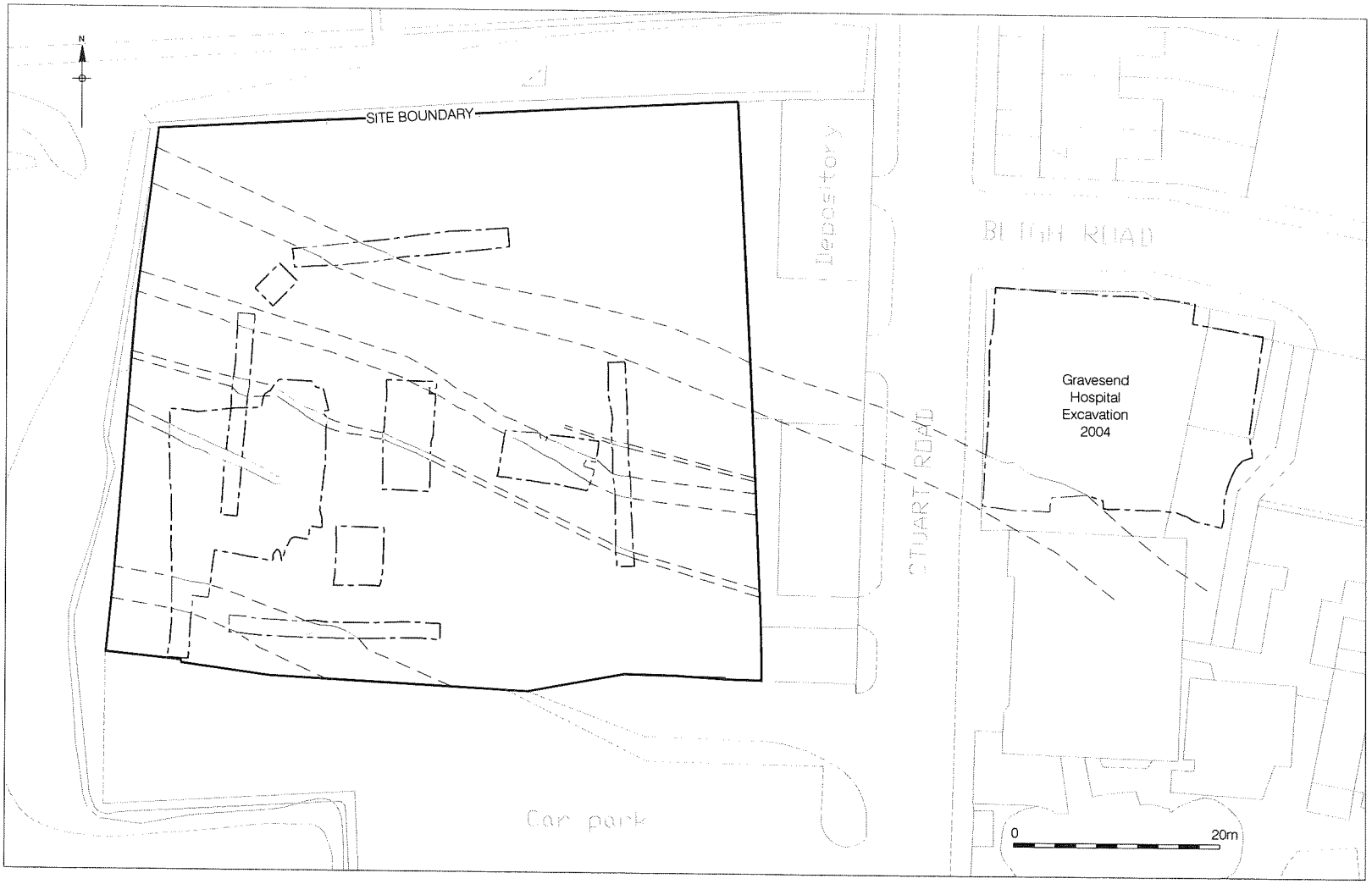
8.8 What does the combined evidence from the Hospital site and Stuart Road indicate about land use in the Roman period?

8.8.1 The v-shaped ditches found in the south of the Hospital site and at the north of Stuart Road were very similar in size and shape and conjecturally align (Fig. 7). The ditch at the Hospital site was thought to bound a Roman settlement to the south however at Stuart Road similarly aligned ditches and gullies were found to the south show there was a Roman field system to the south of this ditch. Further work should be undertaken to achieve closer dating and understanding of the chronology of these ditches.

8.9 What does the combined evidence from the Hospital site and Stuart Road suggest about Saxon occupation of the area?

8.9.1 Further work should be done on comparing the possibly anomalous archaeomagnetic dates of the fire pits at Gravesend Hospital, with the pottery dates from the pits at

Stuart Road. The scientific dating of the fire pits produced an early Saxon date although no early Saxon pottery was recovered from the Hospital site. The Stuart Rd pottery dates should be refined to assess the contemporaneous activities on both sites and the possible existence of an early Saxon settlement in the vicinity.



KEY

Roman ditches and gullies

Figure 7
Conjectural line of Roman ditch found at
Gravesend Hospital (KGEH04) and
Stuart Road Excavation (KSRG04)
1:625

9 CONTENTS OF THE ARCHIVE

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Sections		8
Photographs:	Colour slides:	72
	Black and white:	72

9.2 THE FINDS

Pottery	1 box
Ceramic building material	2 boxes
Animal bone	3 boxes
Lithics, stone material	1 box
Glass	1 bag
Small finds	1 box
Environmental samples	26 boxes

10 IMPORTANCE OF THE RESULTS, FURTHER WORK AND THE PUBLICATION OUTLINE

10.1 The archaeological investigations on land at Stuart Rd, Gravesend demonstrated the presence of prehistoric, Roman, early Saxon, post-medieval and 19th century archaeological deposits and structures. The early Roman field system and evidence for early Saxon settlement are of local and possibly regional importance because so little of Gravesend has previously been excavated.

10.2 It is proposed that KSRG 04 will be published together with the adjacent excavation KGEH 04 within a PCA monograph covering PCA excavations in northern Kent. The publication will detail the evidence for the prehistoric, Roman, early Saxon and post-medieval activities on the site and their local significance.

10.3 The publication report will include the following topics:

- The background to the archaeological investigations
- The geology and topography of the area
- The archaeological and historical background
- The archaeological evidence

  This will include a description of the archaeological remains focussing on the evidence for Roman agricultural land use and possible early Saxon settlement, in comparison with the Hospital site and nearby excavations.

Specialist reports which will be integrated into the text include:

- The buildings and their constituent materials

  It is recommended that the roller stamped box-flue tiles are further researched.

- The pottery assemblage

  The prehistoric, Roman and early Saxon pottery will be discussed in the publication.

- The Lithics

  A description of the lithic assemblage should be included in the publication.

- The environmental samples

  No further analytical work is necessary on the environmental assemblage.

- The animal bone

  The faunal assemblage is small and no further analytical work is necessary, but it should be included in the discussion.

11 ACKNOWLEDGEMENTS

11.1 Pre-Construct Archaeology Limited would like to thank Duncan Hawkins of CgMs Consulting for commissioning the work on behalf of Bellway Homes.

11.2 The author would like to thank David Divers and Tim Bradley, the project managers for their advice and assistance. Thanks are also due to Fiona Keith-Lucas who supervised the first phase of the excavation and to the excavation staff: Tony Baxter, Stella Beckerman, Ireneo Grosso, Chris Rees and Lisa Yeoman. Thanks are also due to Natalie Barratt and Graham Sherwood the surveyors. Finally, thanks to Philip Armitage, Barry Bishop, John Brown, Chris Jarret, Lynne Keys, Malcolm Lyne, Rebecca Lythe and Louise Rayner for their assessments, Hayley Baxter for the illustrations and Lorraine Darton for project management and editing.

12 BIBLIOGRAPHY

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Soiltec Laboratories Ltd. 2002. A Report on a Site Investigation at Stuart Road, Gravesend, Kent. Unpublished report.

