Archaeology South-East

ASE

A POST-EXCAVATION ASSESSMENT AND UPDATED PROJECT DESIGN FOR EXCAVATIONS AT THE RAINHAM INTERCHANGE AND LIBRARY SITE, FERRY LANE, RAINHAM, LONDON BOROUGH OF HAVERING

NGR 552100 182000

Project No: 4056
LAARC Site Code: RIL 09

ASE Report No. 2010209
OASIS id: archaeol6-91541

By Kathryn Grant MSc AIFA

With contributions by
Anna Doherty, Elke Raemen, Karine Le Hegarat, Lucy Allott, Luke Barber, Sarah Porteus and Lucy Sibun
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Abstract

This document summarises the results of the archaeological excavation (Strip, Map and Sample) carried out during September and October 2010 by Archaeology South East at the Rainham Interchange and Library Site, Ferry Lane, Rainham, London Borough of Havering (NGR: 552100 182000). The archaeological work was commissioned by CgMs Consulting Ltd. on behalf of their client, London Thames Gateway Developments. The archaeological excavation followed an evaluation and a watching brief exercise which were carried out at the site in August 2009 and January 2010 respectively. The potential of the site for further analysis is discussed within this report and a publication synopsis has been outlined. A quantification of the resources needed to achieve this work has also been undertaken.

Three periods of activity were recorded during the excavation: Late Iron Age/early Roman, medieval and post medieval.

Five phases of activity were recorded during the excavation. The Late Iron Age/Roman activity comprised pits (some probably quarry pits), postholes and a partial ring gully. These features were sealed by a naturally derived, probably alluvial deposit. Further Late Iron Age/Roman features were cut into this alluvial deposit including pits, postholes a further ring gully, a well and a single burial of a young infant. There is evidence of iron working, grain processing and potentially (although circumstantially), pottery production in the vicinity of the site in this period.

There was limited medieval activity for which the only evidence was a drainage ditch uncovered during the evaluation and intrusive artefacts scattered across the excavation area. The post-medieval activity comprised two rows of late 19th century cottages and associated refuse pits and garden features. Considerable demolition from these cottages as well as made-ground was encountered on the site during the excavation.

The natural geology was variable at the site and comprised a combination of yellowish orange sandy clays and sandy gravels, which were encountered at a maximum height of 2.38m AOD in the northeast of the site, falling away to 1.09m AOD in the west.

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1.0 INTRODUCTION

1.1 Project Background

1.1.1 Archaeology South-East (ASE), a division of University College London Field Archaeology Unit (UCLFAU), was commissioned by CgMs Consulting Ltd. on behalf of their client, London Thames Gateway Developments, to undertake an archaeological 'Strip Map and Sample' investigation at the proposed new site of Rainham Interchange and Library, Ferry Lane, Rainham, London Borough of Havering (NGR: 552100 182000), hereafter referred to as 'the site' (Fig.1).

1.1.2 The Strip, Map and Sample was carried out as a result of the findings from a preceding archaeological evaluation (ASE 2009b). The archaeological investigations were undertaken in advance of the redevelopment of the site.

1.2 Site Location, Geology and Topography

1.2.1 The proposed development site lies on open land, measuring approximately 0.35ha and is bounded by Rainham Railway Station to the south and west, Ferry Lane to the east and Wennington Road (B1335) to the north. The site centre is at NGR 552100 18200.

1.2.2 The site is located on the southern side of the Rainham Conservation Area.

1.2.3 According to Sheet 257 of the British Geological Survey (BGS 1996), the site lies on Taplow Gravels. These are described as 'Post-diversionary Thames River deposits' comprising variations of gravel, sand and clay. The study area is located immediately adjacent to an area of made ground. The underlying base geology of the Rainham area consists of the Lambeth Group (formerly the Woolwich and Reading Beds), overlain by Tertiary River Terrace Gravels and alluvium (Jacobs 2009). The alluvial marshlands are 1.5 – 2.0 metres above sea level. Rainham appears to be located on the edge of the first gravel terrace, adjacent to Rainham Creek and overlooking marshes adjoining the River Thames (Jacobs 2009).

1.2.4 The proposed development site appears relatively level but the degree of overburden and made ground deposits revealed during the evaluation (ASE 2009b) suggested some considerable attempts at levelling. The natural geology was revealed at its highest in the northeast of the site at 2.38m AOD with a gentle slope down to 1.09m AOD in the west.

1.3 The Scope of the Project

1.3.1 Planning permission has been granted for the development of the Rainham Interchange facility and Library building. A Desk Based Assessment (DBA) on Rainham Village was carried out in May 2009 by Jacobs (2009). A schedule of planning conditions was issued, including a condition which states that:

> '*No development shall take place within the area indicated (this would be the area of archaeological interest) until the applicant has*

secured the implementation of a programme of archaeological work in accordance with a Written Scheme of Investigation which has been submitted by the applicant and approved by the Local Planning Authority.'

1.3.2 Due to the archaeological potential of the site an archaeological strategy was recommended by The Greater London Archaeological Advisory Service (GLAAS). This strategy consisted of an initial evaluation of the site by trial trenching for which a Written Scheme of Investigation for the work was prepared (CgMs 2009a). In addition, a Method Statement was prepared by Archaeology South East which detailed specific fieldwork strategies (ASE 2009a).

1.3.3 The work carried out during the course of the evaluation was undertaken in line with government policy as set out in PPG16, the London Plan's archaeological policies, the London Borough of Havering's archaeological policies and in accordance with the Written Scheme of Investigation which had been formally approved by David Divers, Archaeological Advisor, GLAAS. The results of the archaeological evaluation were presented in a report prepared by ASE in September 2009 (ASE 2009b).

1.3.4 The evaluation (ASE 2009b) found significant remains around the edge of and within the perimeter the new development area. The presence of these features suggested the probability of further archaeological remains surviving in the footprint of the proposed building. Following consultation between David Divers (GLAAS) and Richard Meager (CgMs Consulting Ltd), it was decided that a further stage of archaeological work (Strip, Map and Sample) to mitigate the development impact would be necessary. A specification for this stage of work was prepared by CgMs and approved by GLAAS (CgMs 2009b).

1.3.5 In January 2010 a watching brief was required in order to monitor the removal of contaminated deposits by a geo-environmental engineer from an area to the north of the footprint of the proposed new build. A specification for the work was produced by CgMs (CgMs 2010) and a subsequent report prepared by ASE (ASE 2010). Due to the contamination, the archaeologist was advised against excavating and sampling the deposits. During this period of monitoring, it was recorded that the area was heavily contaminated with modern debris and inclusions which reached a depth of 1.0m in most of the area, with a depth of 0.5m in the South West corner where the natural gravels had been cut by red brick cottage footings.

1.4 Circumstance and Dates of the Archaeological Work

1.4.1 The evaluation of the site was undertaken between 18th and 21st August 2009. The fieldwork was carried out by Kathryn Grant with the assistance of Liane Peyre. The site was surveyed by Rob Cole.

1.4.2 The watching brief during the removal of contaminated deposits was undertaken between 19th and 20th January 2010. The monitoring was carried out by Liane Peyre.

1.4.3 The Strip Map and Sample was undertaken between 27th September and 25th October 2010. The fieldwork was carried out by Kathryn Grant with the assistance of Cat Douglas, Gary Webster, Nina Olofsson, Chris Russel and Roddy Mattinson. The site was surveyed by Lesley Davidson and John Cook,

1.4.4 The project was managed by Jon Sygrave (Project Manager) and Jim Stevenson (Post-excavation Manager).

1.5 Organisation of the Report

1.5.1 This report presents an assessment of the findings of the excavation, integrated with the results of the evaluation, where relevant.

1.5.2 This post-excavation assessment and updated project design outlines the original research aims of the project; provides an interim statement on the archaeological findings; provides quantification of the finds and environmental material recovered from the site; informs as to the archaeological potential of the findings and their significance; outlines a proposed publication project, listing revised research aims, and a proposed task sequence for the programme of works.

1.5.3 The principle underlying the concept of post-excavation assessment and updated project design were established by English Heritage in the Management of Archaeological Projects (1991). This document has been written in accordance with Management of Research Projects in the Historic Environment (MoRPHE), PPN3: Archaeological Excavation, (English Heritage 2006).

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Archaeological and Historical Synopsis

2.1.1 The archaeological background of the proposed site has been discussed in detail in the DBA and is summarised below with due acknowledgement (Jacobs 2009).

2.1.2 The potential of the site was assessed in relation to the proximity of known archaeological remains, such as listed buildings and archaeological sites/findspots, recorded in the Greater London Sites and Monuments Record (GLSMR) within 500m wide radius of the site. A summarised version of the sites and monuments search (some information sourced from the Archaeology Data Service) has been tabulated in Appendix III with the site/findspot locations plotted on Figure 1. Key points are detailed below.

2.1.3 The Palaeolithic period is represented by a findspot of three hand axes (16) to the east of the churchyard and a Mesolithic stone tool (25) to the southeast of Rainham.

2.1.4 Late Bronze Age/Iron Age ditches have been recorded at the Tesco site to the east of Rainham village and on the Rainham Town Football Club site to the southeast (9, 21 and 23).

2.1.5 The Iron Age is evidenced within the area by cut features including ditches, gullies and pits (20, 21 and 23), which are thought to be part of a larger landscape, perhaps associated with the early-middle Iron Age settlement at Rainham Town Football Club.

2.1.6 Limited evidence in the form of pottery sherds suggest that human activity continued in the southwest and southeast of Rainham from the Iron Age through to the Roman period. A single Roman grey pottery rim sherd was found in the top of a Bronze Age ditch in Wennington Road (22).

2.1.7 Five medieval sites, including the Grade I listed Church of St. Helen and St. Giles (5), are located within the historic core of Rainham. In addition, medieval pottery (24) was recovered to the southeast of Rainham.

2.1.8 Twenty-five post-medieval sites have been identified within the study area. Among these are the 17th-19th century developments at Rainham, the development of Rainham Wharf (11) and the construction of the London, Tilbury and Southend Railway (29). World War II defence structures include an anti-aircraft gun position (26) and an air-raid shelter.

2.1.9 Excavations carried out at Moor Hall Farm revealed Iron Age and Roman enclosures (33).

2.2 Summary of Archaeological Potential

2.2.1 The preceding DBA demonstrated the presence of human activity from the Palaeolithic through to modern times within the study area. A clear continuation of human activity in the area has been evidenced by cut features

dating from the Iron Age and Roman periods. The Saxon derivation of the name Rainham, as well as the construction of the stone church in the Norman period, suggests there is a high potential for remains from these periods to survive within the area.

2.2.2 Historic-mapping has provided clear evidence of post-medieval activity on the actual study site. The maps indicate the presence of an enclosed garden in 1839 and the construction of two rows of cottages between 1882 and 1897.

2.3 Existing Disturbances

2.3.1 The DBA (Jacobs 2009) states that the form of the proposal site is not identified in the Rainham Tithe map (1839) but is clear in the 1882 OS 1st edition map. This historic mapping suggests that disturbances in the last 150 years have been fairly minimal as, apart from the construction of two rows of cottages to the north of the site the area was utilised as an enclosed garden.

2.3.2 With the exception of a known telecommunications cable crossing the eastern edge of the development site from north to south, the site was not known to have been disturbed by other utilities trenches. The area was checked with a CAT scanner prior to any excavation work.

3.0 ORIGINAL RESEARCH AIMS

3.1 Evaluation and Strip Map and Sample: Aims and Objectives

3.1.1 The evaluation set out to determine, as far as possible, the location, form, extent, date, character, condition, significance and quality of any surviving archaeological remains.

3.1.2 The overall aim of the archaeological investigations was to excavate and record any archaeological remains on the site which will be impacted upon by the proposed development design.

3.1.3 The specific objectives to achieve this aim, as outlined in the Written Scheme of Investigations for the evaluation and Strip Map and Sample (CgMs 2009a and 2009b) were:

- To establish the presence or otherwise of Prehistoric or later activity/occupation and define the date and nature of that activity/occupation.
- To establish the palaeoenvironmental context of any prehistoric, or later occupation/activity.
- Evaluate the likely impact of past land use.

4.0 METHODOLOGY

4.1 Archaeological methodology

4.1.1 The archaeological work was carried out in accordance with the Method Statements and Written Scheme of Investigation (ASE 2009a, CgMs 2009a and CgMs 2009b) and complies with the Standards and Guidance of the Institute for Archaeologists, (IfA 2001). The complete adopted methodology can be referenced in these documents. A summary of the methodology is given below.

4.1.2 The evaluation comprised five archaeological trenches (measuring 20m in length with a width of 1.8m) which were excavated under constant archaeological supervision to a cumulative length of 100m using an 8 tonne mechanical tracked excavator fitted with a 1.80m wide toothless ditching bucket to minimise damage to deposits. The trenches were positioned across the development area so as to ensure that an optimum sample of the area was uncovered (Fig. 2).

4.1.3 The watching brief involved the monitoring of the excavation of a trapezoidal shaped trench in the north of the proposed new-build footprint.

4.1.4 The Strip, Map and Sample comprised the investigation of the footprint of the proposed new building. Machining was undertaken by a 360-degree mechanical excavator equipped with a flat-bladed ditching bucket. All machining was carried out under constant archaeological supervision.

4.1.5 All encountered archaeological deposits, features and finds were recorded according to accepted professional standards in accordance with the Specification, using standard Archaeology South-East context record sheets. All pits and post-holes were half-sectioned and fully excavated as and where necessary. Ditches were investigated by segment and layers excavated and recorded stratigraphically. When the infant burial was encountered, permission was sought for the exhumation of the remains from the Ministry of Justice.

4.1.6 For the purpose of context recording and differentiation, contexts revealed during the excavation were numbered sequentially from [100], with evaluation contexts starting at [001] and prefixed with the trench number (e.g. 1/001). The three phases of fieldwork were all recorded under the site code RIL 09.

4.1.7 The excavation area was located and levelled using a Total Station and tied into the Ordnance Survey 1:1250 scale map of the area. Any uncovered archaeological features or deposits were planned and sections of every feature were drawn. A day-to-day digital photographic record was maintained in addition to a full monochrome and colour photographic record of features uncovered during the excavations.

4.1.8 Samples of archaeological deposits were collected for environmental processing. The samples collected during the evaluation have been suffixed with the letter ‘a’ within this report to distinguish them from the samples taken during the excavation. A human bone sample was sent to SUERC (Scottish

Universities Environmental Research Centre) for radiocarbon dating.

4.2 On-site Constraints

4.2.1 Due to the depth of some of the features uncovered at the site (up to 2m in depth to the base in some cases) the water table had been reached and some inevitable water seepage was present in feature bases as a result

4.2.2 Due to the level of modern rubbish, scrap metal and made ground at the site a full metal detecting survey was compromised. However, all clear archaeological horizons and features were scanned for the presence of artefacts.

5.0 ARCHAEOLOGICAL RESULTS

5.1 Introduction

5.1.1 This section presents an assessment of the stratigraphic findings of the Stage 3 excavation, integrated with the results of the Stage 1 evaluation, where relevant. Appendix 1 contains the site context registers. Individual contexts are referred to thus [***], and sub-groups thus (SGP **). Environmental samples are listed within triangular brackets <**>, and registered finds thus: RF<*>. References to chapter sections within this report are referred to thus (3.7).

5.1.2 The archaeology is discussed under provisional period headings determined primarily through assessment of the dateable artefacts, predominantly the pottery and through the creation of relative chronologies where stratigraphic relationships exist. In addition, an assessment of spatial phasing and feature alignment and projection has also been used to determine possible relationships and function.

5.1.3 All of the contexts taken during the various stages of archaeological investigation are tabulated in Appendix I.

5.2 Phase Summary and Archaeological Overview

5.2.1 The archaeological activity uncovered during the excavation has been divided into three periods. Period 1, Late Iron Age/ Roman (1st century AD) is dived into three sub-phase, (Phases 1.1-1.3). The periods are based on preliminary analysis of the stratigraphy and pottery spot dates.

Period 1: Late Iron Age/Roman (1st century AD)

Phase 1.1
Phase 1.2 alluvial deposition (flood episode)
Phase 1.3
Phase 1.4
Phase 1.5

Period 2: Medieval

Period 3: Post-medieval

5.2.2 During the investigations, 30 pits, 3 ditches, 2 segmented ring/curvilinear gullies, 15 postholes, 1 human inhumation and 1 well were investigated.

5.3 The Project Archive

5.3.1 The site archive is currently held at offices of ASE and will be deposited at the Museum of London Archaeological Archives and Research Centre (LAARC) on completion of the project.

5.3.2 The contents of the archive are tabulated below for reference in this report (Table 1).

	Evaluation	Watching Brief	Strip, Map and Sample	Total
Number of Contexts	43	NONE	160	203
No. of files/ paper record	1	NONE	1 file	2 files
Plan and sections sheets	2	NONE	7	9 sheets
Photographs	1 B&W film 1 colour film 62 Digital	12 Digital	2 B&W film 2 Colour film 200 Digital	3 B&W films 3 Colour films 263 Digital
Bulk Finds	1 large box, 1 small box, 1 stewart tub	NONE	6	7
Registered Finds	3	NONE	5	8
Bulk Samples	5	NONE	34	39

Table 1: Quantification of the Site Archive

5.4 Natural geology and overburden

5.4.1 The natural geology was variable at the site and comprised a combination of yellowish orange sandy clays and sandy gravels, which were encountered at a maximum height of 2.38m AOD in the northeast of the site, falling away to 1.09m AOD in the west.