APPENDIX 1: CONTEXT INDEX

CONTEXT	TYPE	DESCRIPTION	PHASE	AREA	CO-ORDINATES	SAME AS
100	Layer	Topsoil	6	A & B		310
101	Layer	Colluvial	2	B		
102	Layer	Natural Silty Sand	1	B		116, 311, 321 & 351
103	Layer	Natural Chalk	1	B		117 & 328
104	Fill	Fill of 105	3	A	95/215, 100/215, 100/210	
105	Cut	Ditch	3	A	95/215, 100/215, 100/210	
106	Fill	Fill of 107	6	A		
107	Cut	Posthole	6	A		
108	Layer	Post Med. Layer	6	A	105/220, 110/220	
109	Fill	Fill of 110	6	A	105/205	
110	Cut	Posthole	6	A	105/205	
111	Layer	RB Layer	3	A	105/215, 105/220, 110/215, 110/220	
112	Fill	Fill of 113	2	A	105/215	
113	Cut	Posthole	2	A	105/215	
114	Fill	Fill of 115	2	A	105/215	
115	Cut	Posthole	2	A	105/215	
116	Layer	Natural Silty Sand	1	A	95/205, 95/215, 100/195, 100/205, 100/215, 105/205, 105/220, 110/205, 110/220	102, 311, 321 & 351
117	Layer	Natural Chalk Marl	1	A	95/205, 95/210, 100/195, 100/200, 100/205, 100/210	103, 328
118	Layer	Natural Sandy Clay	1	A	100/210, 105/205, 110/220	
119	Fill	Fill of 120	3	A	100/195, 100/200	
120	Cut	Ditch	3	A	100/195, 100/200	
121	Fill	Fill of 122	3	A	110/215, 110/220	
122	Cut	Ditch	3	A	110/215, 110/220	

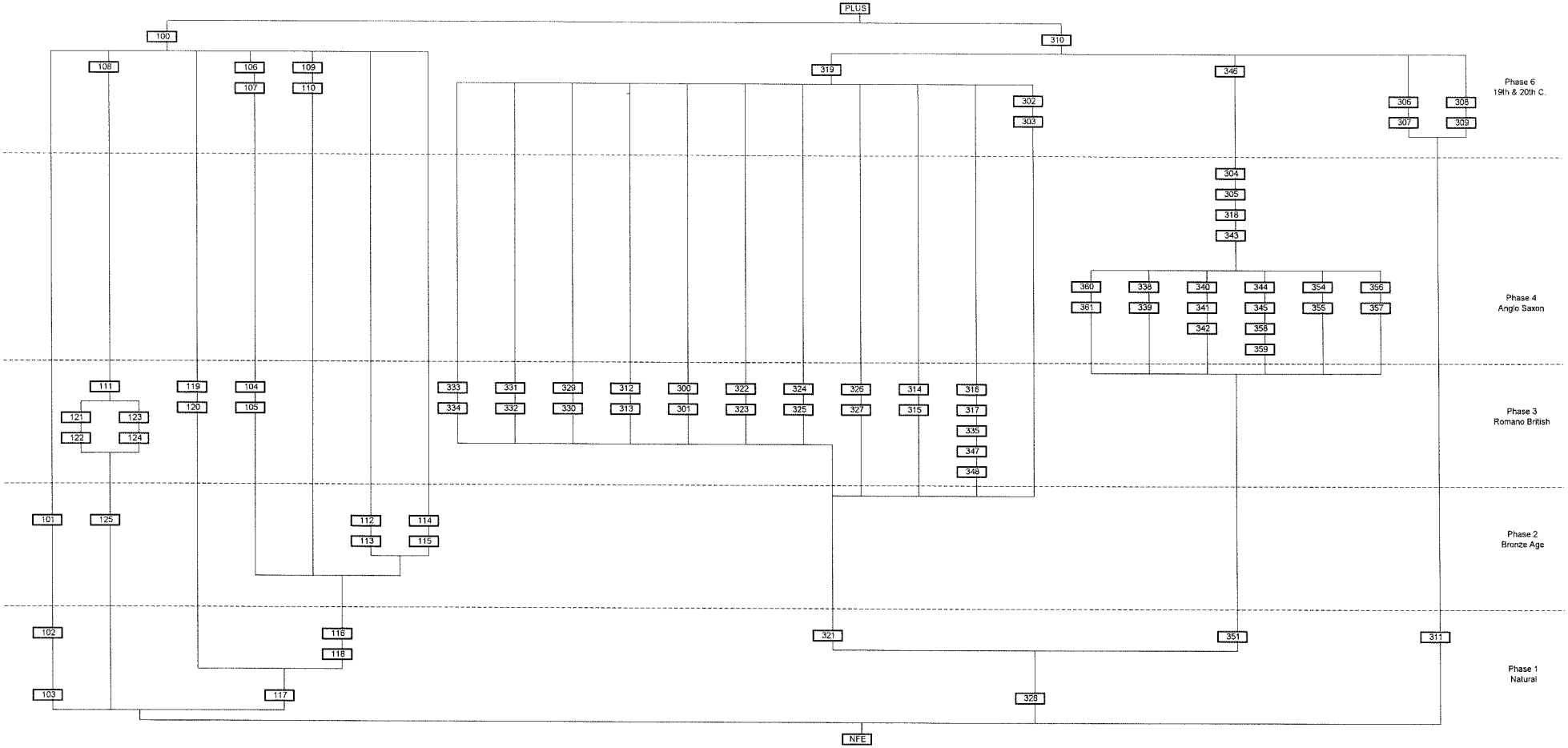
123	Fill	Fill of 124	3	A	110/220	
124	Cut	Pit	3	A	110/220	
125	Layer	BA Layer	2	A	105/215, 105/220, 110/215, 110/220	
300	Fill	Fill of 301	3	C		
301	Cut	Ditch	3	C		
302	Fill	Fill of 303	6	C		
303	Cut	Tree Throw	6	C		
304	Fill	Fill of 305	5	E		
305	Cut	Posthole	5	E		
306	Fill	Fill of 307	6	D		
307	Cut	Posthole	6	D		
308	Fill	Fill of 309	6	D		
309	Cut	Posthole	6	D		
310	Layer	Topsoil	6	C,D & E		100
311	Layer	Natural Sandy Clay	1	D		102, 116, 321 & 351
312	Fill	Fill of 313	3	C		
313	Cut	Posthole	3	C		
314	Fill	Fill of 315	3	C		
315	Cut	Posthole	3	C		
316	Fill	Fill of 317	3	C		
317	Cut	Posthole	3	C		
318	Layer	Plough soil	4	E		
319	Layer	Subsoil	6	C		346
320	Void					
321	Layer	Natural Sandy Clay	1	C		102, 116, 311& 351
322	Fill	Fill of 323	3	C		
323	Cut	Posthole	3	C		

324	Fill	Fill of 325	3	C	
325	Cut	Posthole	3	C	
326	Fill	Fill of 327	3	C	
327	Cut	Posthole	3	C	
328	Layer	Natural Chalk Marl	1	C	103 & 117
329	Fill	Fill of 330	3	C	
330	Cut	Posthole	3	C	
331	Fill	Fill of 332	3	C	
332	Cut	Stakehole	3	C	
333	Fill	Fill of 334	3	C	
334	Cut	Stakehole	3	C	
335	Layer	RB Layer	3	C	
336	Void				
337	Void				
338	Fill	Fill of 339	4	E	
339	Cut	Beam Slot	4	E	
340	Fill	Fill of 342	4	E	
341	Fill	Fill of 342	4	E	
342	Cut	Pit	4	E	
343	Layer	AS Layer	4	E	
344	Fill	Fill of 345	4	E	
345	Cut	Pit	4	E	
346	Layer	Subsoil	6	E	319
347	Fill	Fill of 348	3	C	
348	Cut	Pit	3	C	
349	Fill	Fill of 350	3	C	
350	Cut	Ditch	3	C	
351	Layer	Natural Sandy Clay	1	E	102, 116, 311 & 321

352	Fill	Fill of 353	3	E
353	Cut	Ditch	3	E
354	Fill	Fill of 355	5	E
355	Cut	Tree Bole	5	E
356	Fill	Fill of 357	4	E
357	Cut	Pit	4	E
358	Fill	Fill of 359	4	E
359	Cut	Stakehole	4	E
360	Fill	Fill of 361	4	E
361	Cut	Stakehole	4	E

APPENDIX 2: SITE MATRIX

KSRG 04
Phased Matrix



APPENDIX 3: ASSESSMENT OF THE PREHISTORIC POTTERY

Louise Rayner

INTRODUCTION

A small assemblage of 71 sherds (541g) was examined for dating and assessment. The assemblage was recorded in line with recommendations of the Prehistoric Ceramic Research Group (PCRG 1997) and transferred to a digital data file. The assemblage was recovered from 18 contexts and some unstratified material.