5.4.2 The excavation area and footprint area of the proposed building consisted of two gravel spurs with a sandy-clay island situated in-between. The majority of the Late Iron Age/Roman archaeology was concentrated on the sandy clay deposit while the post-medieval features were present on the gravel areas to the north and south.

5.4.3 Some of the features contained a whitish grey deposit which was thought to be the result of mineralisation from standing water when the feature was exposed to the elements prior to infilling.

5.4.4 The archaeological/natural horizon was sealed by up to 2.5m made ground with only small areas of subsoil surviving in the south of the area. It is possible that some areas had been truncated during levelling activity, perhaps immediately prior to the construction of Victorian cottages formerly present on the site.

5.5 Period 1: Late Iron Age/Roman (Figs 3-9)

5.5.1 Overview of Period 1 remains

The Late Iron Age/Romano-British archaeological remains comprise five phases of activity. Of some note is an alluvial deposit (Phase 1.2) which seals phase 1.1 features. The majority of later Period 3 features (Phases 1.3-1.5) are cut through this deposit.

Phases 1.1 – 1.5 are detailed below

5.6 Period 1, Phase 1.1.

5.6.1 Pits: contexts [226], [233], [231]

An oval-shaped pit [226] (SG1) (Fig. 4, Section 1) of unknown function, measuring 1.9m northwest-southeast and 0.9m northeast-southwest with a depth of 350mm, was revealed in this phase. This pit contained an infill comprising mottled yellowish grey friable clayey silty gravel [225] (SG2). No artefacts were recovered and the feature has been phase on stratigraphic and morphological grounds.

A substantial circular pit [233] (SG13) (Fig. 4 – Section 2), measuring 1.5m in diameter with a depth of 650mm, was revealed slightly north of posthole [213]. This pit contained four fills: [252] to [255] (SG13-14). The sterile nature of the fills and the inclusions of greenish cess-like deposit may suggest it functioned as a cess pit.

Feature [231] (SG6) was a sub-circular pit (Fig. 4 – Section 3) which was cut by a curvilinear gully segment [227]/[229] (SG8-11). The pit measured 1.2m by 1.05m with a depth of 350mm. The fill [232] of this feature comprised sterile, lightly compacted grey brown sandy silt containing a single pottery sherd and a single retouched flint fragment.

A modest number of charred macroplants and a small amount of charcoal was recovered from the environmental samples taken from these pits.

5.6.2 Posthole: context [213]

Posthole [213] (SG3) (Fig. 4 – Section 4) was located beneath the Phase 1.3 pit [152] (SG29). This circular, steep-sided posthole measured 0.56m in diameter with a depth of 180mm. This feature contained two fills: the lower fill [222] (SG4) consisted of light orange-brown sterile sandy silt; the upper fill [214] (SG5) consisted of dark grey sandy silt with orange patches. Several sherds of Late Iron Age / Early Roman pottery were recovered and some, limited evidence of charred crops were present in the environmental sample.

5.6.3 Possible building? Ring gully: contexts [227], [229]

The gully [227/229] (SG8/10) (Fig. 4 – Section 5) which cut pit [231] (SG13) was 3m long with two clear rounded termini. It was filled with light orange-

brown sterile silty sand [228] (SG11). A similar, but more complete, later gully was cut in the vicinity during Phase 1.3 and is provisionally interpreted as a ring gully, marking the location of a building. It seems possible that this small surviving segment of gully, [227/229] (SG8/10), represents an earlier phase of the building. A fairly rich assemblage of charred plant remains including possible of spelt wheat was recovered from the environmental sample.

5.7 Period 1, Phase 1.2 (Fig.4)

5.7.1 Alluvial deposition

This phase is represented by what appears to be a naturally-derived deposit [161] (SG16) with a thickness of c.400mm. This comprised variably laminated, light brownish yellow sandy-clay containing frequent root traces and worm casts. It is thought that this was deposited through either a single flood event or a rapid sequence of episodic flooding. [161] sealed the Period 1, Phase 1.1 archaeological features. Period 1, Phase 1.3-1.5 features were cut into this deposit. Deposit [161] was removed in spits by a machine to reveal the underlying archaeology (Period 1, Phase 1.1).

A similar deposit to [161], recorded as [198] (SG17), was located on the edge of the gravel spurs and contained more gravel and pottery sherd inclusions.

A spread of 'dirty' natural [4/004] was revealed in the centre of the Trench 4 during the evaluation. This deposit corresponds with contexts [161] (SG16) and [198] (SG17) assigned in the excavation.

5.8 Period 1, Phase 1.3 (Figs 6- 9)

5.8.1 Overview

Towards the southern part of the excavation area, pits, postholes and ditches of Late Iron Age/Early Roman date were investigated. Further remains of a similar date were found to the south and consisted of a northwest to southeast aligned ditch, a large pit and a further pit surrounded by possible postholes. Most of the features within this phase were cut into the Period 1, Phase 1.2 alluvial deposit [161].

For ease of navigation, Figure 7 has been annotated with the labels: 'Western feature group', 'Central feature group' and Eastern feature group' These are cross referred to in the text as necessary.

Pits

The activity in this phase is largely represented by two clusters of substantial, intercutting pits (Western Feature Group and Central Feature Group, Fig. 8 – Sections 8 -14), which have been dated by pottery recovered from the earliest backfill to the period c. AD 10-70/100. The quantity of these pits and the concentrated area in which they are located may suggest that some were created by the extraction of sand or gravel, although this seems less likely for the more regularly shaped examples. Large quantities of pottery sherds were found within the backfill of these pits, presumably not related to their initial

function but certainly indicative of fairly intensive activity in the immediate vicinity as the features went out of use. Despite the cess-like appearance of many of the pit fills, the environmental evidence is not typical of a cess deposit, but may be indicative of a gradual breakdown of organic matter in the damp conditions, particularly in context [201] where fly pupae were evidenced.

Postholes

Several postholes were located in this area and were dated by pottery inclusions or stratigraphic relationships to the Phase 1.2 land-use. The amount of truncation and sporadic positions of these features has hampered meaningful interpretation of what structures they may have represented at this assessment stage, but the features do appear clustered rather than in linear alignments. The surviving evidence of clay covered wattle or posts in posthole [134] (SG48) (Fig. 8 – Section 10) may be indicative of timber framed wattle and daub structures in this area. It is possible that the postholes were associated with the postulated Phase 1.4 roundhouse.

5.8.3 Pits: [205], [207], [209]/[236], [211], [238] (Figs 7 and 8, Sections 6 and 9 and 'Western feature group')

The first cluster of pits was located close to the western edge of the excavation area on the edge of the gravel spur and consisted of five intercutting pits [205], [207], [209]/[236], [211], [238] concave sides and bases. The pits ranged from 0.5m-1.4m in diameter and were up to 350mm deep and were filled with single, light - dark greyish brown sandy silt. A small amount of pottery dated from AD10-70/100 was recovered from these features. A small amount of charcoal and some charred crop remains, most abundant in pit [238] were recovered from the environmental samples.

5.8.4 Intercutting Pits**:** [150], [152], [156], [199], [202] (Figs 7 and 8, Section 8 and Central feature group)

Intercutting pits [150], [156], [152], [199] [202], were mostly deep (450mm-650mm) with steep sided profiles.

Pit [199] (SG28) was only observed in section. This small feature measured 0.45m north-south with a depth of 300mm and it contained a dark greenish grey sandy silt fill [200] with fired clay inclusions.

Large pit [152] (SG29), was 2.5m in diameter and 450mm deep). It contained dark black brown friable sandy silt fill, considerably darker than the fills of the other pits and not 'cess-like'. Several pottery sherds of AD10-70/100 date and a heavy duty iron nail shank fragment were recovered. Feature [152] cut pit [199].

Pit [202] (SG26), cut [152] and measured 3m in diameter and 250mm in depth. This feature was filled with light greenish grey firm silty sand [215] with frequent sub-rounded gravel inclusions. Several pottery sherds of AD10-70/100 date were recovered.

Pit [156] was 1.4m in diameter with a depth of 650mm. It contained mid orange-brown sandy silt [157] and was cut centrally by the final pit in this sequence, a sub-square, vertical-sided pit [150] (SG33), measuring 0.8m² (with rounded corners) and 650mm deep. This pit was filled with dark grey sandy silty clay, [151]. Several pottery sherds of AD10-70/100 date were recovered and the feature also produced a rich assemblage of charred plant remains.

Pit [164] (Figs 7 and 8 Section 14 and 'Central feature group')

Pit [164] (SG20), measured 0.8m in diameter with a depth of 170mm. This shallow feature with moderately sloping sides contained one light grey-yellow-brown mottled silty sand fill with rare gravel inclusions. Although no finds were recovered from this fill, it was assigned to this phase due to its proximity to other Phase 1.3 features.

Postholes: [113], [115], [131], [134], [170], [234], [186], [188], (Fig. 7 'Central feature group)

Eight probable postholes were present in the 'Central Feature Group' area, ranging in diameter from 0.25-0.70m and in depth from 110-350mm and having steeply sloping or vertical sides. These features all contained a single similar fill consisting of mid to dark greenish brown-grey sandy silt with occasional gravel inclusions, flecks of fired clay (notably with wattle impressions from posthole [134]) and sherds of Late Iron Age / Early Roman pottery.

5.8.5 Well?: [112] (Figs 7 and 8, Section13 and 'Central feature group')

Also located in this area was a deep feature, possibly a well [112] (SG22). This was a vertically sided feature with a 1m diameter and a depth of 1.2m. This feature cut through an earlier shallow, probably truncated, posthole [223] (SG21) on its western edge. The well was dated to this period through pottery dating to AD 10-70/100 recovered from the upper fill; however no other datable artefacts were recovered from the lower fills. The basal fill [127] comprised dark greenish grey moist sandy silt containing frequent charcoal flecks, animal bones and organic material. Over this deposit was context [126], consisting of dark greenish brown silty sand with occasional gravel inclusions, charcoal flecks, stone, slag and animal bones. The uppermost fill [125] was mid greyish brown silty sand with rare charcoal flecks, gravel and pottery sherds. This feature contained a number of large stones (Kentish Lower Greensand and Greensand chert) perhaps derived from wall construction and conglomerate material with substantial quantities of adhering slag which would suggest industrial activity taking place within the area.

Charred wood fragments were particularly abundant in the four samples extracted from well and charred macrobotanicals were also evident in the assemblage. The samples also produced a large amount of industrial debris, including slag, vesicular material, glassy material, magnetic remains and spherical hammerscales.

5.8.6 Pits and Postholes: [168], [219], [172], [174], [176], [178], [180] (Figs 7 and 8 'Eastern feature group'),

Pit [168] (SG54) was interesting as it was surrounded by five postholes [172-180] (SG66-70), however the feature itself was irregular and resembled a tree-throw. A single pottery sherd dating to AD 40-400 was recovered from the dark greyish brown silty sand fill of this pit.

Five [172-180] (SG66-70) (Fig. 9 – Sections 20-24) postholes were located around pit [168] (SG54). The postholes surrounding the central pit were shallow (averaging 100-200mm) and are likely to have been truncated by post-medieval activity. The postholes were roughly 0.3m-0.5m in diameter and were positioned around the north, east and south of the pit. No postholes were positioned to the west. If the postholes were used to support a structure it is possible that the western side was left open for access. All of the features were filled with greyish brown silty sand with pea grit/gravel inclusions. No archaeological finds were recovered from any of these postholes.

This pit and posthole cluster, including pit [219] (SG59) which was located slightly south, were positioned on the gravel spur in the south-eastern corner of the excavation area. The features are also located to the south of a Victorian wall foundation so it is possible to consider that these may be the remains of post-medieval garden features, although their morphology is more in keeping with the Late Iron Age / Early Roman remains. The configuration of this group could be indicative of a structure, perhaps for an out-building or covered store.

5.8.7 Pits / postholes [143] (Figs 7 and 8, Section 15)

Pit [143] (SG37) had a 1m diameter and a depth of 350mm. The basal fill of this pit [144] was pale whitish orange silty sand with patches of grey mottling. A thin lens of mid brown silty sand [158] with greenish grey mottling was recorded as the middle fill of this pit. The uppermost fill consisted of dark grey silt with frequent pottery sherds and animal bones. This feature may have functioned as a rubbish pit.

5.8.8 Ditches and a possible sump / pit?

Contexts: [119], [123], [129], [137], [140], [146], [162], [167], [191], [193], [195], [203], [240], [3/016], [3/018], [4/005]

A northwest-southeast aligned ditch, [119/137/195] was cut by the Phase 1.4 ring gully [123]). Also recorded in this excavation slot was a deeper gully [140] into which [137] appeared to drop. This method of stepping the ditch would perhaps suggest that the features were used for drainage.

A further northwest-southeast ditch [167/183] (SG117/115) (Fig. 9, Section 19) was encountered across the south-western corner of the excavation area. This ditch was 0.76m wide with a depth of 330mm. It had steep sides and a

concave base. The ditch was filled with dark grey silty sand [166]/[182] with occasional gravel inclusions, pottery sherds, cbm fragments and charcoal flecks. This ditch cut through an earlier shallow gully [185] (SG105) to the northwest. Gully [185] was approximately 0.45m wide and 150mm deep. It contained dark brownish grey silty sand fill [184].

Pit [250] (SG43) (Figure 9 – Section 18) was one of the largest of the pits uncovered during the archaeological investigations at the site. It was roughly 4m in diameter with a depth of 700mm. This feature contained two fills: the lower fill [247] consisted of light greenish grey silty sand with flecks of charcoal and mottled cess patches; the upper fill [246] comprised light brownish green silty clay with occasional pottery sherds, cess, animal bone fragments, charcoal flecks and gravel inclusions. The size of this feature would suggest that it could have been used for quarrying or perhaps a sump associated with ditch [167]. Context [240] appears to be a continuation of the northwest-southeast ditch [119/137], but the intercutting activity in this area made it difficult to confirm this through excavation and it may represent a re-cutting or of pit [250]. In any case, a fragment of rotary quern was recovered from the lower fill, [248] of this feature.

Although all samples taken from these ditches, contained charred macrobotanical remains a sample taken from ditch [119] was particularly rich.

These features were sealed by a deposit [245] (SG102) a dark grey silty sand with frequent gravel inclusions. A small sub-circular pit [249] cut through this spread and contained a fairly large group of pottery dated to AD70/100.

5.8.9 Pits from evaluation Trenches 2 and 3 (Fig. 6)

During the evaluation, a small oval-shaped pit [2/003] (Figure 6 – Section 6) was encountered in Trench 2 at the south-eastern edge of the site. The pit was 0.8m by 1.10m with a fairly steep eastern edge and a more gradual western edge made slightly irregular by rooting. The feature was filled with dark greyish brown loose sandy silt [2/004] with light yellowish green and grey clayey mottling, which contained occasional sub-rounded flint pebbles and abundant pottery sherds.

Also revealed in Trench 2 during the evaluation was a larger amorphous pit [2/005] with gradually sloping sides and a moderate break of slope into a concave base. The feature was filled with light grey fine, but compact sandy silt [2/006] with yellowish green clay mottling, which contained occasional sub-rounded flint pebbles, pottery sherds, small fine roots, sub-angular flints and rare animal bone fragments.

A large, fairly deep (0.7m), amorphous pit [3/014] (Figure 6 – Section 7) was c.3m wide and extended beyond the western edge of the Trench 3. This feature had moderately sloped concave sides with a fairly flat, even base. The fill [3/015] was dark grey fine silty clay with frequent patches of green organic cessy clay and occasional small sub-rounded flint pebbles. Although a few fragments of pottery were recovered from the feature, the relatively small size of the assemblage and the cess-like nature of the fill suggest that it was not used for general domestic refuse, but perhaps as a cess-pit.

5.9 Period 1, Phase 1.4 (Fig. 10)

5.9.1 Overview

At this assessment stage, it is postulated that once the majority of the pits detailed in Phase 1.3 were infilled, a building, represented by a ring gully was constructed on site. It is probable that some of the pits and postholes assigned to the earlier phase were still in use or even cut in Phase 1.4. However because the ring gully does clearly cut some of the infilled pits in the 'Central feature group', this sequence of land use is proposed as the best fit at assessment stage.

5.9.2 Possible building, ring gully: [162], [203] and [216]

Located in the centre of the site was a possible ring gully, [162], [203] and [216] with a diameter of approximately 5.7m. The northern curvilinear gully segment [162] (Fig. 10 – Sections 25) cut pits [152] and [202] and was sealed by deposit [128/149/201]. It was approximately 0.4m wide with depths of between 50mm and 200mm and was filled by a dark greyish brown sandy silt [130]/[163]/[217]. The southern curvilinear gully [203] had similar dimensions and contained a lighter fill [124]/[148]/[204] consisting of brownish grey sandy silt with orange mottling and rare pottery sherd inclusions.

The environmental sample taken from the ring gully was particularly rich in charred macrobotanical remains.

The gap located between the termini of gullies [162] and [203] appears to be a southeast facing entrance. However, the gully does not continue and meet in the northwest. It may that this part of the feature is now indiscernible, perhaps due to the nature of the deposit into which it is cut or as a result of natural scouring or truncation, but it is possible that the two gullies are unrelated. It seems possible, at this assessment stage, that the ring gully demarked the location of a building.

5.10 Period 1, Phase 1.5 (Fig. 11)

5.10.1 The ring gully [216] was sealed by a spread of dark greyish brown friable sandy silt [128/149/201] containing occasional flint gravels, pottery sherds and charcoal flecks. This deposit was spread over an area measuring *c.*7m by 2.5m with a depth of 200mm

5.10.2 Burial: [241]

A single infant inhumation [241] (SG12) (Fig. 11 – Section 27) was also uncovered within this area. The burial appeared to be sealed by the spread of colluvium [161] but it is possible that the grave cut was not visible. The grave was roughly rectangular and measure 0.7m northeast-southwest, 0.4m northwest-southeast and 250mm deep. The grave itself was fractionally too small for the infant which had been buried in it. The infant was buried in a supine position with the arms folded in across the torso. The infant's legs were elevated so as to fit within the confined space. It is interesting that the

grave was dug too small to accommodate the infant's body with ease; this suggests either quick, careless burial or limited space in the surrounding area. The absence of features directly around the burial does not support this, but may also be an indication of post-medieval truncation, particularly given the absence of subsoil covering this area.

No grave goods were present within the grave and only a couple of small, possibly residual, pottery sherds were recovered from the backfill. The large quantity of charred macrobotanicals found within the grave backfill are significant as they seem to have been deliberately incorporated into the grave. The presence of food remains in Roman burials is not uncommon as offerings of food, wine and flowers were regularly made (Taylor 2001 and Davis 2000). The preservation of the bones is particularly notable given the very low quantities of animal bone encountered at the site.

A sample of human bone from the infant burial SK-242 was submitted for AMS radiocarbon dating at the Scottish Universities Environmental Research Centre (SUERC). The purpose of dating the skeleton was to determine whether it was associated with the other archaeological features; owing to the very good preservation of the bone, it had originally been suspected that the skeleton might be of more recent date.

Details of the radiocarbon date are given in Table 2 quoted in accordance with the international standard, Trondheim convention (Stuiver & Kra 1986), and are given as conventional radiocarbon ages (Stuiver & Polach 1977). 2 Sigma calibrated dates, obtained using IntCal04 (Reimer *et al.* 2004), are also given at the 95% confidence level.

Lab Code	Context	Material	Analysis Method	Conventional Radiocarbon age (BP)	Delta C13	2 Sigma calibrated date (95% confidence)
SUERC-32547 (GU-22973)	242	Human bone	AMS	1750 ± 40	-20.7 ‰	Cal AD130-400

Table 2: AMS date for the sample of human bone from skeleton 242

The infant burial represent the latest securely dated Roman activity by some margin.

5.10.3 Posthole

A pottery-rich posthole [220] (SG107) was recorded cutting through gully [119]. This feature was 0.5m in diameter and 300mm deep. It contained light greenish grey compacted silty sand [221] with frequent large pottery sherds, and occasional gravel inclusions.

5.8 PHASE 4: Medieval

5.8.1 Overview

No features of medieval date were encountered during the Strip Map and Sample. However, a number of intrusive medieval artefacts were found in the excavation area and a single medieval ditch feature was uncovered during the evaluation stage in Trench 2. Interestingly, although later, this feature was also sealed by redeposited natural sand which supports the theory that the site has been exposed to periodic flooding episodes. The general hiatus of medieval activity evidenced at the site may be down to a shift in the area's economy to the Rainham Creek and its wharves. A considerable sheep and cattle stock was kept within the area with Rainham Creek being used for the transportation of stock to markets (Jacobs 2009). Extensive grazing on the marshes was established by 1200 (Jacobs 2009), so it is possible that the site was used as grazing pasture which would explain the negligible archaeological footprint.

5.8.2 Ditch : [2/009]

[2/009] (Fig. 12 – Section 28) was linear-shaped in plan and had a very steep, vertical western edge and an irregular base. The feature was 0.75m deep, and infilling with water during excavation. Some undercutting of the sides was present and probably resulted from water movement within the feature, perhaps suggesting a drainage ditch system. This feature was filled with dark greyish brown friable silty clay [2/010] with occasional sub-rounded flint pebbles and organic components such as fine twigs and degraded leaves towards the base of the feature. This feature, likely to be of mid 14th- to mid 15th- century date, established by green-glazed pottery and a local hard fired fine sand tempered oxidised cooking pot fragment found towards the base, truncates a square, undated pit [2/011].

5.9 PHASE 5: Post-medieval Activity

5.9.1 Overview

Post-medieval features relating to the late 19th century cottages were uncovered in the northern half of the excavation area with a surviving wall foundation also revealed in the south. Phase 5 activity consists of made ground and structural activity associated with the construction of two rows of cottages which were constructed at some time between 1882 and 1897. It also includes later demolition and modern layers. Surviving elements of the cottage foundations [196] (SG135) and associated services [257] (SG136) were revealed in this area in addition to several Victorian pits located to the rear of the cottages, which would have likely functioned as refuse disposal pits and garden features. All of the features encountered in this phase were cut into the natural sandy gravel substrate [160] and were sealed by demolition rubble [159] and made ground [259]. Only a sample of the post-medieval pits was excavated; the results for which are presented below. The unexcavated post-medieval features were recorded as SG 258.

5.9.2 Victorian Cottages: [159], [196], [257]

Remains of the late 19th century terraces survived in part in the northern and southern parts of the excavation area (SG135) (Fig. 13). The site was developed in the late Victorian period when the two rows of terraced cottages were built to the north and east (Fig. 15 OS 2nd Edition map 1897). The houses were built at the front of the plots facing onto Ferry Lane and Wennington Road (B1335), with gardens behind.

5.9.3 Pits/ Garden Features : [100], [103], [107], [117], [154], [258], [2/007], [2/013]

An oval steep-sided pit [100] (SG121) (Figs 13-14, Section 29) with a concave base, measuring 1.1m northwest-southeast and 0.7m northeast-southwest with a depth of 520mm, was encountered in the northwest of the excavation area to the rear of the Victorian cottages. This pit was filled with two fills: the lower fill [101] (SG122) consisted of light brownish yellowish grey sandy silt with rare gravel, a clay tobacco pipe stem, an animal bone fragment, a glass sherd and fine roots; the upper fill [102] (SG123) comprised dark grey loose sandy silt with occasional gravel inclusions, pottery sherds dating from 1840 to 1900 and fine roots.

A sub-circular pit [103] (SG126) (Figs 13-14, Section 30) to the northwest of pit [100], measured 1.3m north-south and 1.1m east-west with a depth of 320mm. Although no artefacts were recovered from the dark grey sandy silt fill [104], its proximity to other post-medieval pits and the Victorian cottages would suggest that it is of a similar date. No earlier remains were revealed within this area. Pit [107] (SG130) (Figs 13-14, Section 31) was located adjacent to this feature to the north. This pit was an elongated oval shape measuring 2.4m by 1.55 with a depth of 620mm. Four fills were encountered within this feature: the basal fill [108] was dark greyish brown silty sand; a natural slump of mid orange-yellow silty sand[109] was recorded on the southern edge; this was overlain by a dark greyish brown silty sand [110]

(SG132); the uppermost fill [111] (SG132) comprised mid orange-brown silty sand. No finds were recovered from these fills.

A large pit [117] (Figs 13-14, Section 32) measuring approximately 4.2m in diameter (as exposed) with a depth of 880mm, was located along the north-east edge of the excavation area. The pit had a flat base and steeply sloping sides, with evidence of undercutting, possibly as a result of the loose sandy substrate into which the feature is cut. This feature contained two fills: a natural yellowish orange silty sand slump in the base [136] (SG133), overlain by a mid greyish brown friable silty sand [135] (SG134) containing occasional CBM fragments, pottery sherds, a clay tobacco pipe with makers mark dating to c1740-1800 (RF <7>) and rare gravel inclusions.

A sub-square, heavily truncated, pit [154] measuring approximately 2m² with a depth of 300mm was encountered towards the north of the excavation area. The excavation slot through this feature revealed a moderately sloping straight sided pit with a flat base. The feature contained one fill [155] (SG129) consisting of mid brownish grey sandy silt with post-medieval glass, bottles and CBM fragments.

To the west of the excavation area, an amorphous post-medieval feature [2/013] was recorded in the southernmost end of Trench 2 during the evaluation. The feature containing dark greyish brown friable silty clay fill [2/014] was revealed extending beyond the extent of the evaluation trench and was observed in plan cutting through feature [2/009]. The feature was sealed by a lens of redeposited light orange gravely sand natural [2/015]. A slot was not excavated through this feature during the evaluation as mixed finds, such as oyster shell fragments, 17th-19th century peg tile fragments, mixed pottery sherds of early/mid 15th- to mid 16th- century date and animal bone fragments were collected from within the fill which were deemed sufficient to characterise it and suggest a likely function of refuse disposal. It is probable that the earlier pottery is residual from ditch [2/009].

Another post-medieval pit [2/007] was located in the northern end of Trench 2 during the Stage 1 evaluation. This feature truncated part of the Roman pit [2/005].. This feature was filled with dark grey clayey silt [2/008] with light green cessy mottling. A slot was not hand-excavated through this feature as finds, such as blue transfer-printed pottery wares, pottery sherds dating from c.1780 to 1810, clay pipes (c.1740-1840), CBM (17th-19th century peg tiles), glass fragments (18th-19th c.), animal bones were collected from within the fill which were deemed sufficient to characterise it and suggest a probable function of refuse disposal.

5.9.4 Gullies: [105] and [121]

A northwest-southeast gully [105] (SG124) (Figs 13-14, Section 33) crossed the central part of the site. The gully was truncated by a northeast-southwest drain and was generally very shallow, probably as a result of truncation/levelling activity during this phase. Excavation revealed that this feature was probably a service associated with the late 19th century cottages.

A similarly northwest-southeast aligned gully [121] (SG109) has also been assigned to this period due to is morphology, although no artefacts were recovered.

5.10 Undated Features

5.10.1 Linear Features: [5/008], [5/010]

Two potential linear features crossed the trench: the first on a north-south alignment [5/010] and the second orientated northeast-southwest [5/008]. Both of the potential features were investigated and recorded. Excavation revealed that the linear features were ephemeral and shallow; the ill-defined cut suggested a natural band of geology in which overlying silt had gathered. No artefacts were recovered from either of the fills during excavation.

The north-western end of the trench revealed several very dark irregular anomalies which were identified as tree-bowls through excavation. With the exception of frequent roots, the dark deposit was very sterile with uneven, undulating natural below. Loose, friable brownish grey silty sandy subsoil [5/005] with frequent rounded flint pebbles and gravels was recorded within this trench. As with Trenches 2 and 3, although some modern intrusion was present within this deposit, it did not contain the extent of modern debris suggestive of made ground seen in other trenches. A layer of loose, friable dark brownish grey clayey silt topsoil [5/001] covered all of the deposits within this trench.

6.0 FINDS AND ENVIRONMENTAL MATERIAL: QUANTIFICATION AND ASSESSMENT

6.1 Overview of Finds

6.1.1 The excavation produced the following categories of artefact: pottery, ceramic building material (CBM), animal bone, human bone, metalwork, metallurgic remains (slag), fired clay, glass and geological material. All finds were washed and dried or air dried as appropriate. Finds were all quantified by count and weight and subsequently bagged by material and context according to IFA guidelines. None of the finds require further conservation. Clay tobacco pipes (CTP) have all been discussed together, including pieces assigned a registered finds number, so as not to split them away from their functional type.

6.1.2 The finds assemblage is tabulated in Appendix II at the back of this report.

6.2 The Late Iron Age and Roman Pottery by Anna Doherty

6.2.1 Introduction

A moderate-sized assemblage of 661 sherds, weighing 13398g and amounting to 4.68 EVEs was recovered during the strip, map and sample. The assemblage is tabulated below (Table 2). The vast majority of this total dates to the 1st century AD and may be pre- or post-conquest in date. A small number of contexts contain pottery groups of a similar character containing a few Romanised fabrics or forms, including some types post-dating AD70. A very small proportion of the assemblage also appears to be of later Roman (probably c.3rd-4th century) date. Although the surface condition of the pottery is often quite poor, the average sherd size is unusually large, suggesting that the abrasion is the result of post-depositional conditions, rather than repeated re-deposition.

The pottery was examined using a x20 binocular microscope and quantified by sherd count, weight and EVE. The fabrics and forms were recorded on pro-forma recording sheets using LAARC/MOL codes (Marsh & Tyers 1979; Davies et al 1994). However, as this assemblage has more in common with south Essex pottery traditions than those from the City of London, fabrics and forms have been concorded to codes in use at Essex County Council Field Archaeology Unit, which are also referred in the text (Biddulph et al in prep).

6.2.2 Overview of fabrics and forms

Fabric	ECCFAU concordance	Sherds	Weight	Sherds %	Weight %
GROG	BSW	13	48	2.0%	0.4%
GROGSH	MICW	607	12574	91.8%	93.8%
HWC	HGG	5	54	0.8%	0.4%
NKWS	NKO	1	30	0.2%	0.2%
NVCC	NVCC	1	6	0.2%	0.0%
OXWS	OXWS	1	44	0.2%	0.3%

PORD	PORD	1	12	0.2%	0.1%
SAMLG	SWSG	1	6	0.2%	0.0%
SAMMV	SWCG	1	32	0.2%	0.2%
SAND	GRS	29	558	4.4%	4.2%
VRW	VRW	1	34	0.2%	0.3%

Table 3: Quantification of LIA/R Pottery Fabrics

As in the assemblage recovered from the evaluation trenches (ASE 2009), the pottery displays marked homogeneity. Well over 90% of fabrics are made up by a broad fabric grouping containing fairly variable quantities of grog, shell and sand, as well as occasional large, coarse flint inclusions. Within this fabric group, only two basic form types were recorded: about 85% are variants of Cam. 255 and 256, ranging from plain to slightly everted or beaded rim forms; the remainder are storage jars.

Other Late Iron Age/Early Roman pottery is made up by a very narrow range of types. The largest group, making up less than 5% of the assemblage as a whole, are Romanised grey wares. Some of these are still rather coarse sandy fabrics on a continuum with the tempered wares but, in a few cases, are associated with more developed, Roman necked jar forms, including 2D/G20 types. There are also a few sherds which fit within the 'Romanising' tradition of finer black-surfaced, sparsely grog-tempered wares, seen throughout Essex in the Late Iron Age/early Roman period. Four context groups contain sherds of Highgate C ware, again associated primarily with necked (2D/G20) jar forms. The assemblage also produced a few sherds of samian ware, including a partial stamp, as well as a single sherd of Verulamium region white ware and the neck of a flagon from the North Kent/Thameside industry.

A very small number of sherds are of later Roman date. These include quite large, fresh sherds from a folded, everted rim jar or beaker, as well as single sherds of Oxfordshire white-slipped mortarium, Nene Valley colour-coated ware and Portchester D ware. None of the late Roman pottery came from large well-dated groups and was, in fact, often found in association with much larger groups of Late Iron Age/early Roman pottery, suggesting cross-contamination between some deposits.

6.2.3 Dating

As already noted, the vast majority of the assemblage is made up by a single type of pottery which can be broadly dated to around AD10-70/80. Within this date range, the total absence of more certain Late Iron Age fabrics and forms makes it seem more likely that activity on site started close to the conquest although, as AD43 had no immediate impact on the ceramic record, it may have begun either before or after this date.

Interestingly, there appears to be little clear differentiation in date between pottery found below, within and above the flood deposit (Phases 1.1, 1.2, 1.3, 1.4, and 1.5). Features and layers from Phases 1.1 and 1.2 produced

relatively small quantities of pottery, but no 'Romanised' pottery was found prior to Phase 1.3; however, there are also several moderate-sized groups, from pits cutting the flood layer, [161], which are devoid of clear post-conquest material. Those groups from Phase 1.3 which do contain 'Romanised' fabrics usually feature just one or two sherds, sometimes alongside up to a hundred Late Iron Age /early Roman ones. Interestingly, some sealed groups of this type feature fabrics, including Highgate C ware, which can be securely dated to after AD70. This suggests that 'Romanised' pottery was probably rare or absent until the Flavian period. It seems unlikely that that any of the features from the initial post-flood activity were sealed after the early Flavian period, as we would probably expect a much greater degree of Romanisation in rural assemblages by the end of the 1st century.

The small quantity of later Roman pottery is consistent with a date range in the mid 3rd to 4th centuries, although there are no significant groups of this date. These sherds may be broadly contemporary with the radiocarbon-dated infant burial.

6.3 The Post-Roman Pottery by Luke Barber

6.3.1 Introduction

The evaluation and subsequent excavation work recovered 32 pieces of post-Roman pottery, weighing 1670g, from nine individually numbered contexts. Of these 18 sherds (475g) were from five evaluation contexts with the remainder deriving from the following excavation. Interestingly all of the medieval and Transitional pottery was recovered from evaluation contexts, with significant quantities of late post-medieval material being recovered from both phases of fieldwork. The pottery is in good condition, consisting of medium to large unabraded sherds. On the whole residuality appears to be very low. However, context groups are always small – the largest consisting of a mere eight sherds (597g) from [155] (SG129). The assemblage has been fully listed by fabric on an excel table for archive.

6.3.2 Dating

The earliest post-Roman pottery from the site consists of a single sherd (16g) from a reduced sand and sparse shell tempered cooking pot with out-turned rim recovered from [3/019]. An early/mid 12th- to early 13th- century date range is probable for this vessel. The only other sherd in this fabric, which could run well into the 13th century, consists of a small abraded and residual body sherd in [2/010] weighing 5g.