Each sherd was examined to identify the fabric, and where possible the form it derived from. Any decoration and surface treatments present were also recorded, along with sherd count, weight, state (abrasion, burnt, sooting, residue) and general comments noted. The condition of the assemblage is generally poor with mostly abraded and fragmentary sherds and few feature sherds present. Most of the contexts produced only a small number of sherds.

SUMMARY

The pottery recovered was predominately flint-tempered (FLIN1, FLIN2, FLIN3), although shell-with-flint (SHFL) and sandy-flint sherds (QUFL) are also present. This material is likely to date to the late 2nd – early 1st millennium BC, predominately on the basis of these fabric types, and also the presence of a few feature sherds including an unstratified rim sherd probably from a bipartite jar; carinated shoulder sherds in [24] and [47]; an everted rim sherd in [300].

Unfortunately much of this prehistoric material was recovered re-deposited in later features, especially the Roman ditch system, and in two contexts examined Roman pottery is also present: [104] Roman reduced ware with burnished decoration and in [335] a Roman shell-tempered ware, possible North Kent Shell (NKSH).

The pottery from features assigned to phase 2 (prehistoric) are limited to contexts: [25], [34] and [125] all from a brickearth-like deposit and all fragmentary and producing mostly single sherds. The only other feature from this period that produced pottery is [114], fill of posthole [115] but this was also very fragmentary (only 1g present).

POTENTIAL & FURTHER WORK

Given the fragmentary and largely re-deposited nature of the of the assemblage, there is little potential for the pottery to address any research questions or contribute to the understanding of the site beyond evidencing prehistoric activity. There is no further work recommended. Data from the spot-dating could be used to contribute to a publication text if required.

BIBLIOGRAPHY

PCRG 1997 *The Study of Later Prehistoric Pottery: general policies and guidelines for analysis and publication*, reprint Prehistoric Ceramics Research group Occasional Papers 1 and 2, revised edition, Oxford

APPENDIX 4: ASSESSMENT OF ROMAN POTTERY

Malcolm Lyne

1. Introduction

The site yielded 132 sherds (1770 gm) of Roman pottery from 13 contexts: most of the sherds date between the second and fourth centuries.

2. Methodology

All of the assemblages were quantified by numbers of sherds and their weights per fabric. These fabrics were classified using a x8 magnification lens with inbuilt metric graticule and artificial light source in order to determine the natures, forms, sizes and frequencies of added inclusions. The fabric codings are those created by Museum of London Archaeological Services for Roman fabrics from the city and its environs.

3. The Assemblages

Two ceramic phases can be distinguished in the Roman assemblages from the site. The earlier of these is represented by the light brown sandy silt layer 335, layers 49 and 111 and Pit 124 fill context 123 and is of late 1st to early 3rd century date. The largest of these Early Roman assemblages is that from Context 335 (77 sherds) and, although small, indicates a total predominance of Thameside products; including sandy grey wares, BB2 and fine Upchurch and Hoo St Werburgh vessels.

The small amounts of Late Roman wares come from the fill of Ditch 11 and demolition debris Contexts 20 and 21. They show a continued predominance of late Thameside products but with Alice Holt/Farnham greywares making an appearance. There is no ceramic evidence for continuing Roman occupation after AD370.

4. Recommendations

The pottery assemblages from Contexts 10, 20 and 335 should be written up in note form with use of type references taken from Monaghan and Lyne and Jefferies's corpora of Thameside and Alice Holt products (1987 and 1979 respectively) instead of illustration.

3.2 Bibliography

Lyne, M.A.B., Jefferies, R.S. 1979 *The Alice Holt/Farnham Roman Pottery Industry*, CBA Res Rep **30**

Monaghan, J. 1987 *Upchurch and Thameside Roman Pottery. A ceramic typology for northern Kent, first to third centuries A.D.*, BAR (Brit) Ser **173**

3.3 Fabrics

AHFA, Late Alice Holt/Farnham greywares, BB2, Wheel-turned Black Burnished Ware from North Kent, Early Roman Sand-tempered wares, GROG, 'Belgic' grog-tempered wares, HOO, Hoo St Werburgh fine, white-slipped oxidised wares, MISC, Miscellaneous wares, NKFW, Grey Upchurch finewares, OXID, Miscellaneous oxidised wares, PATCH, Patchgrove ware, SAMLZ, Central Gaulish Lezoux Samian, SAND, Miscellaneous sand-tempered greywares, TSK, Kent Thameside greywares, TSKSC, similar but with superficial surface oxidation,

3.4 Catalogue

Context	Fabric	Form	Date-range	No of sherds	Weight in gm	Comments
+	TSK SC	Jar		1	12gm	
10	AHFA	1A.15 Store-jar	270-350	2	52	Fresh
	TSK	Jar	150-370	1	38	
	TSKSC	Jar	180-370	1	8	
			270-370	4	98gm	
20	AHFA	6A-4 dish	300-370	1	45	Rather coarse
	BB2		110-370	7	58	
	GROG	jar	270-400	1	11	
	TSK	necked-jar	270-370	9	67	
	TSKSC	necked-jar	270-370	4	90	
			300-370	22	271gm	
21	TSK	Jar	150-370	2	14	
	TSKSC	2F jar	180-370	2	36	
				4	50gm	
49	BB2	Jar base	110-200	1	40	
	GROG	Necked jar	L.I.A.-AD70	1	12	
			L.I.A.-200	2	52gm	
108	Tile			1	1gm	
111	SAMLZ	Dr.33	120-200	1	4gm	
123	ERS	Jar	43-80	1	7	Fresh
	PATCH	Store-jar	30-270	1	38	Abraded
			43-80	2	45gm	
318	TSK	Store-jar etc	150-370	8	305	
	Tile			1	12	
				9	317gm	
319	BB2		110-370	2	3	
	HOO		43-250	1	8	

	TSK	Closed	70-370	2	14	
				5	25gm	
335	BB2	2F jar	120-200			
		4H1-4 bowl	120-180			
		5J dish	110-300	30	268	
	GROG			5	62	
	HOO	1B5 flagon	100-150	2	6	
	MISC			1	3	
	NKFW	indented bkr	140-260	3	9	
	OXID	flagon base		1	38	
	SAMLZ	Dr33	120-200	1	14	
	SAND	Cornice rim bkr	130-250	1	3	Scale décor
	TSK	Store-jar				
		2F jar	110-250			
		4H5-7 bowl	170-250	26	436	
	Tile			7	28	
			100-250	77	867gm	
343	BB2	2F jar	150-250 but residual in context	2	14gm	
352	OXID	Closed		1	4gm	
356	ERS		43-80 but could be Early Saxon	1	10gm	Fresh

APPENDIX 5: ASSESSMENT OF THE POST-ROMAN POTTERY

Chris Jarrett

Introduction

A small sized assemblage of pottery was recovered from the site (1 box). Most sherds show no or little evidence for abrasion, but the fragmentary nature of the assemblage means that very few vessel forms could be deduced from the size of the sherds and no complete vessel profiles could be reconstructed. All the individual contexts produced small groups of pottery (under 30 sherds).

All the pottery (34 sherds and none are unstratified) was examined macroscopically and microscopically using a binocular microscope (x20), and recorded in an ACCESS 2000 database, by fabric, form, decoration, sherd count and estimated number of vessels, using standard Canterbury Archaeological Trust fabric codes and dating. The pottery is discussed by its types and its distribution.

The pottery types

The pottery is of an early Saxon and post-medieval date and is listed below by period, fabric type and the forms present.

Saxon

There are a total of 30 sherds of early Saxon pottery.

Organic or chaff-tempered (fabric EMS4), dated 575-750 AD. Twenty-seven sherds, forms: small rounded bowl, small and medium rounded jars. The chaff-tempered wares are as a fine sandy fabric and equates to the Museum of London CHSF fabric.

Fine sandy ware (EMS1D), dated 450/75 - 675/700 AD. One sherd, form: uncertain vessel shape, possibly sandstone tempered.

Sand and flint-tempered (EMS1F), dated 450-650 AD. A single sherd from an uncertain vessel form.