Two contexts produced later medieval/Transitional assemblages. The best of these was recovered from [2/010]. This deposit contained two large unabraded rim sherds (146g). One of these is from a local hard fired fine sand tempered oxidised cooking pot with flat-topped heavy club rim of mid 14th- to mid 15th- century date. The other sherd, of similar date, is from a Surrey whiteware (coarse border ware) cooking pot with flat-topped rim, internal drips of green glaze and applied oblique strip on its exterior (sooted) surface. Context [2/014] produced a slightly more ambiguous assemblage including two fine sand tempered sherds, one from a glazed jug (13g) the

other from an internally glazed cooking pot base (11g), which could be placed anywhere between the later 14th and early 16th centuries. However, the same context produced three sherds (75g) in fine, sand tempered high-fired oxidised earthenware which is more likely to be of early/mid 15th- to mid 16th-century date. The only recognisable form is a rod handle from an unglazed small jug. This context also produced a jar bodysherd (13g) in a similar (but reduced) fabric decorated with a white slip painted line typical of this period.

A small assemblage of late post-medieval pottery is also present. The earliest post-medieval material this was recovered from [2/008] which produced a group (6/193g) dated to c. 1780 – 1810. This includes two unabraded sherds, a tin-glazed earthenware bowl with blue band decoration and a post-medieval redware, which are either residual or old vessels as both would be more in keeping with a mid 17th- to early/mid 18th- century date. The remainder of this group is composed of creamware plates (2/32g), plain pearlware bowl (1/87g) and blue transfer-printed pearlware plate with Chinese landscape (1/46g). Two more blue transfer-printed plate fragments (3g), probably of early 19th-century date, were recovered from [1/002]. Both appear to be decorated with the willow pattern design.

The remaining assemblage is all of late post-medieval date and represents material recovered during the excavation. All of this material can be placed within an 1840 to 1900 date bracket and includes an unstratified complete unmarked English stoneware ginger beer bottle (531g). Pit [100], fill [102] (SG123) produced fragments from a yellow ware bowl with blue mocha decoration (1/3g), a green transfer-printed plate with 'CERES' pattern design (1/25g) and a small sherd from a refined white earthenware vessel of uncertain form (1/4g). Pit [117], fill [135] (SG134), which also contained Roman material, included a fragment (17g) from a Rockingham teapot as well as a further sherd (18g) from the same CERES pattern plate that was recovered from [102]. The only other to produced late post-medieval pot was pit [154], fill [155] (8/597g) (SG129). This group includes a complete unmarked English stoneware ginger beer bottle (486g), a small sherd (8g) of transfer-printed pearlware with Chinese building design, a plate and mug in refined white earthenware (3/35g), an English porcelain tea cup with gold gilt decoration (2/28g) and an unglazed earthenware handle with deliberately-added white concreted surface (1/40g). The latter sherd may be from a tourist souvenir.

6.4 The Ceramic Building Material (CBM) by Sarah Porteus

6.3.1 Introduction

A total of 74 fragments of ceramic building material (CBM) with a combined weight of 10983g were recovered from the works. The assemblage comprised a range of abraded material dating from the Roman to modern periods (Table 3). A summary of forms identified within each context is given in Table 4.

Phase	Count	Weight (g)
Post-medieval	28	8188

Phase	Count	Weight (g)
Medieval	41	1239
LIA/RB	18	1500
Undated	6	56
Total	**74**	**5060**

Table 4: Summary of Ceramic Building Material by Period

6.3.2 Methodology

The ceramic building material has been recorded on a recording form based on that of the Museum of London (MoL). The CBM has been quantified by fabric, form, weight, and fragment count. Fabrics have been identified with the aid of a binocular microscope and cross-referenced to the MoL building materials type series where available. Where no comparative fabric was identified a provisional fabric series has been drawn up. The data has been entered onto an Excel database. The material has been retained.

6.3.3 Fabrics and Forms

Roman (Period 1)
Contexts: [126], [182], [204], [206], [244], [245], [246]

Roman material was identified in two fabrics, one 'R1' was a fine sandy fabric with micaceous speckling, similar to MoL2815 fabric group made with red firing clays, a second fabric MoL2454, a pale creamy colour fabric often associated with originating from the Eccles area of Kent was also present within the assemblage.

Brick fragments in R1 from contexts [126] (SG24) and [182] (SG116) and a fragment in MoL2454 from context [126]. Where thickness could be measured the brick in R1 was of 38mm thickness and the fragment in MoL2454 was of 35mm thickness. The only other identifiable tile within the assemblage was a probable fragment of *Tegula* from context [204] (SG89) of 22mm thickness. The remainder of the material was represented by unidentified tile fragments.

Medieval (Period 2)
Contexts: [106], [151], [166], [198], [201], [206], [210], [244], [246], [2/014]

Medieval material was mostly represented by brick and tile in fabric T3, an orange-brown fabric with moderate coarse quartz and moderate voids with sparse calcareous inclusions and coarse flint and chalk. Peg tile in this fabric often had a reduced core and thicknesses ranged from 11 to 16mm. Brick in fabric T3 was very sandy in nature and no complete examples remained only abraded fragments. A single fragment of thicker glazed roof tile was recovered from context [210] (SG59). A brick in fabric B2, a sandier version of R1, are also of probable Medieval date, recovered from contexts [106] (SG125) and [166] (SG118) the brick fragments were of 38 and 43m thickness. The fragment from context [166] had a heat affected upper surface and may have been in use in a hearth. Accurate dating of the material,

beyond broad medieval, was not possible due to the undiagnostic features of the fragments.

Post-medieval (Period 3)
Contexts: [135], [155], [166], [182], [2/014]

Post-medieval material was represented by possible field drain fragments and peg tile in fabric T2, a sandy fabric with sparse moderate quartz and T1, a fine sandy fabric with abundant fine calcareous speckling and sparse coarse black iron rich inclusions of 17th to 19th century date. Brick was identified in a broadly post-medieval fabric, B1, a fine sandy fabric with micaceous sparkling and sparse coarse silt inclusions from context [166] unfrogged and of 60mm thickness. A second unidentified brick fabric, B3, and orange sandy fabric with moderate coarse quartz and coarse iron rich inclusions and sparse calcareous inclusions, nr MoL3032, unfrogged, abraded and of 50mm thickness are of probable 17th to 18th century date. Later brick fragments were identified from context [135] (SG134) and during the evaluation phase in the subsoil of Trench 1 fabric MoL3035, typical Kentish yellow stock brick, the bricks had a shallow rectangular frog and are likely to be of mid 18th to 19th century date. A final machine made small brick fragment of 20th century date was recovered from context [182] (SG116) in fabric MoL3038.

Undated
Context: [244], [145]

A fragment of undated tile in fabric T1 was recovered from context [244] (SG104) and a fragment of probable daub with rounded wattle imprint was recovered from context [145] (SG39). A fragment of burned mortar was also recovered from context [198] (SG17), the date of which is uncertain.

Context	Forms	Date range
106	Brick	Medieval
126	Brick	Roman
135	Brick, peg tile, tile	C17th-C19th
145	Daub?	Undated
151	tile	Medieval
155	Brick, peg tile, field drain	C17th-C19th
166	Brick	Medieval and possible early post-medieval
182	Brick, tile, pipe	Roman to 20th century
198	Tile and mortar	Medieval
201	Brick	medieval
204	*Tegula,* tile	Roman
206	Tile	Roman and Medieval
210	Glazed tile and brick	Medieval
244	Tile	Roman-medieval
245	Tile	Roman
246	Brick, tile	Roman, medieval
2/014	Peg tile	Medieval and post-medieval
Tr1 subsoil	Brick	Mid 18th-C19th

Table 5: Ceramic Building Material Forms by Context and Date Range

6.5 The Animal Bone Lucy Sibun

6.5.1 Introduction

The animal bone recovered from both the evaluation and excavation phases of work is tabulated below (Table 5). Twenty-eight contexts produced bone, dating from the Late Iron Age/Early Romano-British (LIA/ER) through to the Victorian period. The excavation assemblage, the majority of which dates to the LIA/ER phase, is in extremely poor condition and highly fragmented. In fifteen contexts the only bone present was less than 1 gram, recovered from the environmental samples. The evaluation assemblage dating from the medieval through the Victorian period is better preserved.

6.5.2 Methodology

Wherever possible, bone fragments have been identified to species and the skeletal element represented. The bone was identified using the in-house reference collection and Schmidt (1972). Where bone fragments were not identifiable to species or they have been recorded as cattle or sheep-sized. To assist with the MNE calculations and in an attempt to avoid the distortion caused by differing fragmentation rates, the elements have been recorded according to the part and proportion of the bone present.

Unfortunately, as a result of the fragmentation, only one complete element was present in the assemblage and this provided the only available measurement. Each fragment was scanned for signs of butchery, burning, gnawing and pathology.

6.5.3 The Results

The assemblage has been fully quantified and recorded in an excel spreadsheet. The Table below shows the Number of Identified Specimens (NISP) divided by species and phase. For the purposes of this report, fragments recorded as cattle or sheep sized have been included in the cattle and sheep totals respectively.

	Period 1: Late Iron Age / Early Roman	**Period 2: Medieval**	**Period 3: Post-medieval and Victorian**
Cattle	20		7
Sheep	5		7
Pig		1	1
Horse	4		4
Dog			3
Chicken			1
Small mammal	3		
Fish	1		
Total	***33***	***1***	***23***

Table 6: NISP Counts by Phase

6.5.4 Dating

Period 1: Phase 1.1, Late Iron Age / Early Roman

The only bone from contexts of this date was recovered from the environmental samples and consisted of less than 4 grams in total, none of which was identifiable.

Phase 1: Phase 1 3, Late Iron Age / Early Roman

Twenty one contexts dating to the LIA/ER post flood, Phase, 1.3 produced the largest assemblage of bone but only 33 fragments were identifiable. Cattle dominate the assemblage and are represented by cranial and longbone fragments, metapodials, vertebrae and ribs. Sheep are represented by longbone fragments, the majority of which are undiagnostic, horse by a metatarsal, teeth and a scapula. Undiagnostic longbone fragments from small mammals are also present as is a single fish vertebra. In all cases the minimum number of individuals represented (MNI) is one.

Ageing data is scarce and no evidence for butchery or pathology was noted. The absence of this data is likely to be a direct result of the poor preservation conditions on site.

Period 2, Medieval

One evaluation context [2/010] produced a single fragment of bone identified as a pig radius from a mature animal.

Period 3: Post-medieval and Victorian contexts

The latest phases of occupation on site produced 23 bone fragments. Cattle and sheep are represented by longbones, metapodials and ribs, horse by metapodials and longbones, dog, pig and chicken by longbones only. Ageing data was scarce but where available, indicated mature animals. Butchery was evident as a slice across the proximal end of a horse ulna and a transverse cut mark on a distal sheep radius. No pathology or gnawing was noted. The only complete element in the assemblage was a horse metacarpal, with a greatest length of 177mm.

6.6 **The Human bone** by Lucy Sibun

6.6.1 Introduction

A single grave was uncovered during the excavations [241] (SG12), containing single skeleton [242]. This was an isolated grave that produced no dating evidence. However, a bone sample was sent for radiocarbon dating, and provided a Romano-British date for the remains. The skeleton was in a good state of preservation, in sharp contrast to the poorly preserved animal bone on site.

6.6.2 Methodology

A complete skeletal and dental inventory has been produced for the skeleton. An age estimate has been attempted based on evidence for epiphyseal fusion (Bass, 1987; Buikstra & Ubelaker 1994) tooth development and eruption (Gustafson & Koch, 1974). No attempt was made to estimate the sex of the skeleton as it was immature. The skeleton was examined for any evidence of pathology. A sample of bone was sent to SUERC (Scottish Universities Environmental Research Centre) for radiocarbon dating.

6.6.3 Results

Skeleton [242] was the almost complete skeleton of an infant of approximately 4-5 years. There was no obvious pathology evident on the remains. The radiocarbon date of the remains was 1750 ± 40 BP (before present) with a calibrated date of 230-350AD (68.2%) probability) and 130-400AD (95.4% probability).

6.7 The Geological Material by Luke Barber

6.7.1 Introduction

The excavations at the site produced six pieces of stone, weighing 10,774g, from four individually numbered contexts. The assemblage has been fully listed on pro forma for archive and entered onto an excel database during the assessment stage. The assemblage is of two periods – Period 1, Late Iron Age / Early Roman and Period 3, late post-medieval.

6.7.2 Dating

Two contexts securely dated to the Late Iron Age /Roman period produced stone. Well [112], fill [126] (SG24) contained the largest assemblage, consisting of three pieces weighing 10,102g. These consist of two blocks of Kentish Lower Greensand, the largest of which (measuring 160 x 90 and weighing 2930g) has one side crudely faced, and an irregular piece (7kg) of siliceous Greensand chert. All are likely to be from wall construction but whether this relates to a building or the well lining is uncertain. Pit [240], fill [248] (SG100), dated to the 1st century AD, produced a fragment from a c. 400mm diameter, 65mm thick, rotary quern in German lava with vertically tooled edge (RF 8: 648g). This supplements evidence for crop processing provided by the macrobotanical assemblage (see 7.18.3)

The other two pieces of stone both consist of Welsh slate of 19th- century date. The fragment from pit [117], fill [135] (SG134) is from roofing, however, the piece from [2/008] (16g) is a polished school slate fragment with feint ruled lines at 9mm spacing on both faces.

6.8 The Metallurgical Remains by Luke Barber

6.8.1 Introduction

The archaeological work recovered 1138 pieces of slag, weighing 39,827g, from nine individually numbered contexts. The assemblage has been listed for archive on pro forma, with the data being input into an excel database (Table 6). With the exception of four probably 19th- century (66g) apparently intrusive in 1st- century post-hole [115], fill [116] (SG47), the entire assemblage appears to be of secure Roman date (1st- to early 2nd- century AD).

The vast majority of the assemblage was recovered from Period 1, Phase 1.3 well [112] (Table 6). Three of its fills produced slag (hand collected and from the environmental residues) although the vast majority was recovered from [126] (SG24) and [127] (SG23).

Fill	Sample	Furnace lining	Fuel Ash slag	Undiagnostic iron slag	Smithing slag	Hammerscale	Totals
125	11	-	88/140g	-	10/222g	-	**98/362g**
126	2 & 12	22/846g	-	232/3588g	236/28,937g	8/2g	**498/33,373g**
127	13	-	1/134g	494/3566g	27/2320g	5/1g	**527/6021g**
Totals		**22/846g**	**89/274g**	**726/7154g**	**273/31,479g**	**15/3g**	**1123/39,756g**

Table 7: Characterisation of Slag Assemblage from Well [112] (hand collected and environmental sample residues combined)

6.8.2 Types

Although a significant proportion of the slag from well [122] is not diagnostic of process (notably the furnace lining, fuel ash slag and undiagnostic iron slag) there is enough definite iron smithing slag present to be confident that the entire assemblage relates to this process. Included within this smithing slag are five circular/oval plano-convex, or concave-convex, forge bottoms, all recovered from [126]. These tend to be quite large: 130mm diameter (648g), 150 x 120mm oval (1614g), 150 x 140mm oval (2070g), 135 x 110mm oval (1034g) and 120 x 100mm oval (978g). Thicknesses vary between 35 and 65mm and there are frequently adhering lumps of slag on the upper surfaces and traces of oxidized sandy clay furnace lining on their undersides. It is quite clear that iron smithing at or near this site was undertaken on a significant scale, though not necessarily at an industrial level. The residues produced surprisingly small quantities of hammerscale. The few pieces that are present all consist of spheres rather than the more usual flakes, however, too little is present to comment on any significance of this. The low quantities of hammerscale do clearly show that the working area that produced this slag assemblage was not very close to well [112] as more hammerscale would be expected. It would appear the slag was brought some distance from the working area to deliberately infill the well.

Slag from other features (with the exception of post-hole [115] (SG46)) was

only located in the environmental residues and is present as insignificant quantities. Most consists of fuel ash slag, which could derive from any high temperature process, including domestic hearths (gully [119] (SG93) and post-hole [234] (SG75)) with the remainder being from smithing (hammerscale spheres) from gully [123] (SG86) and pit [207] (SG56). Quantities are so low (never more than 1g per feature) as to be insignificant.

6.9 **The Glass** by Elke Raemen

6.9.1 Introduction

A small glass assemblage was recovered, comprising 11 fragments (wt 1440g) from five different contexts. Almost all date between the mid 19th and mid 20th century, apart from two residual wine bottle fragments dating between the mid 18th and early 19th century. The whole assemblage has been recorded in detail on *pro forma* sheets for archive and data has been entered onto a digital register.

6.9.2 Overview of the Assemblage

Wine Bottles

These make up the majority of the assemblage. All are in green glass. The earliest piece consists of a fairly undiagnostic body fragment of mid 17th- to 18th-century date (pit [100], fill [101], (SG122), followed by a base dating to the mid 18th to early 19th century (feature [2/007], fill [2/008]). The remaining body fragments were recovered from pit [117] (fill [135], SG134), and date to the late 19th- to mid 20th-century.

Other Bottles

A green beer bottle fragment of late 19th- to mid 20th-century date was recovered from gully [105] (fill [106], SG125). A large proportion of an aqua codd bottle was recovered from pit [154] (fill [155], SG129). The bottle, of late 19th- to early 20th-century date, would have contained mineral water and is embossed "69 TRADE MARK" "PURITY SUPERIOR QUALITY" "JB", with on the reverse "BATES" "GRAYS" "W^{M} BARNARD LONDON".

In addition, pit [117] (fill [135]) contained a pale blue medicine bottle fragment with embossed spoon measurements. The fragment dates again to the mid 19th to early 20th century.

Other Vessels

Two clear wine glass fragments (pit fills [2/008] and [155]) were recovered. Two conjoining green glass jar fragments were also found in pit [154] (fill [155], SG129). All pieces date to the mid 19th to early 20th century.

6.10 **The Clay Tobacco Pipe (CTP)** by Elke Raemen

6.10.1 Introduction

The archaeological work produced eight clay pipe fragments (wt 40g) from five different contexts. The majority are from evaluation contexts. Considering the small number of recovered clay tobacco pipes, a large proportion displays maker's marks. Most are of 19th-century date, although an 18th-century bowl fragment was recovered as well. Bowls have been classified according to the London "Chronology of Bowl Types" by Atkinson and Oswald (1969, 177-180). Pipes have been recorded in full on *pro forma* sheets for archive. Data has been entered onto a digital register.

6.10.2 Overview of the Assemblage

Included are four plain stem fragments, all of mid 18th- to early 20th-century date. Only one complete bowl was recovered, RF <1>, which has been smoked. This, as well as three incomplete bowls, retains maker's marks, in all cases moulded in relief on the sides of the spur or heel. Three of the pipes can be identified with relative certainty to makers in nearby Romford. Makers include Henry Strutt, J. Balm and Mrs. P. Bellis. No maker with initials "JW" has been as yet registered for Essex. Various London makers with these initials were working within this period. A complete overview of all marked pipes can be found below.

6.10.3 Catalogue of Moulded Marks

HS RF <1> [2/008] AO28 (c1820-1840). Complete, smoked bowl with oak leave decoration on seams. Maker's initials moulded in relief on spur sides (S moulded in reverse). Probably referring to Henry Strutt, recorded in 1839 in Romford (Oswald 1975).
IB RF <2> [2/008] ?AO27 (c1780-1820). Spur only. Moulded leaf decoration in relief on part of stem and maker's initials on spur sides. Probably referring to J. Balme, recorded in 1823-8 in Romford (Oswald 1975).
JW RF <7> [135] AO26 (c1740-1800). Spur with maker's initials moulded in relief on spur sides and floral decoration moulded along the stem.
PB RF <3> [1/002] ?AO28 (c1820-1840). Spur with moulded initials in relief on sides. Probably referring to Mrs P. Bellis, recorded in 1851 in Romford (Oswald 1975).

6.11 The Metalwork by Elke Raemen

6.11.1 Only two fragments of bulk metalwork were recovered. Both are sufficiently diagnostic and neither warrant X-radiography for further identification. The earliest piece was recovered during the evaluation from pit [4/012] (fill [4/013]), dates by ceramics to the Late Iron Age to Early Roman period, and consists of an iron heavy duty nail shank fragment. The other fragment comprises a severely corroded strip fragment from a late post-medieval context (pit [100], fill [102], SG123). Neither piece requires x-ray, as the latter is late in date and too corroded to reveal much information, whereas the shank fragment is sufficiently diagnostic.

6.12 The Fired Clay by Elke Raemen

6.12.1 Introduction

A small assemblage of fired clay comprising 60 pieces (wt 1002g) from 15 individually numbered contexts. Fragments are mainly from contexts assigned to Period 1, Phase 1.3, although a few are from Period 1, Phase 1.1 contexts. The majority has been recovered from pits. Pieces are fairly abraded, resulting in a high number of featureless fragments.

Fired clay has been discussed by period, omitting the one amorphous fragment recovered from the topsoil.

All fired clay has been recorded in full on *pro forma* sheets for archive. Data has been entered into a digital register.

6.12.2 Overview of the Assemblage

Fabrics

Four different fabrics have been identified (Table 7). Raw material is likely to have derived from local clay sources. As the majority of clay is from the same phase and the assemblage is small, no observations can be made as to a chronologically differing use of clay and temper. The majority of fragments are in F1 (25 pieces), followed by F3 (21 pieces). Only one piece was found to be in F4.

Fabric	Description
F1	Sparse to moderate medium sand-temper. Occasional quartz to 2mm. Rare voids/organic temper to 1mm.
F2	Sparse fine sand-temper. Occasional iron oxide inclusions to 1mm. Rare quartz to 1mm. Rare voids/organics to 2mm.
F3	Sparse fine sand-tempered with moderate quartz inclusions to 1mm and occasional crushed flint to 2mm. Rare flint pebbles to 8mm.
F4	Sparse fine sand-tempered with moderate organic temper

Table 8: Overview of the Fired Clay Fabrics

Period 1, Phase 1.1

Only five fragments were recovered from contexts dated to Phase 1.1. Of these, three are amorphous whereas two pieces retain a flat surface. Four out of five pieces were found in posthole [214] (fill [213], SG5).

Period 1, Phase 1.3

The majority of fragments, (54 fragments), were found in Phase 3 contexts. Again, the majority of pieces are featureless, with a further 16 pieces preserving a flat surface. One of the amorphous fragments does retain a probable finger imprint (pit [152], fill [153], SG30). In addition, posthole [134] (fill [133], SG49) contained a clay fragment which had been wrapped around a wattle or round post, the latter leaving an impression (di 24.5mm). However, no other wattle imprints were noted. Fragments from well [112] (fill [126] and [127], SG24 and 23) are very high fired, which, together with the presence of furnace lining with adhering slag, suggest they derive from a

hearth or furnace.

6.13 **The Marine Shell** by Elke Raemen

6.13.1 Only the evaluation works produced marine shell, consisting of 23 pieces (wt 234g) from three different contexts. The main species consists of the oyster (*Ostrea Edulis*). Only one mussel (*Mytilis Edulis*) fragment was recovered from the site. The earliest piece, the mature, lower valve of an oyster, was recovered from pit [3/014] (fill [3/015]), which dates ceramically to the late Iron Age to early Roman period. The majority however was recovered from pit [2/013] (fill [2/014]), which contained the mussel fragment as well as 20 oyster fragments, representing a minimum of six individual oysters. All of these are immature. Pottery from the context is of early post-medieval date.

6.14 **The Flintwork** by Karine Le Hégarat

6.14.1 Overview

A total of five struck flints weighing 61g were recovered from the archaeological work at the site. The flintwork assemblage has been tabulated below (Table 8).

Context	Interpretation	Category	Count	Weight
215	Pit	Flake fragment	1	21
215	Pit	Flake	2	9.2
232	Pit	Retouched flake	1	16.5
239	Pit	Flake	1	14.3
	Total		5	61

Table 9: The Flintwork

6.14.2 Results

The pieces were manufactured from a honey coloured partly translucent fine grained flint with a thin dark cortex and a light to dark grey fine grained flint with lighter mottled patches, occasional cherty inclusions and a very thin buff cortex. Three flints were covered with small concretions. The assemblage consisted of four pieces of debitage recovered from pits [202] (fill [215] SG26) and [238] (fill [239] SG63) and a single retouched piece from pit [231] (fill [232] SG7). The unclassifiable retouched piece on a flake displayed some platform preparation and previous removal scars on its dorsal side. It exhibited some partial direct abrupt retouches on the right-hand edge towards the distal end.

6.15 **The Registered Finds** by Elke Raemen

6.15.1 Introduction

A total of eight finds were assigned unique Registered Finds numbers (RF

<00>; Table 9). Included are four clay tobacco pipes, which have been discussed with bulk pipe fragments in order not to split them from their functional categories. The quern stone fragment has been discussed with other stone. The only metalwork piece, of late post-medieval date, does not require further conservation nor does it warrant x-radiography.

1	2/008	PIPE	CERA	PMED	8
2	2/008	PIPE	CERA	PMED	6
3	1/002	PIPE	CERA	PMED	4
4	126	DISC	CERA	ROM	120
5	120	BEAD	GLAS	ROM	<2
6	155	HAND	COPP	PMED	26
7	135	PIPE	CERA	PMED	4
8	248	QUER	STON	ROM	642

Table 10: Summary of the Registered Finds

6.15.2 Overview of the Assemblage

The only dress accessory consists of a small annular, blue glass bead (RF <5>, di 3.5mm). This type of bead is not intrinsically dateable, however, it was recovered from gully [119] (fill [120], SG94) which dates to Period 1, Phase 1.3.

The second piece of Roman date consists of a disc (RF <4>) fashioned from a pottery base. Similar objects have been identified as counter rough-outs. Examples of these, both with the entire base utilised, were encountered at Colchester (Crummy 1983, Fig 98 nos 2449, 2450). The object is abraded along the external surface, which also exhibits some scratches, suggesting the counter was pushed along on that face. The function of these objects is as yet not clear, although a use as gaming counters is likely. The large size of this counter (di. 76mm) may be explained by the possible use of boards drawn on the ground or, alternatively, different counter sizes could represent different values (ibid, 94). The object was found in well [112] (fill [126], SG24), which is attributed to Phase 1.3.

In addition, a copper-alloy wire handle (RF <6>) from a small vessel was recovered from pit [154] (fill [155], SG129). The object is of late post-medieval date and is bent, therefore rendering it impossible to approximate the diameter of the vessel.

6.16 Environmental Samples: Macrobotanicals and Charcoal by Karine Le Hégarat and Lucy Allott

6.16.1 Introduction

A total of 39 bulk soil samples were taken during archaeological work at the Rainham Interchange and Library site (5 samples during the evaluation (ASE 2009) and 34 samples during the excavation to establish the presence of palaeo-environmental remains including charred and mineralised botanical material as well as fauna and mollusca and to assess their potential to provide information relating to the site. This report characterises these assemblages by providing an overview of the sample contents and by indicating the state of preservation of the remains and assesses their potential in adding to our understanding of the nature and levels of activities undertaken at the site such as fuel use and agriculture, the burial practices as well as the local vegetation environment. Thirty-eight samples were extracted from a range of Late Iron Age / early Romano-British archaeological features including gullies, ditches, pits, postholes, a well, an inhumation burial and a dark rectangular feature as well as from a contemporary natural spread/deposit. A single sample was extracted from a medieval linear-shaped feature.

6.16.2 Methods

The samples were processed in a flotation tank. The flots and residues were captured on 250µm and 500µm meshes respectively and were air dried prior to sorting. The residues were passed through 4mm and 2mm geological sieves and each fraction sorted for environmental and artefact remains (Table 10 in Appendix II). The flots were scanned under a stereozoom microscope at x7-45 magnifications and an overview of their contents recorded (Table 11 in Appendix II).

Preliminary identifications of the macrobotancial remains have been made using modern comparative material and reference texts (Cappers *et al.* 2006, Jacomet 2006, NIAB 2004). Abundance and preservation of the macrobotanicals have been recorded to establish their potential for further analysis. Nomenclature used follows Stace (1997).

Charcoal fragments in the richest samples were fractured and viewed under a stereozoom microscope (x7-45) to assess the preservation quality of wood structure and anatomical features required for identification. Although only viewed at a low magnification for the purposes of assessment it was possible to establish whether a range of taxa are likely to be represented and to provide some preliminary identifications through reference to Hather (2000) of woody taxa with comparatively large and distinctive anatomical structures for several of the assemblages. Any identifications made at this stage will be confirmed during analysis under an incident light microscope at magnifications of 50, 100, 200 and 400x.

6.16.3 Results

The size of the samples varied from 10L to 50L. The flots were generally

small with only nine samples (<1>, <2>, <2a>, <4a>, <11>, <12>, <13>, <20> and <30>) producing larger flots over 60ml in size. The archaeological work revealed a spread of sandy clay material which was interpreted as a probable flood event. Since the incident would have occurred at some point during the Late Iron Age/early Roman period, the results for this period have been divided (Period 1, Phase 1.1 for the pre flood and Period 1, Phase 1.3-1.5 for the post flood period). This aimed to establish whether there was a difference between the assemblage originating from pre flood deposits and the assemblage from post flood deposits. Since only four samples were taken from features grouped within Period 1, Phase 1.1, these are discussed together. However, for Period 1, Phase 1.2-1.5 occupation period, samples are presented by feature type, parent context and sub group. The results presented here provide an overview of the samples with emphasis placed on botanical remains and their potential to provide preliminary information regarding the agricultural economy, fuel use, burial practices and the local vegetation environment. Faunal remains such as fish, small and large mammal bones as well as non-marine mollusca are recorded in Tables 10 and 11 (Appendix II). The mammal bones (human and animal bones) as well as the pottery recovered from the burial backfill have been incorporated into relevant specialist reports.

6.16.4 Period 1, Phase 1.1: Late Iron Age to early Roman period - Pre Flood

A total of four samples (<27, 28, 31 and 34>) were examined from Phase 1.1 occupation period. Sample <27> was extracted from the lower fill [222] of posthole [213], sample <28> originated from the fill [228] of a gully terminus [227] and samples <31 and 34> came from pit fill contexts [232] and [254]. The samples contained a modest number of charred macroplants which were moderately to poorly preserved. The small assemblage of charcoal was principally represented by fragments <4mm (and often <2mm) in size. Within the flot from sample <31>, several fragments of vitrified charcoal were observed. All four samples provided limited evidence for charred crop remains revealing grains of barley (*Hordeum* sp.), wheat (*Triticum* sp.) and unidentified caryopses (Cerealia). Sample <28> (fill [228] SG11) which produced the richest assemblage of charred plant remains, contained infrequent glume bases some of which were identified as glumes of spelt wheat (*Triticum spelta*). A small quantity of wild/weed seeds was also recovered including knotgrass/dock (*Polygonum/Rumex* sp.), seeds from the goosefoot (Chenopodiaceae) family, several currently unidentified grass seeds (Poaceae) as well as cleaver/woodruff (*Galium* sp./*Asperula arvensis*) which is typical of arable or otherwise disturbed soils, vetch/tare (*Vicia/Lathyrus* sp) associated with grassland and arable places and a single probable hawk's beard (cf. *Crepis* sp.) which grows on grassland or disturbed grounds.

6.16.5 Alluvium (Phase 1.2)

Sample <19> from a natural deposit [201] SG219 (distinct from the spread associated with the possible flood event) produced a moderate quantity of charred botanicals including crops remains (caryopses of wheat (*Triticum* sp.) some of which were grains of free-threshing wheat (*Triticum* cf. *aestivum*) as well as some indeterminate cereal grains (Cerealia), some chaff components

including glume bases of spelt wheat (*Triticum spelta*) and fork spikelets). Potential charred crop seeds were represented by common pea/vetch/tare (*Pisum/Vicia/Lathyrus* sp.). Identified charred wild/weed seeds were similar to those encountered in the archaeological features and comprised knotgrass/dock (*Polygonum/Rumex* sp.), stinking mayweed (*Anthemis cotula*), oat/brome (*Avena/Bromus* sp.), unidentified grass (Poaceae) seeds as well as seeds from the goosefoot (Chenopodiaceae) family. This sample produced a small assemblage of wood charcoal containing oak, hazel/alder/hornbeam and other unidentified taxa. Sediment concretions were present on many of the fragments.

6.16.6 Period 1, Phases 1.3-1.5: Late Iron Age to early Roman period - Post Flood

Thirty-four samples were taken from deposits dated to Phase 1.3-1.5 occupation. Four originated from a possible well, one from an inhumation burial, thirteen from pits, five from gullies, six from postholes, three from ditches (one of which might be a pit), one from a dark rectangular feature and one from a deposit/spread.

Well (Phase 1.3)

Charred wood fragments were particularly abundant in the four samples extracted from well [112] SG22 (<13> from the lower fill [127] SG23, <12> and <2> from the mid fill [126] SG24 and <11> from the upper fill [125] SG25). Fragments of oak (*Quercus* sp.), ash (*Fraxinus excelsior*) and hazel/alder/hornbeam (*Corylus/Alnus/Carpinus* sp.) as well as other unidentified taxa were noted during assessment. Preservation was variable in each of these large assemblages and although sediment infiltration is apparent in a large proportion of the fragments, many remain identifiable with sufficiently clear anatomical features.

Charred macrobotanicals were also evident in the assemblage. There were a moderate quantity of charred crop remains including grains of barley (*Hordeum* sp.), wheat (*Triticum* sp.) some of which were grains of free-threshing wheat (*Triticum* cf. *aestivum*), some indeterminate cereal grains (Cerealia) and a probable legume (cf. Fabaceae) as well as a single potential charred crop seed (common pea/vetch/tare (*Pisum/Vicia/Lathyrus* sp.)). A small amount of wild/weed seeds was also recorded including oat/brome (*Avena/Bromus* sp.), cleaver/woodruff (*Galium* sp./*Asperula arvensis*), several currently unidentified grass (Poaceae) seeds as well as one unidentified seed. The macrobotanical remains were moderately to poorly preserved and comprised grains which were highly distorted. The samples extracted from the well deposits also produced a large amount of industrial debris. These were more frequent in the mid and lower fills and included slag, vesicular material, glassy material, magnetic remains and spherical hammerscales. This material probably relates to iron smithing in the vicinity of the well (see 6.8.2)

Pits (Period 1, Phases 1.3-.1.5)

A total of thirteen samples <1a, 3a, 5a, 8, 9, 26, 18, 10, 25, 21, 22, 23 and 33> were taken from ten Period 1, Phases 1.3-1.5 pits. No macroplants were

recovered from sample <23> taken from the fill [212] of pit [211]. Samples <1a> from pit [2/003] (fill [2/004]), <3a> from pit [3/014] (fill [3/015]), <21> from pit [205] (fill [206] SG61), <22> from pit [207] (fill [208] SG57) as well as <8 and 9> from pit [143] (fills [145] SG39 and [144] SG38) were almost devoid of macrobotanical remains. These were more abundant in samples <33> from pit [238] (fill [239] SG63), <5a>=<26> from pit [4/012]=[152] (fill [4/013]=[153] SG30) and <18> from pit [156] (fill [157] SG32). Finally, samples <10 and 25> from pit [150] (fill [151] SG34) produced the richest assemblage. Crop remains recorded in the samples were similar to those in previous features and included caryopses of wheat including free-threshing wheat, barley, indeterminate grains and some chaff remains. The chaff components, noted only in three pits, (samples <5a = 26, 18 and 33>) included glume bases (some of which were identified as glumes of spelt wheat) and unidentified spikelet forks. The preservation of the remains in the grain-rich samples <10 and 25> was moderate to poor with several distorted and puffed up caryopses. A small amount of other possible charred crop seeds were also recorded including common pea/vetch/tare (*Pisum/Vicia/Lathyrus* sp.). The samples contained a variety of wild/weed seeds such as knotgrass/dock (*Polygonum/Rumex* sp.), buttercup (*Ranunculus* sp.), stinking mayweed (*Anthemis cotula*), knapweed (*Centaurea* sp.), oat/brome (*Avena/Bromus* sp.), cleaver/woodruff (*Galium* sp./*Asperula arvensis*), unidentified grass (Poaceae) seeds, probable sedge (cf. *Carex* sp.), flax (cf. *Linum* sp.), nipplewort (cf. *Lapsana communis*), campion (cf. *Silene* sp.) as well as seeds from the goosefoot, pink, daisy and carrot (Chenopodiaceae, Caryophyllaceae, Asteraceae and Apiaceae) families and several unidentified seeds.