Post-Medieval

A total of four sherds of post-medieval pottery are recorded ranging in date between 1575-1900.

Delftware

English tin-glazed earthenware (PM9), 1575-1775. One sherd, form: probable albarello.

Imported pottery

German grey Westerwald stoneware with cobalt and manganese dated 1650/75 - 1725/50. One sherd present from a possible rounded jug with moulded leaf and circular spiral decoration.

Industrial finewares

White earthenwares, with transfer-print (fabric LPM14), dated c.1825-1900. One sherd, form: teacup with passion flower transfer-printed design.

Unidentified

Miscellaneous unidentified, ?English (PM100), 1500-1900. One sherd, from: possible jug. High fired white earthenware with clear and red quartz and olive green-glaze. Possibly 16th or 17th-century.

DISTRIBUTION

The distribution of the pottery is discussed by period. Table 1 shows what contexts, produced post-Roman pottery, the size of the group and the deposition date of the pottery.

Saxon

The largest amount of early Saxon pottery was recovered from the plough soil [318] as fifteen sherds representing seven vessels. Single sherds of Fine sandy ware (EMS1D) and Sand and flint-tempered (EMS1F) are present but the rest of the pottery are chaff-tempered wares (EMS4) as some five possible vessels with only the diagnostic rim of a small rounded bowl present, the other sherds probably from jar shaped vessels. A possible deposition date of 575-650 AD is suggested for this group of pottery. An abraded sherd of chaff-tempered

pottery is present in fill [121] of ditch [122]. The fourteen sherds of pottery from fill [340] of pit [342] are all as chaff-tempered ware in the form of jars and include the rims of a finely made small rounded example and a more coarsely made medium rounded jar. A deposition date of c.575-750 is suggested for the pottery in this pit.

Post-medieval

Al the post-medieval pottery is derived from one context, layer [108] with a single shed of a transfer printed teacup (LPM14) indicating deposition in the mid 19th-century.

Context	Size	Suggested deposition date
108	S	1825-1900
121	S	575-750
318	S	575-650
340	S	575-750

Table 1. KGEH 04, distribution of pottery showing the size of the group and its deposition date. S: small (1-30 sherds), M: medium (31-100 sherds), L: large (over 101 sherds).

Significance Of The Collection

The pottery is significant on a local level for the presence of early Saxon ceramics. The post-medieval pottery is not significant at all, being rather mundane and does not add to the knowledge of ceramic studies for this period.

Potential

The pottery does have the potential to date the stratigraphy. The early Saxon pottery is of interest for indicating activity in this area of Gravesend and adds to the evidence for the pattern of Saxon settlement along the Thames. On the adjacent Gravesend and North Kent Hospital excavation (site code: KGEH 04) eight smoking pits were uncovered and two pits were archaeomagnetically dated to 485-510 A.D. and 500-530 A.D. However, these features only produced Romano-British pottery and one single sherd of Saxon chaff-tempered pottery was recovered from the site. The pits on the Hospital site would appear to date earlier than the pottery from the KSRG 04 site, but both excavations indicate continuity for early Saxon activity in the vicinity.

Research Aims

- How does the early Saxon pottery from KSRG 04 site compare to other contemporary sites in the Gravesend vicinity?

Recommendations For Further Work

It is recommended that a publication report is written on the early Saxon pottery and three pottery illustrations are recommended to supplement the text.

APPENDIX 6: ASSESSMENT OF THE BUILDING MATERIALS

John Brown

1.0 METHODOLOGY

1.1 The building materials were examined using the London system of classification. A fabric number is allocated to each object, specifying its composition, form, method of manufacture and approximate date range. The material was examined under magnification (x20), quantified and weighed. A description of the fabrics appears at the end. Examples of the fabrics can be found in the archives of PCA and/or the Museum of London.

1.2 Quantification of items was undertaken and the data recorded onto pro-forma record sheets, and/or entered onto a computer database (Microsoft Access 2000). After analysis the common fabric types were discarded, with a type sample kept for archive. Unusual pieces or uncommon fabrics were also kept for archive.

2.0 QUANTITY AND CONDITION

2.1 Total No. CBM boxes: 4
Total no contexts producing Building material: 17
Total Count: 161
Total Weight kg: 13.886

2.2 All of the material was fragmentary, much was abraded and no pieces showed at least two fully quantifiable dimensions.

3.0 DISCUSSION

3.1 The majority of the material assessed consisted of Roman ceramic building materials. The remainder of the material was comprised of a few fragments of stone, and very small numbers of post-medieval tile. Materials of different periods and forms are discussed below. Fabrics that appear both in Medieval and Post Medieval forms are described in the first instance and noted in the second.

3.2 **Roman Fabrics:** 2452, 2459a, 3004, 3006 (London fabric group 2815); 2459b (?Essex), 2454 (Eccles, Kent fabric group); 3023 (Radlett, Hertfordshire); 3238 (N Kent/Weald).

Roman fabrics were similar to those found in London, with the most common types belonging to London fabric group 2815. These fabrics were produced at various kiln sites in Greater London, particularly along Watling Street between London and St Albans, between the mid 1st and 3rd century. The other fabrics all returned less than 10 fragments each. A Few pieces of Eccles type fabrics were noted, produced in Kent from 50 – 80 AD. This fabric was generally found with later fabrics such as the Radlett group tiles, suggesting that Roman occupation was established after 100 AD.

3.3 **Roman Forms:**

Forms are defined by Brodribb (1987). Most fragments were abraded and non-diagnostic except that tiles were distinguished from bricks depending on their depth. The lack of dimensions prevented specific definition of brick forms. Diagnostic types included tegulae and imbrex tiles, used in combination for roofing. Two fragments of combed and scored box flue tiles, in Greater London fabrics, were observed. One piece from [111] was roller-stamped with a diamond or chevron design. The presence of flue-tile fragments indicates the construction of a heated room at some point during the Roman era.

3.4 **Other Roman building materials:** 3101 (mortar)

Two fragments of lime-based mortar with coarse sand were recovered from [335]. One fragment was similar to pozzolonic mortar produced by the Romans, and was possibly finely plastered or whitewashed on the surface.

3.5 **Stone fabrics:** 3105(Kentish ragstone); 3111 (ferruginous sandstone); 3115 (chalk)

Small amounts of stone were recovered, including two fragments of Kentish Rag, a hard limestone unsuitable for freestone, but used in great quantities in the southeast as a rubblestone during the Roman period. Typically it was used as rough coursing in masonry walls, bonded at intervals with brick string courses.

Ferruginous sandstone outcrops in the Weald area of Kent and was used both as rubblestone, and as a source of iron ore for a significant iron smelting industry during

the Roman period. Only one small fragment of ferruginous sandstone was recovered from a layer [335].

Chalk was readily available from the South Downs, and along the Thames Valley towards Rochester. As a building stone in London it was typically used as rubble core for walls, or as a foundation material, useful for absorbing ground water and preventing damp. Only two fragments of abraded chalk were recovered, possibly representing natural hill wash deposits rather than procurement of building material.

3.6 **Roman – Group discussion**

The largest group was from a phase 3 layer [335], and accounted for over half of the material by number and by weight. In this group a high proportion of roof tile was noted, indicating roof debris, possibly related to an earlier structure than the timber structure/building implied by postholes in the same phase. One tile fragment retained an edge showing a tally mark 'I' inscribed perpendicular to the tile face. The fragments of mortar and various stone fabrics recovered from the site also came from this context.

3.5 **Early Saxon Period – Reused Roman material; Daub fragments:** 3102

3.6 Some of the Roman material was abraded and residual in later contexts. Small fragments of brick and tile were observed in contexts associated with early Saxon levels, and may represent reuse of limited amounts of CBM in structural elements such as packing for posts or hearths.

3.7 Very small amounts of daub were observed. Daub is a mud-like material usually consisting of local brickearth/mud deposits to which extra tempering material has been added. It is typically used as a render or weatherproofing for wooden structures. It was used as building material from the Neolithic up to the post-medieval period. Daub is generally easily absorbed back into the soil matrix except when it has been 'fired' by high temperatures (for instance from the burning down of a timber structure) and the surviving material can only be considered as indicating presence or absence of wattle and daub structures.