Charcoal fragments were predominantly small, <2mm in size, and infrequent in the majority of the pit deposits sampled. However, samples <10 and 25> from pit fill [151] SG34 produced a slightly larger quantity of moderately well preserved charcoal including some large (>15mm) fragments. Both assemblages include some sediment infiltrated pieces which may restrict the level of identifications obtainable, nevertheless, oak and non-oak taxa were noted.

Postholes (Period 1, Phase 1.3)

Small assemblages of charred wood fragments were observed in samples <4, 6, 14, 15, 16 and 32> taken from postholes [115] (fill [116] SG47), [134] (fill [133] SG49), [170] (fill [171] SG74), [188] (fill [189] SG72), [186] (fill [187] SG36), [234] (fill [235] SG76). The majority of charcoal fragments are <4mm (and often <2mm) in size and are poorly preserved, presenting little opportunity for further identification.

Charred macroplants were recovered from all samples, including both crop remains and wild/weed seeds similar to those encountered in previous features. The wild/weed seeds were typical of grassland, arable or otherwise disturbed soils and included knotgrass/dock (*Polygonum/Rumex* sp.), stinking mayweed (*Anthemis cotula*), vetch/tare (*Vicia/Lathyrus* sp.), cleaver/woodruff (*Galium* sp./*Asperula arvensis*), oat/brome (*Avena/Bromus* sp.) and other currently unidentified grass (Poaceae) seeds. Samples <14, 15 and 16>

contained relatively high concentrations of seeds when the small size of the features is taken into account.

Rectangular feature (Period 1, Phase 1.3)

Well preserved charred chaff and cereal seeds were present in sample <4a> extracted from the fill [2/012] of a dark rectangular feature [2/11] dated to Phase 1.33. A large proportion of the very fine charred material in the flot consisted of small chaff fragments. Identifiable elements included wheat glume bases of spelt (*Triticum* cf. *spelta*) and emmer (*Triticum cf. dicoccum*), rachis fragments some of which may be barley (*Hordeum* sp.) and awn fragments that may be identifiable. Cereal grains of non-free threshing wheat (*Triticum* spp.), hulled barley (*Hordeum* sp.) and wild or cultivated oats (*Avena* sp.) were also common. A small quantity of possible bromes (cf. *Bromus* sp.) and other wild grasses were also noted. Infrequent charcoal fragments, including some small roundwood, were present in this sample.

Ditches (Period 1, Phase 1.3)

Samples <17 and 30> were taken from three ditch features from Phase 1.3 occupation. The residue of sample 17> produced a few reasonably well preserved charcoal fragments. No charred macroplant remains were present in sample <30>. Although no flot was produced from sample <17>, infrequent charred crop remains of wheat (*Triticum* sp.) as well as some indeterminate cereal grains (Cerealia) and some charred wild/weed seeds of oat/brome (*Avena/Bromus* sp.) were observed in the residue.

Gullies (Period 1, Phases 1.3 and 1.4)

Samples <5> and <20> were extracted from two slot trenches [123] (fill [124] SG87) and [203] (fill [204] SG20) excavated through a gully feature and samples <1, 7 and 24> were taken from three other gullies [119] (fill [120] SG94), [140] (fill [141] SG41) and Phase 1.4 gully [216] (fill [217] SG81). The presence of charred plant remains varied amongst these five samples. Wood charcoal fragments were present, but infrequent, in each sample. Roundwood fragments and oak charcoal were noted, however, preliminary assessment of these small assemblages revealed poor preservation, in part due to sediment infiltration. Several vitrified fragments were also noted.

Although all samples contained charred macrobotanical remains, samples <1> and <24> were particularly rich. Charred cereal remains recovered from the five samples consisted of grains of wheat including free-threshing wheat, barley as well as some indeterminate caryopses and some chaff remains. Glume bases including glumes of spelt wheat and unidentified spikelet forks were evident in samples <1, 20 and 24>. Potential charred crop seeds were represented by common pea/vetch/tare (*Pisum/Vicia/Lathyrus* sp.). The recorded wild/weed flora consisted of knotgrass/dock (*Polygonum/Rumex* sp.), knapweed (*Centaurea* sp.), oat/brome (*Avena/Bromus* sp.), probable fescue/rye-grass (cf. *Festuca/Lolium* sp.) and other currently unidentified grass (Poaceae) seeds, cleaver/woodruff (*Galium* sp./*Asperula arvensis*), vetch/tare (*Vicia/Lathyrus* sp.), seeds from the goosefoot (Chenopodiaceae) family as well as one probable seed from the sedge (cf. Cyperaceae) family.

The residue from sample <1> contained a bead, which is included in the finds report.

Inhumation burial (Phase 1.5)

Charred botanical remains from the grave backfill [243] of inhumation burial [241] SG12 were surprisingly abundant. Although sample <29> produced only a small assemblage of wood charcoal fragments, the deposit yielded a large amount of charred macrobotanical remains including cereal as well as wild/weed seeds. The preservation was very variable; however the majority of the remains were of moderate to poor quality. The crop assemblage included caryopses of wheat (*Triticum* sp.) some of which were grains of free-threshing wheat (*Triticum* cf. *aestivum*), barley (*Hordeum* sp.) as well as some indeterminate cereal grains (Cerealia) and some chaff remains including glume bases (some of which were identified as glumes of spelt wheat (*Triticum spelta*)), unidentified spikelet forks and rachis fragments. The assemblage of wild/weed seeds, so far identified, comprised oat/brome (*Avena/Bromus* sp.), probable fescue/rye-grass (cf. *Festuca/Lolium* sp.) and other unidentified grass (Poaceae) seeds as well as knotgrass/dock (*Polygonum/Rumex* sp.), vetch/tare (*Vicia/Lathyrus* sp.), a seed from the goosefoot (Chenopodiaceae) family and two seeds of stinking mayweed (*Anthemis cotula*). A small amount of pottery was present in the residue.

6.16.7 Phase 4: medieval

Linear feature

The assemblage of charred macrobotanicals present in sample <2a> taken from a linear feature [2/009] (fill [2/010]) was represented by numerous cereal grains of non-free threshing wheat (*Triticum* spp.), hulled barley (*Hordeum* sp.) and wild or cultivated oats (*Avena* sp.), chaff remains including glume bases of spelt (*Triticum* cf. *spelta*) and emmer wheats (*Triticum cf. dicoccum*), rachis fragments some of which may be barley (*Hordeum* sp.) and awn fragments) and wild/weed seeds including possible bromes (cf. *Bromus* sp.) and other wild grasses. Only a small quantity of wood charcoal was present in this sample.

6.16.8 Phase 5 Post-medieval

Sample <3> from the fill [122] SG110 of ditch terminus [121] contained the richest assemblage of macrobotanical remains. This sample includes moderately well preserved grains of wheat and barley, wild/weed seeds such as stinking mayweed (*Anthemis cotula*), oat/brome (*Avena/Bromus* sp.), unidentified grass (Poaceae) seeds as well as seeds from the goosefoot (Chenopodiaceae) family.

7.0 OVERVIEW & SIGNIFICANCE OF RESULTS

7.1 Introduction

7.1.1. This section seeks to address the original research agenda as well as highlighting new areas of potential and speculating as to the significance of the results which assessment of the stratigraphic, finds and environmental archives have highlighted.

7.2 The Stratigraphic Sequence: Iron Age / Roman

7.2.1 Summary

Late Iron Age/Roman activity dominates the archaeological sequence and has produced data with the potential to add to our understanding of the socio-economic status of this area of Rainham at the time. The site was predominantly characterised by linear and curvilinear ditches/gullies, postholes and pitting with the major period of activity dominating the 1st to 2nd centuries with some later 3rd to 4th century activity evidenced by artefacts recovered from features.

7.2.2 Depositional sequence

The depositional sequence is interesting because the rapidly laid down alluvium (Period 1, Phase 1.2) seals a possible early phase of activity, comprising of a probable building with associated pits. The site then appears to be fairly quickly re-occupied with the building re-built or replaced and a similar manner of activity undertaken. If this hypothesis is correct, it demonstrates the importance and repeated occupation of this locality.

7.2.3 Nature of the Iron Age/ Roman remains: buildings and agri-industrial activity

There are several elements which appear, at this assessment stage, to define the character of the Period 1, Late Iron Age / early Roman evidence and highlight the significance of the remains. The evidence can perhaps be best characterised as agri-industrial with speculated quarrying for sands / gravels, crop processing and metalworking taking place in the immediate or near vicinity of the site. In addition, there is the possibility, given the character of the assemblage, that some pottery production may have taken place, although there is no direct evidence for this.

It is probable that the ring gully represents the location of a building, potentially comprising two phases of construction / repair (evidence by the Period 1 Phase 1.1 segment of ring gully and the more complete Period 1 Phase 1.2 example). It is possible that this building is associated with agri-industrial use (a workshop for example), rather than a more traditional farmstead because of the type and range of artefacts recovered from the site. In peripheral areas, roundhouse style construction continued into the Roman period and has often been found with associated industrial debris (metalworking) (MoLaS 2000, 138). Although fairly limited, the evidence from Rainham does, at this assessment stage seem to fit this pattern.

7.2.4 Burial

The final aspect of interest is the infant burial, which represents the latest Roman evidence. The burial has some potential for further understanding funerary rites, particularly because of the charred plant remains recovered from it and, as is detailed in the human bone report, is intrinsically interesting because it is so well preserved in comparison to the animal bone.

7.3 The stratigraphic sequence: medieval and post-medieval

7.3.1 CBM fragments of medieval date were recovered from across the excavation area. However, no features associated with this period were encountered within the excavation footprint and only one medieval ditch was recorded during the evaluation in the southwest corner of the site. The site has not potential for the medieval period

7.3.2 With the exception of one ditch in the south-western corner of the site containing mid 14th to mid 15th century pottery there is an almost total cessation of archaeological activity from the 4th century until the post-medieval period. This hiatus of activity at site may be evidence that the site was unoccupied farmland during this period. Evidence of post-medieval activity in the form of refuse pits/garden features associated with the remains of the Victorian cottages was also uncovered during the excavations at the site.

7.4 The Late Iron Age and Roman Pottery by Anna Doherty

7.4.1 Discussion

As in the evaluation assemblage, there is a clear tendency for the mixed-tempered fabric, which dominates the assemblage, to feature patches of pronounced differentiation in firing-colour and many of the sherds feel unusually light, suggesting over-firing. These traits, together with the unusually narrow range of the assemblage, perhaps suggests that pottery was being produced in the vicinity, although there is no evidence of kiln structures or furniture and no badly-warped wasters in the assemblage. However, as such vessels may have been fired in simple bonfire kilns, which leave little archaeological trace, this does not rule out the possibility of local production

Some use-wear evidence, including sooting and limescale, do suggest that this is a consumption assemblage. Populations in close proximity to kilns might have used ‘seconds’ i.e. vessels which were less marketable because of minor imperfections. Perhaps the saturation of the local market might explain a relative lack of demand for a wider range of fabrics and forms from further afield. However, since there is no clear-cut evidence for production in the vicinity, there may be other explanations for the homogeneity of the assemblage. Perhaps these particular jar forms were linked to a specific functional activity, for example, some kind of local production, requiring containers for storage or transport.

7.4.2 Significance and potential

Although the assemblage is only of moderate size, it has some regional significance because much of it derives from large pit groups, which are considered likely to represent deliberate deposition, perhaps of secondary refuse. Amongst the key sub-groups identified for further analysis are phase 1.3 pits SGs 30, 45, 104, 34, 29, 57 and 39, as well as one moderate-sized group from the flood layer SG17. The possible indirect evidence of production is also of some interest and worthy of further analysis and discussion.

7.5 The Post-Roman Pottery by Luke Barber

7.5.1 Although the assemblage from the evaluation includes some interesting medieval and Transitional pieces the quantities are too low to warrant any further analysis beyond that done for the assessment. The late post-medieval assemblages from both the evaluation and excavation are also small and on the whole composed of fairly typical domestic wares of the period.

7.6 The Ceramic Building Material by Sarah Porteus

7.6.1 The ceramic building material assemblage contains a wide range of material. The abraded nature of the material suggests a degree of movement of the material post-deposition, a number of fragments are small and intrusion of material to earlier contexts is possible. The Roman material is suggestive of a tiled structure, though this may include tiled burial monuments of Roman date. The material of medieval date may have been transported via ploughing or silting events to the location. The post-medieval material consists of typical fabrics and forms for the London area and contains no fragments of special interest. The ceramic building material provides broad dating evidence for the features in which it occurs. The CBM assemblage has little significance.

7.7 The Animal Bone by Lucy Sibun

7.7.1 The animal bone assemblage is both small and in poor condition, rendering it largely uninformative. No further analysis of the assemblage is recommended and statistical analysis of results would not be worthwhile. A summary of results will be produced for the final report.

7.8 The Human Bone by Lucy Sibun

7.8.1 The good condition of preservation of the infant skeletal remains is interesting, particularly as it is in sharp contrast to the poorly preserved animal bone on site. The reasons for the location of this burial should be more fully explored within the publication text. The significance of this burial may be of interest with regard to the Romano-British activity at the site.

7.9 The Geological Material by Luke Barber

7.9.1 The stone assemblage is small and lacks diversity. The number of worked pieces is also very low. As such the assemblage is not considered to hold any potential for detailed further analysis and no separate report is proposed

for publication. However, the presence of the German lava quern fragment and source of the Roman building material should be mentioned in the integrated site narrative.

7.10 The Metallurgical Remains by Luke Barber

7.10.1 The slag assemblage from the site is interesting in that it clearly demonstrates significant levels of iron smithing in the vicinity during the 1st to early 2nd century. However, smithing is a relatively common activity seen on Roman rural sites and the actual working area/hearths do not appear to be within the investigated area. As such the slag represents waste transported an unknown distance from its production site to help infill the well and as a result does not hold any potential for further analysis beyond that undertaken for assessment. The significant assemblage from well [112] should be described in the site narrative using data from this assessment, but no separate report on the slag is proposed for the publication.

7.11 The Glass by Elke Raemen

7.11.1 The assemblage lacks any large groups suitable for analysis. Fragments appear isolated, mainly in pit fills. Their nature, e.g. wine and beer bottle fragments and a mineral water bottle, suggests the majority of the assemblage constitutes casually discarded items, such as can often be found on wasteland, rather than domestic refuse. As such, the assemblage is of no potential for further analysis.

7.12 The Clay Tobacco Pipe by Elke Raemen

7.12.1 Considering the small assemblage, a large proportion of pipes displays maker's marks, most of which can be identified to local makers. As such, the assemblage as a whole provides a good local group. They give thereby an indication of distribution of pipes for these particular makers and more broadly contribute to our understanding of these distribution patterns.

7.13 The Metalwork by Elke Raemen

7.13.1 As both pieces of the recovered metalwork appear isolated, the assemblage is not considered to be of potential for further analysis.

7.14 The Fired Clay by Elke Raemen

7.14.1 The assemblage is small and overall lacking diagnostic features. However, it is likely that the fragments represent structural daub. Most material was recovered from pits, suggesting they could have been redistributed from a wider area. The small size of the assemblage also implies that it is not possible to establish any concentrations of material. As such, the assemblage is considered to lack in significance. There is no potential for further analysis.

7.15 The Marine Shell by Elke Raemen

7.15.1 The assemblage is too small to be of potential for further analysis. No further

work is required.

7.16 The Flintwork by Karine Le Hégarat

7.16.1 The flint assemblage displayed no technical traits to assist with dating and given their condition, therefore it is not considered to have any potential for further analysis.

7.17 The Registered Finds by Elke Raemen

7.17.1 Although only a small assemblage, evidence is present for recreational activities during Phase III, shedding some light on the occupants of the site. Crop processing on or near the site during this period is evidenced by the quern fragment.

7.17.2 The handle however contributes little to our understanding of late post-medieval activities on the site. The assemblage is therefore of mixed potential.

7.18 Environmental Samples: Macrobotanicals and Charcoal by Karine Le Hégarat and Lucy Allott

7.18.1 This assessment has confirmed the presence of environmental remains including significant quantities of charred macrobotanicals and a moderate amount of wood charcoal, unburnt and burnt mammal bones as well as infrequent fish bones, fragments of mollusca, land snail shells and fly puparia. Although charcoal and a fairly broad range of charred macrobotanical remains were present in most samples, quantities differed to some extent with significant amounts of charcoal observed within deposits from only one feature (well [112]) and larger concentrations of macrobotanicals in several samples. It should be noted that no significant variations were observed in the macrobotanical assemblages from the three land use phases.

7.18.2 Preservation

Botanical remains were preserved by carbonisation and there was no evidence of preservation by waterlogging or mineralisation. Although uncharred botanicals were evident in several samples, in most cases these did not dominate the flots. In fact only a quarter of the flots contained over 75% of uncharred material and 60% of the flots produced less than 40% of uncharred vegetation. This consisted mainly of fine modern roots and uncharred seeds such as elder (*Sambucus nigra*), blackberry/raspberry (*Rubus fruticosus/idaeus) and* nettle *(Urtica sp.).* As there was no evidence for waterlogged deposits at this site, the seeds are probably modern or relatively recent contaminants introduced through root action and could be associated with the garden known to be on the site in the 19th century.

Preservation was variable and although numerous seeds and elements of chaff were well preserved the overall preservation of the remains was moderate to poor. Several remains, charcoal in particular, contained sediment particles, others were highly distorted and puffed but they were only

occasionally fragmented. An inconsistent state of preservation was observed both within individual samples and between features. A small to moderate quantity of charred plant remains (including charcoal fragments and caryopses) were percolated by sediment which can be an indication of fluctuating ground water or an indication of repetitive flooding events. In a damp environment associated with fluctuations in ground water tables or recurring inundations, sediments often percolate charcoal fragments and other remains, which can result in poor preservation characterised by internal damage to, and obscuring of, anatomical structures. Considering the proximity of the river and the evidence for a flood event at this site, this aspect of preservation is not surprising.

On the whole, caryopses of wild grass species tended to display better preservation than cereal grains. Several caryopses were highly distorted and puffed up (occasionally at the apex end) while others were still attached to the spikelet. This differentiation could suggest that the remains originated from several sources and represented discarded waste and background scatters derived from a range of domestic activities. However, the different degrees of preservation of the remains noticed within individual samples could also be explained by differential charring and preservation conditions, related to temperature, oxidizing/reducing conditions and moisture content (Boardman and Jones 1990). The charred remains present within each sample could therefore have originated from single primary contexts. With the exception of a few damaged chaff elements, overall, the charred macroplant remains were not highly fragmented suggesting the assemblages have not been subject to repetitive phases of deposition or redeposition. Some plant remains do appear to have been affected by post-depostional events (perhaps even fluctuations in the watertable) associated with damp conditions. Nevertheless, no distinctions could be made regarding the preservation of the pre and post flood assemblages.

7.18.3 Crop remains and evidence for agriculture

Charred crop remains were well represented in the majority of the archaeological features as well as in the natural deposit. They were particularly abundant in samples <29> originating from an infant inhumation burial, samples <5a, 10 and 25> taken from pits, samples <1 and 24> from gully features, samples <14 and 16> from postholes, sample <3> from a ditch, <4a> from a rectangular feature and sample <2a> from a linear feature. They included a wide range of caryopses but also frequent chaff components. Grains of wheat (*Triticum* sp.) and barley (*Hordeum* sp.) were common in the assemblage and although the majority were not identified beyond the genus level, occasional grains of free-threshing wheat (*Triticum* cf. *aestivum*) were evident in samples <15, 16, 19 and 24> dated to the post flood Phase 1.3 occupation. Chaff components can assist in identifying the range of glume wheat species (either emmer or spelt wheat). Moderately well preserved examples were present in samples <29> from the grave backfill, <19> from a spread/deposit, <4a > from a rectangular feature and <2a> from a linear feature, which contained significant quantities of chaff elements including glume bases, some of which were identified as glumes of spelt wheat (*Triticum spelta*) and emmer wheat (*Triticum cf. dicoccum*) as well as some unidentified spikelet forks and rachis fragments.

The assemblage of charred crop remains consists of a general combination of species which are characteristic of the Late Iron Age / early Romano British period. Hulled wheat species represent the main cereal crops cultivated during the Middle/Late Iron Age - Early Roman and although spelt represents the major cereal during the Romano-British period, varying quantities of emmer are found alongside spelt in Kent and Essex during the Late Iron Age (Stevens 2009, p. 43). Barley appears to also be an important crop at the site. The presence of free-threshing wheat *(Triticum* cf. *aestivum)* together with glume bases is interesting. Free-threshing wheat is generally found only sporadically in Late to Early Roman deposits and it wasn't until the Late Roman period that this species of wheat became significantly more prominent progressively replacing the hulled wheat varieties and eventually representing the main crop during the Saxon period. No germinated grains were identified during the assessment.

The presence of glume bases of emmer and spelt wheat together with wild/weed seeds is highly indicative of domestic activities relating to crop processing within the immediate excavated area. In order to protect the grains, hulled wheat was sometimes stored in spikelet form, the grains being separated from the glumes before being grinded on a routine basis (Hillman 1981). The presence in pit [240] of a rotary quern in German lava (RF 8) could be associated with this repeated activity. Assemblages indicative of crop processing wastes have been observed in several features and could represent general burnt domestic debris either scattered over the site and amassing gradually in open features or they could have been deliberately discarded when the features were backfilled (see case of the grave, below).

Non cereal crop remains include a probable seed of flax from pit fill context [153]. Potential crop remains were also present in numerous features and included oat/brome and common pea/vetch/tare. Analysis should aim to refine the identifications of these taxa where possible to help determine if the remains represent the wild or cultivated species.

Assemblages from Uphall Camp (Greenwood *et al*. 2006), Swanscombe (Giorgi, 2010) and Springhead (Campbell, 1998) have produced similar charred botanical evidence but evidence from local sites is less frequent. Although work at major enclosures such as Moor Hall Farm has revealed the presence of field systems (Greenwood 1982), dung beetles and waterlogged plant remains (Greenwood, 1997), evidence for charred crop remains remain sparse. Local sites such as Southall Farm (AOC 2004) have also failed to produce evidence for Late Iron Age / early Romano-British agricultural practices and crop processing activities.

The assemblage of crop remains is interesting as it provides evidence for the use of a range of crops, which could have been either grown locally or brought to the site from further afield. It should be possible to refine their identifications and these could provide further information regarding the importance of individual crop species as well as crop processing activities.

7.18.4 Wild/weed seeds and the vegetation environment

The majority of the charred wild/weed seeds taxa indicated consists of common arable seeds or represents plants which grow on grassland or on disturbed grounds. The presence of larger wild/weed seeds such as cleaver/woodruff, vetch/tare, oat/brome, probable fescue/rye-grass and other unidentified grass as well as knotgrass/dock within the features containing chaff elements is interesting as larger wild/weed seeds are often associated with the latest crop processing stage, after winnowing and sieving. Although the majority of the seeds are associated with arable habitats and could have been brought to the side alongside the cereals, they could also simply represent natural vegetation in the vicinity of the site. They might also provide evidence for plants used for fodder, especially oat, brome and rye grass. The presence of stinking mayweed in several features including the infant burial is interesting as it is regarded as a crop weed species introduced by the Romans (Godwin 1984 cited in Stevens 2009). The plant thrives especially on heavy clay soils and as the site is located on a combination of sandy gravels and sandy clays its presence suggests that it could have been brought to the site which may in turn indicate cultivation of heavy clay soils. Two probable sedge seeds which are associated with damp grounds conditions provide limited evidence that other environments were exploited.

7.18.5 The infant burial

The grave burial [241] contained a significant amount of charred macrobotanicals including crop remains as well as wild/weed seeds. This sample might be of interest as although placement of food within inhumations dated to the Roman period is known (Davis 2000), patterning in the type of food used is not well defined (Van der Veen *et al*. 2007). While the remains could represent general burnt domestic waste, which happened to be part of the grave backfill, the quantity seems to indicate that the remains were deliberately incorporated in the feature.

7.18.6 Charcoal: fuel use and wood vegetation

The charcoal assemblage is small and as noted above preservation was variable, but generally poor due to sediment infiltration. Charcoal fragments are too infrequent in samples from Phase 1, pre-flood LIA to Early Roman, deposits to warrant further identification or analytical work.

Several samples from Phase 2, LIA to Early Roman post-flood, deposits produced somewhat larger assemblages, well feature [112] in particular. Charcoal was abundant in each of the well deposits sampled, and although identification of many of the fragments might be restricted by poor preservation, fragments are sufficiently abundant to extract assemblages suitable for analysis and initial indications are that a range of taxa are represented. Smithing debris in the well (see Barber) provides a potential origin for the charcoal assemblage although no actual features relating to this activity are evident at the site. Analysis and identification of charcoal fragments from these deposits presents some potential to examine the range of taxa used for fuel within the industrial process although it should be noted that interpretation of the assemblages may be restricted as they could derive from several deposits amalgamated during the backfilling of this well feature. Fuel used on a large scale for such industrial purposes is likely to originate

from nearby woodland, that might have been managed and this assemblage therefore holds some potential to examine the likely composition of this woodland.

Although charred macrobotanical remains were moderately common in the sample from inhumation burial [241], charcoal fragments were infrequent and may have been present in the soil used to back fill the grave rather than being directly associated with the burial or even with the charred plant remains. The remaining samples from phase 2 deposits present very little potential for further analysis as the assemblages are small and poorly preserved. In addition, gully, ditch and spread deposits may have accumulated gradually incorporating charcoal fragments from several unknown sources. By contrast charcoal fragments recovered in samples <10 and 25> from pit feature [150] are perhaps more likely to be associated with the rich charred grain assemblages.

Charcoal fragments in the Phase 4 sample are too infrequent to provide significant information regarding vegetation or fuel use.

8.0 REVISED RESEARCH AIMS

8.1 The majority of the aims identified for the excavation were addressed by the evidence recovered, and in the light of the assessments above a number of further research aims were identified. These are listed below.

- *To investigate the site within the local Late Iron-Age / Early Roman context. Considerations of the site's significance and the potential character of further discoveries in the area will be taken into account. Particular reference will be made to the forthcoming MoLA volume detailing the archaeology of the East London Gravels (Howell J I, Swift D and Watson B with Cotton J and Greenwood P., forthcoming, MoLA monograph series no. 54)*

- *To investigate the site within the wider context of the Roman settlement of Rainham and beyond.*

- *Can further, detailed examination of the site stratigraphy clarify site formation processes? Has the alluvial deposition covering parts of the site been observed at other nearby sites?*

- *Can close analysis of the features ascertain association and function and determine whether there is any further ephemeral structural evidence surrounding the post-hole clusters?*

- *To compare the pottery data retrieved from this investigation with assemblages from different areas of Rainham and other nearby sites.*

- *To attempt to further clarify the nature of the site; its industrial, agricultural, and occupational character, drawing together evidence from the stratigraphic sequence and the finds and environmental evidence*

- *To examine whether any significant changes in the nature of activity on site can be detected in the finds and environmental assemblages across the different phases of Period 1*

- *How does the infant burial fit in with the nature of activity encountered at the site? What is its significance to the site's story?*

- *What is the significance of the well feature containing large quantities of industrial slag?*

- *The geological and environmental context of the site will be considered this will involve investigation of landscape use in terms of geological parameters. The underlying geology may have influenced the vegetation of the site and thereby the landscape organisation whether this be occupational activity or agricultural and industrial practises. What do comparison of the plant and charcoal assemblages from this excavation and from other nearby sites assist in our understanding of local agricultural economy, environment and diet during the evidenced periods of activity?*

- *The finds and environmental archive has huge potential to inform as to the socio-economic status of the town during the medieval period, and also the diet, farming, building etc of the town and its locale. How does this compare with other sites of similar status and size?*

- *Is there any artefactual evidence for trade-links; importation and exportation?*

9.0 METHODOLOGY: ANALYSIS & PUBLICATION

9.1 The Stratigraphic Sequence

9.1.1 After completion of the specialist analysis, reporting and research, an integrated period-driven narrative of the site sequence will be prepared. This will draw on specialist information in order to fully address the revised research aims. The details of these specialist reports have been summarised below. The narrative will include relevant selection of period/phase plans, sections, photographs and finds illustrations.

9.1.2 The site's stratigraphic sequence will be discussed by phases of activity and land use at the site. The points discussed in 6.1 of this report will be assessed thoroughly within this part of the publication text.

9.1.3 The narrative will then be assessed within the broader context of Rainham with comparisons being drawn from the multitude of excavated sites located within the town.

9.1.4 Time/Resource Allocation

Comparative reading & research	2.5 days
Stratigraphic analysis, grouping, land use	3.5 days
Prepare publication text/ integrate specialist information	4 days
Total	*10 days*

9.2 The Late Iron Age and Roman Pottery by Anna Doherty

8.2.1 Integration of evaluation assemblage into dataset	0.5 day
Analysis of key feature assemblages, after pits are further grouped during stratigraphic analysis	1 day
Further reading on regional parallels for the assemblage	0.5 day
Extraction of sherds for illustration and illustration checking	0.5 day
Total	*2.5 days*

9.2.2 Pottery illustration

It is recommended that one representative key group should be illustrated alongside any other pieces of intrinsic interest, amounting to c.15-20 illustrations.

9.3 The Post-Roman Pottery by Luke Barber

9.3.1 No further analysis is proposed for the post-Roman pottery assemblage. A note on the presence of the key pieces should be included in the final site narrative but no separate report is proposed for publication and no pieces need be illustrated.

9.4 The Ceramic Building Material by Sarah Porteus

9.4.1 No further analysis is proposed for the post-Roman pottery assemblage. A note on the presence of the key pieces should be included in the final site

narrative but no separate report is proposed for publication and no pieces need be illustrated.

9.5 The Animal Bone Lucy Sibun

9.5.1	Production of summary report	0.25 day
	Total	*0.25 day*

9.6 The Human Bone

9.6.1 Although there is no potential for further analysis of the skeletal remains, a discussion of the significance of the burial will be included within the site discussion.

9.7 The Geological Material by Luke Barber

9.7.1 Although the geological material recovered from the site requires no further analysis, the presence of the German lava quern fragment and source of the Roman building material should be mentioned in the integrated site narrative.

9.8 The Metallurgical Remains by Luke Barber

9.8.1 Although no separate report on the slag is proposed for the publication, the significant assemblage from well [112] should be described in the site narrative using data from this assessment.

9.9 The Glass by Elke Raemen

9.9.1 Finds have been recorded in full on pro forma sheets for archive and a digital datasheet has been prepared. No further work is required. A short note is recommended briefly outlining and discussing the assemblage.

9.10 The Clay Tobacco Pipe by Elke Raemen

9.10.1 The assemblage has been recorded in full on pro forma sheets for archive. It is proposed that a short note be included in the publication, largely drawing from the above assessment. In addition, it should be attempted to identify the maker of RF <7>.

0.5 day

Total *0.5 day*

9.10.2 RF <1> is recommended for illustration.

9.11 The Metalwork by Elke Raemen

9.11.1 The assemblage has been recorded in full, both on pro forma sheets and digitally. No further work is warranted. A short note is recommended briefly outlining and discussing the assemblage.

9.12 The Fired Clay by Elke Raemen

9.12.1 The assemblage has been recorded in full on pro forma sheets for archive

and a digital archive has been prepared. The assemblage does not require further work and it is recommended that, where required for the narrative, information is drawn from the report in 6.12.

9.13 The Marine Shell by Elke Raemen

9.13.1 The assemblage has been recorded in detail on pro forma sheets for archive. All data has been entered on a digital spreadsheet. No further work is required. A short note is recommended briefly outlining and discussing the assemblage.

9.14 The Flintwork by Karin Le Hégarat

9.14.1 No further work is required. A short note is recommended briefly outlining and discussing the assemblage.

9.15 The Registered Finds by Elke Raemen

9.15.1 Finds have already been recorded in full on pro forma sheets for archive. A short note is recommended briefly outlining and discussing the Roman assemblage. This should be accompanied by an illustration of the pottery counter. No further work is recommended on the late post-medieval handle.

	0.25 days
Total	*0.25 days*

9.16 Environmental Samples: Macrobotanicals and Charcoal by Karine Le Hégarat and Lucy Allott

9.16.1 Although many of the charred macrobotanical remains were regarded as being in a moderate to poor state of preservation, well preserved remains are sufficiently numerous to provide good potential for examining the evidence for agricultural economy and vegetation environment during the Late Iron Age / early Roman and medieval phases of occupation. Analysis is recommended for macrobotanical remains from 16 samples (listed below) which have the potential to contribute to our interpretation of the site activities related to crop processing as well as to our understanding of agricultural practices and local landscape. Macrobotanical analysis will comprise quantifying, confirming and refining the preliminary identifications made during assessment and integrating the data obtained from these assemblages with records from other sites in the area.

9.16.2 Further analytical work is also recommended for charcoal fragments from two features (well [112] and pit [150]) which have some potential to contribute to the interpretation of these features. The large charcoal assemblages from well [112] will be subsampled using a riffle box and identified through comparison with modern reference material and reference atlases. Analysis will aim to establish the range of taxa represented, any evidence for the type of woodland exploited and, for samples from the well, whether the charcoal assemblages can be associated with the smithing remains that are also present in the feature.

9.16.3 Time Requirements

Charred Macrobotanical remains (16 samples)

For chaff components: <5a = 26 and 18> - pits; <29> - grave; <24> - gully; <19> - natural deposit; <2a> - linear feature; <4a> - rectangular feature

For cereals: <5a = 26, 10 = 25 and 18> - Pits; <29> - grave; <1, 24 and 28> - gullies; <14, 15 and 16> - postholes; <3> - ditch; <2a> - linear feature; <4a> - rectangular feature

For wild and weed seeds: <29> - grave; <10 = 25> - pits; <1> – gullies; <14, 15 and 16> - postholes; <3> - ditch

Where significant quantities of charred macrobotanical remains were noted in the residues during sorting sub-samples (of samples <19, 24, 28, 29 and 10>) have been retained for further analyses.