3.8 **Medieval and post-medieval fabrics:** 2271, 2276 (Greater London; peg)

Only three small fragments of post-medieval roof tile were recovered, all of fabric 2276. Even less evidence for medieval material was recovered, with one fragment of a peg tile in fabric 2271. Peg tile forms continued in use up until the 19th century, when they were gradually superseded by the use of Welsh slate in Greater London. Fabric 2276 represents the common type of peg tile produced during the post-medieval period in the Greater London area, using similar clay sources as fabric 2271.

4.0 CONCLUSIONS

The majority of fabrics from KRSG04 were very similar to those found in the Greater London area. Generally the range of fabrics and forms is unremarkable for the Greater London area, and reflects the fact that many building materials were transported into London from the surrounding hinterland.

4.2 The amount of material for the Roman period suggests that buildings utilising CBM were constructed in the vicinity, and could have included a heated room. Evidence for internal decoration was limited, although one fragment of mortar may have been whitewashed.

4.3 Residual Roman material is likely to have been reused on a small scale during the early Saxon period, and the presence of wattle and daub structures is suggested by the presence of daub fragments.

4.4 The lack of medieval and post-medieval material indicates that the area remained open until fairly late on in the development of the town.

5.0 RECOMMENDATIONS

5.1 The material should be compared with the assemblage from neighbouring site (KGEH04). The assemblages from both sites could be combined for any publication.

5.2 The example of roller-stamped box flue tile should be compared to the national corpus (Betts et al 1997) to see if a match can be made with recognised designs. If not it should be drawn and included in any publication.

5.3 A partial signature mark from a Roman tile was recovered from a residual context [318] and could be drawn for archive and/or publication.

6.0 DATE RANGES

6.1 The **Date range** is the earliest date for the earliest CBM within the context and the latest date of the latest CBM in the context. The **Latest Date** represents the range for the latest dated CBM fabric. The **Best-fit date** compares the latest date for the earliest CBM and the earliest date for the latest CBM. The **Deposition Date** is the suggested date of deposition for the materials in the context. Also noted is the **Size** (number of sherds) and **Weight** (grams) of each context. Groups are determined as small (1-30 sherds), medium (31-100 sherds), large (over 100 sherds), very large (over 10 boxes).

6.2 CBM BY CONTEXT WITH SIZE/WEIGHT AND DATE RANGES

Phase	Context	Size	Weight	Date range	Latest Date	Best-fit date	Deposition Date
?	10	5	976	50 160	50 160	50 160	50 - 160
?	20	14	1606	50 1500	120 250	120 160	120 -160
?	21	1	158	50 160	50 160	50 160	50 - 160
?	47	2	184	50 160	50 160	50 160	50 - 160
3	104	2	588	55 160	55 160	55 160	55 - 160
6	106	1	12	1480 1900	1480 1900	1480 1900	1480 - 1900
6	108	2	24	1480 1900	1480 1900	1480 1900	1480 - 1900
3	111	13	224	- 1666 1500	- 1666 1500	71 100	71 - 100
3	119	6	232	- 1900 1500	- 1666 1500	55 160	55 - 160
3	123	3	996	50 1666	50 1666	50 160	50 - 160
3	312	1	14	50 250	50 250	50 250	50 - 250
4	318	19	816	50 1800	1180 1800	1450 160	1450 - 1700 [R]
6	319	4	268	50 250	120 250	120 80	120 - 250 [R]
3	335	65	7428	50 350	50 350	190 80	190 - 350 [R]
4	340	1	92	50 250	50 250	50 250	50 - 250
4	342	19	58	- 1666 1500	- 1666 1500	- 1666 1500	Late Iron Age - Roman
4	343	3	210	50 250	50 250	50 250	50 - 250

Contexts in italic are samples from masonry contexts.

[I] Possibly inclusive material [r] Residual material

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Brodribb G, 1987, *Roman Brick and Tile*. Alan Sutton Publishing, Gloucester.

APPENDIX 7: ASSESSMENT OF THE SHELLFISH

Rebecca Lythe

Introduction

The following report outlines the results of the preliminary analysis of marine Mollusc remains recovered from Stuart Road, Gravesend, Kent (KSRG 04). The main aims of this report are:

1. To identify all recovered mollusc remains to genus or, when possible, species level
2. To consider their potential modes of deposition
3. To consider their usefulness as a resource to past populations

Methodology

In order to keep sampling representative and systematic, shellfish from all contexts on site were collected according to the following strategy.

For every context that contained marine molluscs, one in five of each species was recovered. Where multiple fragments of material from the same species were found, only fragments with complete umboes were counted so as to avoid over-representation of heavily fragmented individuals. The material was then sent back to the laboratory and analysed in the following way.

The Molluscs were observed with a hand-held magnifying glass and, where possible, identified to genus or species level. Numbers of individuals per species per context were then counted. As bivalvia (such as cockles and mussels) have two shells and prosobranchs (such as whelks and limpets) have one, the two classes cannot be compared directly. Consequently, all bivalve shells were assigned a value of 0.5 and all prosobranch shells were assigned a value of 1 to allow balanced comparison. These "values" were recorded in figure 2. The ecological niche occupied by each species was then identified, and hypothetical modes of deposition within the various contexts across site were postulated in light of this information. Potential uses for the marine Molluscs were then speculated upon. Changes in resource use over time were not considered owing to the small size of the assemblage.

Results

Ostrea edulis (flat oyster) was the only species of marine Mollusc found on site. The total number of shells per species per context was recorded in figure 1. The "values" of each species were also recorded in figure 1.

Figure 1: Table to show total numbers of shells and "values" per species of marine Mollusc per context.

Context Number	Context Type	Species Present	No. Shells Collected	"Value"
335		*Ostrea edulis*	1	0.5
340		*Ostrea edulis*	1	0.5

The natural habitat of *Ostrea edulis* is a marine environment, in course sediment between the spring tide low water mark and a maximum of 50m into the sub-littoral zone (Hayward *et al* 1996).

Inferences

When the natural habitat of the shellfish is considered, it becomes obvious that the assemblage cannot have been deposited naturally as the archaeological site is located inland at a considerable distance from the marine environment required by the organisms. The assemblage must therefore have been imported to site by human action. Since the marine Molluscs recovered are of an edible species, it is likely that they were brought to site as a food resource.

The total number of shells recovered from site was small (2 in total), which suggests that marine Molluscs did not form a substantial part of the diet. It is possible, however, that the bulk of marine Mollusc remains were discarded off site. Adverse preservational conditions also cannot be ruled out. It therefore remains a possibility that the dietary importance of marine Molluscs was greater than the assemblage suggests.

Bibliography

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APPENDIX 8: ASSESSMENT OF THE MAMMAL AND BIRD BONES

by Philip L. Armitage

INTRODUCTION

A total of 269 animal bone elements/fragments were submitted for assessment, of these 165 (61.3% of the total) can be identified to species and part of skeleton, and 104 (38.7%) remain as unidentified fragments.

Of the 165 identified bones 163 (98.8% of the total) are recognised as mammalian and 2 (1.2%) as bird. Six mammal and a single bird species are represented in the assemblage (note: assuming all of the ovicaprid elements are probably sheep).

Table 1 provides a summary of the numbers of identified bone elements/fragments (NISP) by taxon/species and site phase.

	Phase 2	Phase 3	Phase 4		Totals
Taxon/species					
Mammals:					
Horse		4	1		5
Cattle	1	104	6		111
Sheep/goat		32	2		34
Pig		8	3		11
Dog		1			1
Cat		1			1
LAR		3			3
Unident.mammal		73	28		101
Bird:					
Carrion crow		2			2
TOTALS	1	228	40		269

Key to Phases: 1 Prehistoric; 2 Romano-British; 3 Early Saxon

Key to Taxon/species: horse *Equus caballus* (domestic); cattle *Bos* (domestic); sheep/goat *Ovis/Capra* (domestic); pig *Sus* (domestic); dog *Canis* (domestic); cat

Felis (domestic); LAR large artiodactyl (horse/cattle sized); unident.mammal (probably cattle, sheep/goat and/or pig); carrion crow *Corvus corone*

Anatomical distributions of the animal bones by species for each of the contexts (Phases 3 and 4) are given in the archive. The archive also includes measurements taken on selected bone elements (following the system of von den Driesch 1976). There is only an isolated cattle tooth (fragmented) from Phase 2 (Bronze-Age layer [125]).

PRESERVATION AND PATTERNS OF DISPOSAL

The state of preservation of the animal bone elements/fragments from all phases is moderately good. The incidence of weathered bone is relatively low, recorded in three elements from Phase 3 and three from Phase 4, as follows:
Phase 3: 1 cattle mandible & 1 sheep/goat metatarsal, both from [119], and 1 pig femur from [104].
Phase 4: 1 cattle mandible & 1 cattle calcaneum, and 1 sheep/goat tibia, all from [318].

There are noticeable groups of scrappy (fragmented/abraded) bones from five of the contexts: Phase 3 layer [335] and ditch fills [6] & [10]; Phase 4 plough soil [318] and fill of the tree throw [354]. These groups of bone probably represent accumulations of food waste that had been casually discarded and later subjected to disturbance (attrition & re-deposition). Throughout the bone deposits at this site there appears to have been post-depositional disturbance by penetrating plant roots as evidenced by the presence on many of the specimens of distinctive dendritic root-patterns etched into the bone surface.

Several cattle bone elements from two of the Phase 3 contexts (see below) are recognised as having been previously articulated at the time of their disposal, indicating the nature of some of the discarded food waste:

The foot of a cattle foreleg is represented in the bone sample from [335] by 1 medial & 1 lateral first phalanx, 1second phalanx, and 1 third phalanx.

A cattle hock/hind-foot, also from [335], is represented by 1 astragalus, 1 calcaneum, 1 cuneiform, 1 os centrotarsale, 1 metatarsus, and 1 first phalanx.

A cattle elbow joint is represented in the bone sample from [123] by 1 radius distal epiphysis (unfused/detached), 1 radial carpal bone & 1 intermediate carpal bone.

Only an isolated bone fragment from [104] fill of ditch [105] (Phase 3) is burnt/blackened, indicating there was probably no routine burning of food debris before disposal and burial.

Evidence of dog gnawing was recorded in the following specimens/contexts (all Phase 3 Romano-British):

1 cattle phalanx I [20]
1 fragment of mammal bone [21]
1 cattle humerus [335]
1 sheep/goat radius [335]

These specimens may represent food scraps fed to pet dogs or alternatively food waste scavenged by pet/feral dogs from middens/domestic waste deposits. The skeletal remains of at least one carrion crow (represented by wing bones from [119] fill of ditch [120]) suggest discarded food waste also attracted the attention of avian scavengers at this site.

INTERPRETATION & DISCUSSION

The bulk of the animal bone from this site is recognised as discarded domestic food debris, which for Phase 3 (Romano-British period) indicates a diet predominated by beef, with mutton of secondary importance, and supplemented by pork/sucking piglet There is a surprising absence of poultry and fish bones and no evidence for the consumption of wild game or wild fowl species. This may however simply be a reflection of the relatively modest sized excavated faunal sample available for assessment.

The cattle metatarsal bone from [335] (Phase 3) is worthy of special mention as this is from an animal whose withers height is estimated to have been 140.9 cm (calculated from GL using the method of Fock 1966). Generally, Romano-British cattle fall within the size-range (withers heights) 92 to 126 cm. However, as discussed by Luff (1982), there are isolated examples of exceptionally tall and robust cattle recorded at a number of Romano-British sites, including Gadebridge Park Villa where the largest animal was 137 cm. The Stuart Rd. (KSRG04) animal is larger than the Gadebridge ox but not as tall as the remarkably large animal at Vindolanda whose withers height was estimated by Hodgson (1977) to have been 144 cm.

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Fock 1966 see von den Driesch and Boessneck

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APPENDIX 9: ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

Rebecca Lythe

Introduction

This report presents the overall findings arising out of the assessment work undertaken by Pre-Construct Archaeology Limited in connection with the proposed development at Stuart Road, Gravesend, Kent. The detailed archaeological excavation conducted by Pre-Construct Archaeology Ltd uncovered a series of archaeological features / contexts, of which 12 were sampled for their bioachaeological remains (charred and waterlogged seeds, bone, charcoal, insects, Mollusca and wood). Sample 1 was taken from [104], the fill of Romano-British ditch [105]; sample 2 was taken from [114], the fill of Bronze Age posthole [115]; sample 3 was taken from [119], the fill of Romano-British ditch [120]; Sample 4 was taken from [121], the fill of Romano-British ditch [122]; sample 5 was taken from [123], the fill of Romano-British pit [124]; sample 50 was taken from layer [318], an early Saxon plough soil; sample 51 was taken from [300], the fill of Romano-British ditch [301]; sample 52 was taken from [335], a Romano-British dump layer; sample 53 was taken from [343], an early Saxon dump layer; sample 54 was taken from [340], the secondary fill of early Saxon pit [342]; sample 55 was taken from [344], the fill of early Saxon pit [345] and sample 57 was taken from [356], fill of early Saxon pit [357].

Method:

The samples were processed by flotation and assessed using a hand-held magnifying glass. The results are presented in Table 1.

Results:

Sample 1 contains low concentrations of poorly preserved waterlogged seeds, low concentrations of poorly preserved, heavily fragmented charcoal, low concentrations of snail shells and low concentrations of poorly preserved, fragmented animal bone. The presence of charcoal and animal bone in the sample suggests that the ditch fill may consist of or contain dumped domestic waste such as the contents of a hearth or oven, produced on or near the site during the Romano-British period. The presence of waterlogged seeds suggests that the ditch contained water, either permanently or sporadically, enabling vegetation to grow in and / or around the feature. Alternatively the seeds may have been re-deposited from elsewhere as part of the backfill and preserved by the presence of water within the feature. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 2 contains low concentrations of poorly preserved waterlogged seeds, high concentrations of poorly preserved, heavily fragmented charcoal and high concentrations of snail shell. The presence of charcoal within the sample could indicate that some sort of human activity, involving the use of fire, took place in or around the site during the Bronze Age period, and that the waste products from this activity were re-deposited within the posthole as backfill. It is unlikely that the charcoal came from *in situ* burning of the original post, as the surrounding deposits are not heat affected. The presence of waterlogged seeds suggests that the ditch contained water, either permanently or sporadically, enabling vegetation to grow in and / or around the feature. Alternatively the seeds may have been re-deposited from elsewhere as part of the backfill and preserved by the presence of water. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 3 contains low concentrations of poorly preserved, heavily fragmented charcoal and medium high concentrations of well-preserved snail shell. The presence of charcoal within the sample could indicate that some sort of human activity, involving the use of fire, took place in close proximity to the ditch during the Romano-British period, and / or the waste products from such activities were re-deposited within it as backfill. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 4 contains high concentrations of poorly preserved, heavily fragmented charcoal and high concentrations of snail shell. The presence of charcoal within the sample could indicate that some sort of human activity, involving the use of fire, took place in close proximity to the ditch in the Romano-British period, and / or the waste products from such activities were deposited within it as backfill. Due the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 5 contains low concentrations of poorly preserved waterlogged seeds, high concentrations of poorly preserved, heavily fragmented charcoal, low concentrations of highly fragmented, poorly preserved bone and high concentrations of well-preserved snail shell. The presence of charcoal and animal bone in the sample suggests that the pit fill may consist of or contain dumped domestic waste such as the contents of a hearth or oven, produced on or near the site during the Romano-British period. The presence of waterlogged seeds suggests that the ditch contained water, either permanently or sporadically, enabling vegetation to grow in and / or around the feature. Alternatively the seeds may have been re-deposited from elsewhere as part of the backfill and preserved by the presence of water within the feature. Due to the poor preservation of the bioarchaeological remains, the sample provides no

potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 50, taken from a layer of plough soil, contains low concentrations of poorly preserved waterlogged seeds and low concentrations of well-preserved snail shell. The presence of preserved seeds within the layer suggests that the deposit was once a suitable environment for vegetation growth. The seeds may be from weed species that grew alongside crops, or may be from plants that colonised the field after abandonment. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the deposit. No further work is recommended.

Sample 51 contains low concentrations of well-preserved waterlogged seeds, high concentrations of poorly preserved, heavily fragmented charcoal and low concentrations of well-preserved snail shell. The presence of charcoal within the sample could indicate that some sort of human activity, involving the use of fire, took place in close proximity to the ditch in the Romano-British period, and / or the waste products from such activities were deposited within it as backfill. The presence of waterlogged seeds suggests that the ditch contained water, either permanently or sporadically, enabling vegetation to grow in and / or around the feature. Alternatively the seeds may have been re-deposited from elsewhere as part of the backfill and preserved by the presence of water within the feature. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 52 contains low concentrations of poorly preserved, heavily fragmented charcoal, high concentrations of well-preserved snail shell, and low concentrations of well-preserved animal bone. The presence of charcoal and animal bone in the sample suggests that the layer may consist of or contain dumped domestic waste, produced on or near the site during the Romano-British period. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the deposit. No further work is recommended.

Sample 53 contains low concentrations of poorly preserved charred seeds, low concentrations of poorly preserved, heavily fragmented charcoal, low concentrations of well preserved snail shell and low concentrations of fragmented animal bone. The presence of charcoal and animal bone in the sample suggests that the layer may consist of or contain dumped domestic waste, produced on or near the site during the early Saxon period. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the deposit. No further work is recommended.

Sample 54 contains low concentrations of poorly preserved, heavily fragmented charcoal, low concentrations of well-preserved snail shell, and low concentrations of well preserved animal bone. The presence of charcoal and animal bone in the sample suggests that the pit fill may consist of or contain dumped domestic waste such as the contents of a hearth or oven, produced on or near the site during the early Saxon period. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 55 contains high concentrations of poorly preserved, heavily fragmented charcoal, low concentrations of well-preserved snail shell and low concentrations of well-preserved animal bone. The presence of charcoal and animal bone in the sample suggests that the pit fill may consist of or contain dumped domestic waste such as the contents of a hearth or oven, produced on or near the site during the early Saxon period. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Sample 57 contains low concentrations of poorly preserved, heavily fragmented charcoal, medium-high concentrations of well-preserved snail shell and low concentrations of well-preserved animal bone. The presence of charcoal and animal bone in the sample suggests that the pit fill may consist of or contain dumped domestic waste such as the contents of a hearth or oven, produced on or near the site during the early Saxon period. Due to the poor preservation of the bioarchaeological remains, the sample provides no potential for further archaeological interpretation of the feature. No further work is recommended.

Table 1: Results of bioarchaeological assessment

Context No.	3.4.1 Sample No.	3.4.2 Fraction	Waterlogged Seeds	3.4.3 Y/N	Charred Seeds	Y/N	Charcoal	Y/N	Mollusca	Y/N	Insects	Y/N	Wood	Y/N	Bone	Y/N
104	1	Flot	Low	N	-	-	Med/Low	N	Med/Low	N	-	-	-	-	Med/Low	N
		Residue	-	-	-	-	Low	N	Low	N	-	-	-	-	-	-
114	2	Flot	Low	N	-	-	Med/High	N	High	N	-	-	-	-	-	-
		Residue	-	-	-	-	Low	N	High	N	-	-	-	-	-	-
119	3	Flot	-	-	-	-	Low	N	Low	N	-	-	-	-	-	-
		Residue	-	-	-	-	Low	N	Med/High	N	-	-	-	-	Low	N
121	4	Flot	-	-	-	-	High	N	High	N	-	-	-	-	-	-
		Residue	-	-	-	-	Low	N	-	-	-	-	-	-	-	-
123	5	Flot	Low	N	-	-	High	N	High	N	-	-	-	-	-	-
		Residue	Med/Low	N	-	-	Med/Low	N	Low	N	-	-	-	-	Low	N
318	50	Flot	Low	N	-	-	-	-	High	N	-	-	-	-	-	-
		Residue	-	-	-	-	-	-	Low	N	-	-	-	-	-	-
300	51	Flot	Low	N	-	-	Med/Low	N	Low	N	-	-	-	-	-	-
		Residue	-	-	-	-	Low	N	Low	N	-	-	-	-	-	-
335	52	Flot	-	-	-	-	Med/Low	N	High	N	-	-	-	-	-	-
		Residue	-	-	-	-	Low	N	Low	N	-	-	-	-	Low	N
343	53	Flot	-	-	Low	N	Med/Low	N	Low	N	-	-	-	-	-	-
		Residue	-	-	-	-	Med/Low	N	Low	N	-	-	-	-	Low	N
340	54	Flot	-	-	-	-	Low	N	Low	N	-	-	-	-	-	-
		Residue	-	-	-	-	Med/High	N	-	-	-	-	-	-	Low	N
344	55	Flot	-	-	-	-	Med/Low	N	Med/Low	N	-	-	-	-	-	-
		Residue	-	-	-	-	Med/High	N	-	-	-	-	-	-	Low	N
356	57	Flot	-	-	-	-	Low	N	Med/High	N	-	-	-	-	-	-
		Residue	-	-	-	-	Med/Low	N	Low	N	-	-	-	-	Low	N

KEY: Y= yes (further analysis required) N= no (no further analysis required)

APPENDIX 10: LITHIC ASSESSMENT

Barry Bishop

INTRODUCTION

An Archaeological Excavation at the above site recovered 175 pieces of struck flint and just over 2kg of unmodified burnt flint fragments. This report quantifies the material by context according to a basic technological/typological scheme (see Table 1), assesses its ability to contribute to further understanding of the nature and chronology of the activities identified during the project, and recommends any further work required. No statistically based technological, typological or metrical analyses were attempted and a more detailed examination may alter or amend any of the interpretations offered here.

QUANTIFICATION

Context	Context Type	Prep./Cortex Removal Flakes	Irreg. /Misshit Flake	Flakes (Useable)	Flake Fragment	Narrow Flake (BLF)	Blade	Flake Core	Blade/Narrow Flake Core	Core Tool	Scraper	Other Retouch	Context Total Struck	Burnt (wt. g)	Burnt (No.)
101	Colluvium	1	1	6	1	1	1				1		12	0	0
104	RB ditch	1	2	8	2								13	430	12
108	PM layer		1	2									3	0	0
111	RB layer	3	4	7	2	1		2	1				20	125	6
112	BA PH			1	3		1						5	5	1
114	BA PH				3								3	0	0
119	RB ditch	1										1	2	210	1
121	RB Ditch				1	1							2	4	1
123	RB pit				1								1	87	3
125	BA layer	3	2	8	5			2		1	1		22	0	0
300	RB ditch			3	3								6	0	0
304	PM PH												0	97	2
318	AS TS	5	9	11	1		1	1		1	1		30	105	1
319	PM SS		2	1	2								5	0	0
335	RB Layer	4	3	10	5	7		1			1		31	400	5
340	AS P342			1									1	25	1
343	AS layer			1		1				1	1		4	0	0
352	RB Ditch	2	1	4		3	1	1					12	535	4
354	AS TT	1		1									2	0	0
356	AS P357			1									1	0	0
Totals													175	2023	37

Table 1: Quantification of Lithic Material by Context

BURNT FLINT

Just over 2kg of burnt flint fragments were recovered, these had been humanly modified by being burnt but exhibited no signs of previous or subsequent modification. The burnt flint was recovered mostly in small quantities and from a variety of features. This would be suggestive of general 'background' residual waste, most probably from activities involving hearth-use. A

few contexts, mostly of Romano-British date, produced slightly larger quantities which may suggest either the presence of a hearth close-by or that the features were used to deposit the debris from hearths.

STRUCK FLINT

Raw Material

The struck material was manufactured from a fine-grained black flint containing varying, but generally high, proportions of 'swirly' grey or white cherty inclusions, typical of North Downs flint, and which would have been present in abundance in the vicinity of the site. In addition, a few flakes were manufactured from "Bullhead Bed" flint, which can be found at the junction of the Cretaceous Upper Chalk and overlying Tertiary deposits throughout Kent, Essex and East Anglia (Shepherd 1972). It was of good size and knapping quality, although the frequent presence of severe thermal flawing had limited the knapping potential of much of it. The colluvial deposits present at the site contained large quantities of what might best be described as 'flint rubble', including thermally shattered nodules up to 2kg in weight. As well as transporting struck flint from the original depositional contexts, it could also have provided a good 'quarry' for raw materials after the colluvial layers had formed.

Condition

The condition of the struck flint was variable, in terms of both post-depositional damage and recortication, consistent with it having been produced over a considerable period of time and being largely residually deposited. There was an apparent general increase in abrasion and recortication with earlier technological types, consistent with these having spent longer in an unstable burial environment, such as a soil horizon.

Technology and Typology

Few truly typologically diagnostic pieces were recovered. Technologically, the assemblage was the product of differing reduction strategies and clearly produced over a considerable period. With the exception of a systematically worked single platform blade/narrow flake core from context [111], all of the cores were irregularly worked single- or multi-platformed cores weighing between 44g and 280g.

Three core tools, where all removals from the core could be regarded as by-products, were identified. All were manufactured from thermally shattered flint pebble fragments that had been modified, apparently not to produce serviceable flakes, but to alter the morphology to produce a tool. Context [125] produced a thermal spall with a series of small flakes removed to form a sharp heavy-duty cutting/chopping edge, context [343] produced a thermal chunk that had a series of small flakes removed 'keel' style which also could have been used as a heavy-duty chopping or cutting implement, and context [318] produced a thermally shattered

cobble which had several flakes removed, resulting in a large notch-like or concave scraping tool.

Retouched items included an invasively retouched flake, possibly representing a large arrowhead or knife from context [119]. It is difficult to ascertain what the original form of this implement would have been although technologically it would be most comparable to Neolithic or Early Bronze Age traditions.

The other retouched implements identified all consisted of scrapers, of which five were recovered. These included an example with crude extensive retouch made on distal and side of a thick, partially cortical flake from context [125], three which were also made on thick, partially cortical flakes but exhibited fine steep scalar retouch around their distal and lateral margins, from contexts [101], [335] and [352], and the remainder was a fragment of an end scraper from context [318]. Scrapers are notoriously difficult to date, although the crudity of their manufacture would suggest that most, if not all, were of Bronze Age date.

A few flakes exhibited edge damage consistent with cutting and scraping type activities were also identified, but none of these was convincingly retouched and, due to the possibility of natural or accidental damage, they have not been considered further.

DISCUSSION

The struck flint assemblage was characterized by a mix of technological styles, consistent with it having been manufactured over a considerable period of time, possibly from the Mesolithic to the end of the Bronze Age.

Part of the assemblage was technologically most characteristic of Mesolithic or Early Neolithic industries, such as the blades, possibly the core from context [111], and many of the narrow flakes. The invasively retouched implement from context [119] was also most likely of Neolithic or Early Bronze Age date. The limited number of these 'earlier' pieces suggests that activity during these periods was limited and ephemeral, the site probably just being occasionally visited as part of a much more widely inhabited landscape.

The bulk of the assemblage, however, was probably later in date. These included the majority of flakes, which were characterized as being large, thick and crudely struck, and often had wide, plain or cortical striking platforms. Most of the cores were unsystematically reduced using cortical or thermal plains as striking platforms, with little evidence of preparation or attempts at maintenance or rejuvenation, and were often abandoned when quite large, mainly due to severe hinge/step fracturing. Three cores appeared to have been primarily reduced for use as core-tools, and the range of retouched items was limited to rather crudely manufactured scrapers. All of these traits are characteristic of later flintworking traditions, dateable to the Middle Bronze Age or later (cf Saville 1990; Brown 1991; Herne 1991).

This material was probably manufactured sometime between the Middle Bronze Age and the Iron Age, and, although mostly recovered residually from later contexts, may possibly be associated with the later prehistoric settlement-type features identified at the site. Without detailed examination, it is difficult to evaluate what the nature, extent or significance of such flintworking may have been at this site. Flint use during the later prehistoric period (ie Middle Bronze Age and after) is usually regarded as being largely confined within the domestic sphere, associated with the realms of food production, craft and industrial activities (Herne 1991), although other evidence may indicate that it was occasionally employed in activities of a more ceremonial nature (eg Pollard 1998).

RECOMMENDATIONS

Due to its size and lack of chronologically diagnostic artefacts, this report is all that is required of the material for the purposes of the archive. Nevertheless, it does indicate earlier prehistoric activity which is otherwise unrepresented in the archaeological record, and has the ability to contribute to the further appreciation of the poorly understood nature and chronology of late flintworking traditions from the Middle Bronze Age onwards. It is therefore recommended that the assemblage should be examined in more detail and fully described for publication, alongside illustrations of relevant pieces. The publication should concentrate on describing the evidence for later flintworking, with full considerations to context, both within individual features and spatially across the site, and with regard to the material's relationship with other deposited materials. The publication should also include some consideration of local geology, raw material sources and previous finds and research in the local area.

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APPENDIX 11: ASSESSMENT OF THE IRON SLAG

Lynne Keys

A small assemblage of iron slag and related debris was collected by hand during excavations. It was examined by eye and categorised on the basis of morphology. A magnet was used to detect any iron rich fragments. Each slag type in each context was weighed; additionally the smithing hearth bottom was measured to obtain its dimensions for statistical purposes. Details are given in the table below.

Quantification table for the assemblage (wt. in g; dimensions in mm)

KSRG 04					**Land at Stuart Rd, Gravesend, Kent**
cxt identification	**wt**	**len**	**br**	**dep**	**comment**
318 iron rich slag	6				
318 ore?	18				not magnetic but identical to roasted example
318 roasted ore?	4				magnetic, same stone as above
318 run slag	364				Iron Age smelting slag?
318 smithing hearth bottom	196	70	70	40	magnetic
318 undiagnostic	12				iron rich
318 undiagnostic	192				
319 ferrous concretion	12				possibly originally around root
335 undiagnostic	194				magnetic, possibly broken smithing hearth bottom
343 undiagnostic	28				
354 cinder	2				

total wt. = 1028g

Of the three phases which contained slag only phases 4 (Early Saxon) was of interest. Unfortunately the context from which the material was derived (318) appears to either be a colluvial layer or had been disturbed by ploughing. Some of the material may represent smelting activity (production of iron from ore and a fuel in a furnace). There is a quantity of run slag of a type which could be Iron Age or possibly early Saxon and two pieces of stone, one of them magnetic, which had been fired and may be iron ore. It will be necessary for a geologist to examine and comment on these. In addition the only smithing hearth bottom

came from (318). Other slag in that context was broken up (undiagnostic) with some being rich in iron.

Recommendations for further work

If considered necessary, the two pieces of fired stone could be examined by a geologist to see whether they may indeed be ore.

APPENDIX 12: GLASS ASSESSMENT

Sarah Carter

Number of fragments: 1

Context +: 1 fragment from the base of a moulded carbonated drinks bottle in natural pale green glass. Late 19th-20th century.

No recommendations.

APPENDIX 13: CLAY TOBBACCO PIPE ASSESMENT

Chris Jarrett

A single clay tobacco pipe stem was recovered from layer [108] and is likely to date to the late 18th or early 19th century by its size. No further work is required.

APPENDIX 14: OASIS DATA COLLECTION FORM

OASIS ID: preconst1-7422

Project details

Project name	Assessment of an Archaeological Excavation at Stuart Road, Gravesend, Kent
Short description of the project	An excavation revealed evidence of prehistoric activity in two postholes containing Bronze Age pottery and lithics, though they formed no discernible structure. Three e-w gullies and an e-w ditch containing Roman pottery denoted a Roman field system. A group of pits and postholes were sealed by a layer containing early Saxon pottery AD 575-650.
Project dates	Start: 02-09-2004 End: 22-10-2004
Previous/future work	Yes / No
Any associated project reference codes	KSRG 04 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Monument type	DITCH Roman
Monument type	PITS Early Medieval
Significant Finds	POTTERY Roman
Significant Finds	POTTERY Early Medieval

Methods & techniques	'Sample Trenches'
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	KENT GRAVESHAM GRAVESEND Stuart Road, Gravesend
Postcode	DA11 0XX
Study area	3306 Square metres
National grid reference	TQ 6437 7426 Point
Height OD	Min: 15.45m Max: 16.22m

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project brief	CgMs Consultants Ltd

originator	
Project design originator	Duncan Hawkins
Project director/manager	David Divers
Project supervisor	Guy Seddon
Sponsor or funding body	Bellway Homes
Project archives	
Physical Archive recipient	Local museum
Physical Contents	'Animal Bones','Ceramics','Environmental','Glass','Metal','Worked stone/lithics'
Physical Archive Exists?	Yes
Digital Archive recipient	Local museum
Digital Contents	'Animal Bones','Ceramics','Environmental','Glass','Metal','Stratigraphic','Survey','Worked stone/lithics'
Digital Media	'Database','Images raster','Spreadsheets','Survey','Text'

available

Digital Archive Exists?	Yes
Paper Archive Exists?	Yes

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