Analysis and identification	4.5 days
Data entry and manipulation	0.5 days
Report writing / literature consultation	2 days
Total	*7 days*

Charcoal (6 samples)

Well feature [112], samples <2, 11, 12, 13>, Pit [150], samples <10=25>

Analysis, identification and data entry	1.5 days
Report writing / literature consultation	0.5 day
Total	*2 days*

10.0 PUBLICATION AND ARCHIVING PROPOSALS

10.1 Publication Synopsis

10.1.1 The Rainham Interchange and Library site forms one of a growing series of archaeological investigations in the Rainham area and as such, the findings are certainly worthy of publication. The results of the current phase of work indicate further evidence for Late Iron Age/Roman activity within the area and also aid our understanding of the evolution of the town from this period through to modern times. Many of the features contained well sealed datable artefacts, which can facilitate our understanding of the kind of activity that was undertaken in the region at that time, as well as providing possible evidence for trade links to and from Rainham during the Romano-British period.

10.1.2 It is proposed that an article will be presented in the county journal, *Essex Archaeology and History.* The article will present the results from all phases of archaeological investigations at the site, including the preceding archaeological evaluation of the site (ASE 2009b). Reference will be made to other relevant sites in the area, in an attempt to put the results into a local and regional context. Information provided by the various specialists will be included within the publication and appropriate maps and plans will illustrate the text.

10.1.3 Specialist contributions will be undertaken as outlined in the relevant sections on further work above. These will be presented within an integrated site narrative with supporting specialist data were required. The archaeological features and deposits will be considered on a chronological, spatial and functional basis and in relation to the revised research aims. The article will include illustrations.

10.1.4 It is proposed that the article will follow the publication synopsis outlined below, resulting in an article of approximately 7000 to 9000 words. The word count for each section has been approximated in brackets.

Working title

Excavations at Rainham Interchange and Library Site, Ferry Lane, Rainham, London Borough of Havering, 2009-2010

Introduction *(c.500)*
Circumstances of fieldwork and background (100)
Site location, geology and topography (100)
Archaeological and Historical background (200)
Methodology (75-100)

Excavation results *(c. 1300)*
Site Stratigraphy (100)

Integrated narrative text by phase:

Period 1 – The Iron Age / Early Roman remains

Phase 1.1: Pits and postholes (100)
Curvilinear Gully Segment – the first phase of building? (50)
Overview of pre-flood episode activity (100)

Phase 1.2: Overview of the natural alluvial deposition separating Phases 1.1 and 1.3: (100)

Phase 1.3: Quarrying, iron working and crop processing?:
Pitting (150)
Postholes/structural activity? (100)
?Well (75)

Phase 1.4 The roundhouse / ?workshop (200)

Phase 1.5 and 1.6: The end of Roman use of the site and the infant Burial (150)

Periods 2-3 : Brief overview of the medieval / post-medieval remains cessation (200)

***Specialist data** (integrated into stratigraphic text where necessary)*
The Late Iron Age and Roman Pottery (c.900)
The Animal Bone (c.450)
The Clay Tobacco Pipe (c.300)
The Registered Finds (c.350)
Environmental Samples: Macrobotanicals and Charcoal (c.3000)

***Discussion** (suggested topics) (c.800-1500)*
Site formation (natural deposits, activity layers, cut features)
The site in its setting
Character of the site; economy and resource basis, domestic/industrial, the changing land use of Late Iron Age/Roman occupation. Local and regional significance; comparative assessment of other sites in the locality, development of the town

Summary and Conclusions (150)

Acknowledgements

Bibliography

***Figures**: Selected plans, sections, photographs and artefact illustrations*

10.2 Artefacts and Archive Deposition

10.2.1 Following completion of the post-excavation work the artefacts recovered during the archaeological work will be offered to a suitable repository to be agreed by the archaeological consultant with the landowner and the County Archaeologist.

11.0 RESOURCES AND PROGRAMMING

11.1 Staffing / project team

The proposed analysis and publication will be undertaken by the project team outlined below:

Team Member	Initials	Tasks
Kathryn Grant	KG	Site Analysis; Report Production; Archive Collation
Jim Stevenson	JS	Post-Excavation Project Manager / editing
Anna Doherty	AD	Late Iron Age/Roman Pottery Analysis
Elke Raemen	ER	The Registered Finds and Clay Tobacco Pipe
Lucy Sibun	LS	Bone analysis and reporting
Lucy Allott Karine Le Hegarat	LA KLH	Macrobotanical remains and Charcoal analysis and reporting
Fiona Griffin	FG	Finds Illustration and Publication figures

Table 13: The Project Team

11.2 Resource Allocation

11.2.1 The resources that will be allocated to each task are tabulated below (Table 13). These resources will enable a publication text as outlined above (see Chapter 9) to be produced and the site archive deposited.

Task	Team Member	Person Day
Stratigraphic		
Comparative reading & research	KG	2.5
Stratigraphic analysis, grouping, land use, matrices	KG	3.5
Prepare publication text and integrate specialist information	KG	4
Specialist Analysis and Reporting		
LIA/R pottery analysis and text	AD	2.5 days
Registered Finds	ER	0.25 day
Animal Bone	LS	0.25 day
Clay Tobacco Pipes	ER	0.5 day
Environmental: Macrobotanical Remains	LA/KLH	7 days
Environmental: Charcoal Remains	LA/KLH	2 days
Illustration		
Prepare plans and sections for publication	FG	2 days
Pottery Illustrations 15-20 vessels	FG	2.5 days
Registered Finds Illustration	FG	0.5 day
Production		
Project management	JS	1.5
Editing	JS/DS/LR	1
Preparation and deposition of archive	NB	1
Publication Grant		Fee

Table 14: Resources Required for Analysis and Publication

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Appendix I: Context Registers
Quantification of the Contexts from the Stage 1 Evaluation

STAGE 1 EVALUATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	PERIOD	PHASE
1/001	Deposit	Topsoil	-	1/001	-	-
1/002	Deposit	Made ground	-	1/002	-	-
1/003	Deposit	Natural	N	1/003	-	-
2/001	Deposit	Topsoil	-	2/001	-	-
2/002	Deposit	Subsoil	-	2/002	-	-
2/003	Cut	Oval pit	P	2/003	1	1.3
2/004	Fill	Fill of 2/003	-	2/003	1	1.3
2/005	Cut	Amorphous pit	P	2/005	1	1.3
2/006	Fill	Fill of 2/005	-	2/005	1	1.3
2/007	Cut	Post-medieval pit	P	2/007	3	-
2/008	Fill	Fill of 2/007	-	2/007	3	-
2/009	Cut	Medieval ditch	D	2/009	2	-
2/010	Fill	Fill of 2/009	-	2/009	2	-
2/011	Cut	Dark rectangular feature	P	2/011	-	-
2/012	Fill	Fill of 2/011	-	2/011	-	-
2/013	Cut	Victorian Pit	P	2/013	3	-
2/014	Fill	Fill of 2/013	-	2/013	3	-
2/015	Deposit	Redeposited natural lens	NO	2/015	-	-
2/016	Deposit	Natural	N	2/016	-	-
3/001	Deposit	Topsoil	-	3/001	-	-
3/003	Deposit	Natural	N	3/001	-	-
3/005	Deposit	Subsoil	-	3/005	-	-
3/014	Cut	Amorphous pit	P	3/014	1	1.3
3/015	Fill	Fill of 3/014	-	3/014	1	1.3
3/016	Cut	Gully terminus	D	3/016	1	1.3
3/017	Fill	Fill of 3/016	-	3/016	1	1.3
3/018	Cut	Gully cut in L-slot	D	3/018	1	1.3
3/019	Fill	Fill of 3/018	-	3/018	1	1.3
3/020	Cut	Amorphous pit	P	3/020	1	1.3
3/021	Fill	Fill of 3/020	-	3/020	1	1.3
3/022	Cut	Amorphous pit	P	3/022	1	1.3
3/023	Fill	Fill of 3/022	-	3/022	1	1.3
4/001	Deposit	Topsoil	-	4/001	-	-
4/002	Deposit	Made ground	MG	4/002	-	-

STAGE 1 EVALUATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	PERIOD	PHASE
4/003	Deposit	Natural	N	4/003	-	-
4/004	Deposit	Dirty natural spread	NO	4/004	1	1.2
4/005	Cut	Gully	D	4/005	1	1.3
4/006	Fill	Fill of 4/005	-	4/005	1	1.3
4/012	Cut	Amorphous Pit	P	4/013	1	1.3
4/013	Fill	Fill of 4/012	-	4/013	1	1.3
5/001	Deposit	Topsoil	-	5/001	-	-
5/003	Deposit	Natural	N	5/003	-	-
5/005	Deposit	Subsoil	-	5/005	-	-
5/006	Deposit	Tree bowl/rooting	TH	5/006	-	-
5/008	Cut	Linear Feature	D?	5/008	-	-
5/009	Fill	Fill of 5/008	-	5/008	-	-
5/010	Cut	Linear Feature	D?	5/010	-	-
5/011	Fill	Fill of 5/010	-	5/010	-	-

Quantification of the Contexts from the Stage 3 Excavation

STAGE 3 EXCAVATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	SUB-GROUP (SG)	PERIOD	PHASE
100	Cut	Pit	P	100	121	3	-
101	Fill	Lower Fill of 100	-	100	122	3	-
102	Fill	Upper Fill of 100	-	100	123	3	-
103	Cut	Pit	P	103	126	3	-
104	Fill	Fill of 103	-	103	127	3	-
105	Cut	Gully (terminus)	D	105	124	3	-
106	Fill	Fill of 105	-	105	125	3	-
107	Cut	Pit	P	107	130	3	-
108	Fill	Lower Fill of 107	-	107	130	3	-
109	Fill	Slumped deposit in 107	-	107	131	3	-
110	Fill	Mid fill of 107	-	107	132	3	-
111	Fill	Upper fill of 107	-	107	132	3	-
112	Cut	Well	W	112	22	1	1.3
113	Cut	Posthole	SP	113	84	1	1.3
114	Fill	fill of 113	-	113	85	1	1.3
115	Cut	Posthole	SP	115	46	1	1.3
116	Fill	fill of 115	-	115	47	1	1.3
117	Cut	Pit	P	117	133	3	-
118	Deposit	Subsoil	-	118	120	1	1.3
119	Cut	Gully	D	119	93	1	1.3
120	Fill	Fill of 119	-	119	94	1	1.3
121	Cut	N-S ditch (terminus)	D	121	109	1	1.3
122	Fill	Fill of 121	-	121	110	1	1.3
123	Cut	Gully	D	123	86	1	1.3
124	Fill	Fill of 123	-	123	87	1	1.3
125	Fill	upper fill of 112	-	112	25	1	1.3
126	Fill	mid fill of 112	-	112	24	1	1.3
127	Fill	lower fill of 112	-	112	23	1	1.3
128	Deposit	spread	-	128	119	1	1.3
129	Cut	Gully	D	129	82	1	1.3
130	Fill	Fill of 129	-	129	83	1	1.3
131	Cut	Posthole	SP	131	77	1	1.3
132	Fill	Fill of 131	-	131	77	1	1.3
133	Fill	Fill of 134	-	134	49	1	1.3

STAGE 3 EXCAVATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	SUB-GROUP (SG)	PERIOD	PHASE
134	Cut	Posthole	SP	134	48	1	1.3
135	Fill	Fill of 117	-	117	134	1	-
136	Fill	Slump deposit in 117	-	117	133	1	-
137	Cut	Gully	D	137	95	1	1.3
138	Fill	Slump deposit in 137	-	137	95	1	1.3
139	Fill	Main fill of 137	-	137	96	1	1.3
140	Cut	Gully	D	140	40	1	1.3
141	Fill	Lower fill of 140	-	140	41	1	1.3
142	Fill	Upper fill of 140	-	140	42	1	1.3
143	Cut	Pit	P	143	37	1	1.3
144	Fill	Lower fill of 143	-	143	38	1	1.3
145	Fill	Upper fill of 143	-	143	39	1	1.3
146	Cut	Gully	D	146	90	1	1.3
147	Fill	Natural silting in 146	-	146	91	1	1.3
148	Fill	Fill in 146	-	146	92	1	1.3
149	Deposit	spread	-	149	119	1	1.3
150	Cut	Pit	P	150	33	1	1.3
151	Fill	Fill of 150	-	150	34	1	1.3
152	Cut	Pit	P	152	29	1	1.3
153	Fill	Fill of 152	-	152	30	1	1.3
154	Cut	Pit	P	154	128	1	-
155	Fill	Fill of 154	-	154	129	1	-
156	Cut	Pit	P	156	31	1	1.3
157	Fill	Fill of 156	-	156	32	1	1.3
158	Fill	Mid fill of 143	-	143	38	1	1.3
159	Layer	demolition activity	DS/MU	159	139	3	-
160	Layer	Natural sandy gravels	N	160	19	-	-
161	Deposit	sandy-clay spread/flood episode	NO	161	16	1	1.2
162	Cut	Gully (terminus)	D	162	78	1	1.3
163	Fill	Fill of 162	-	162	79	1	1.3
164	Cut	Pit	P	164	20	1	1.3
165	Fill	Fill of 164	-	164	20	1	1.3
166	Fill	Fill of 167	-	167	118	1	1.3
167	Cut	NW-SE Ditch	D	167	117	1	1.3
168	Cut	Pit	P	168	54	1	1.3

STAGE 3 EXCAVATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	SUB-GROUP (SG)	PERIOD	PHASE
169	Fill	Fill of 168	-	168	55	1	1.3
170	Cut	Posthole	SP	170	73	1	1.3
171	Fill	Fill of 170	-	170	74	1	1.3
172	Cut	Posthole	SP	172	66	1	1.3
173	Fill	Fill of 172	-	172	66	1	1.3
174	Cut	Posthole	SP	174	67	1	1.3
175	Fill	Fill of 174	-	174	67	1	1.3
176	Cut	Posthole	SP	176	68	1	1.3
177	Fill	Fill of 176	-	176	68	1	1.3
178	Cut	Posthole	SP	178	69	1	1.3
179	Fill	Fill of 178	-	178	69	1	1.3
180	Cut	Posthole	SP	180	70	1	1.3
181	Fill	Fill of 180	-	180	70	1	1.3
182	Fill	Fill of 183	-	183	116	1	1.3
183	Cut	NW-SE Ditch	D	183	115	1	1.3
184	Fill	Fill of 185	-	185	106	1	1.3
185	Cut	Pit	P	185	105	1	1.3
186	Cut	Posthole	SP	186	35	1	1.3
187	Fill	Fill of 186	-	186	36	1	1.3
188	Cut	Posthole	SP	188	71	1	1.3
189	Fill	Fill of 188	-	188	72	1	1.3
190	Fill	Fill of 191	-	191	114	1	1.3
191	Cut	Posthole	SP	191	113	1	1.3
192	Fill	Fill of 193	-	193	112	1	1.3
193	Cut	N-S Dicth	D	193	111	1	1.3
194	Fill	Fill of 195	-	195	98	1	1.3
195	Cut	Ditch	D	195	97	1	1.3
196	Cut	Victorian cottage construction - wall foundations	WA	196	135	3	-
197	Fill	Victorian walls	WA	196	135	3	-
198	Deposit	sandy-clay spread with gravel/flood episode on edge of gravel spur (dirty natural in eval)	-	198	17	1	1.2
199	Cut	Pit/Posthole	P/SP	199	28	1	1.3
200	Fill	Fill of 199	-	199	28	1	1.3
201	Deposit	Spread	-	201	119	1	1.3
202	Cut	Pit	P	202	26	1	1.3

STAGE 3 EXCAVATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	SUB-GROUP (SG)	PERIOD	PHASE
203	Cut	Gully (terminus)	D	203	88	1	1.3
204	Fill	Fill of 203	-	203	89	1	1.3
205	Cut	Pit	P	205	60	1	1.3
206	Fill	Fill of 205	-	205	61	1	1.3
207	Cut	Pit	P	207	56	1	1.3
208	Fill	Fill of 207	-	207	57	1	1.3
209	Cut	Pit	P	209	58	1	1.3
210	Fill	Fill of 209	-	209	59	1	1.3
211	Cut	Pit	P	211	50	1	1.3
212	Fill	Fill of 211	-	211	51	1	1.3
213	Cut	Posthole	SP	213	3	1	1.1
214	Fill	Fill of 213	-	213	5	1	1.1
215	Fill	Fill of 202	-	202	27	1	1.3
216	Cut	gully	D	216	80	1	1.3
217	Fill	Fill of 216	-	216	81	1	1.3
218	Fill	Fill of 219	-	219	53	1	1.3
219	Cut	pit/Tree throw	P/TH	219	52	1	1.3
220	Cut	Posthole	SP	220	107	1	1.3
221	Fill	Fill of 220	-	220	108	1	1.3
222	Fill	Lower fill of 213	-	213	4	1	1.1
223	cut	Posthole/stake-hole (cut by well)	SP	223	21	1	1.3
224	fill	Fill of 223	-	223	21	1	1.3
225	Fill	Fill of 226	-	226	2	1	1.1
226	Cut	Pit	P	226	1	1	1.1
227	Cut	Gully segment (terminus)	D	227	10	1	1.1
228	Fill	Fill of 227	-	227	11	1	1.1
229	Cut	Gully segment (terminus)	D	229	8	1	1.1
230	Fill	Fill of 229	-	229	9	1	1.1
231	Cut	Pit	P	231	6	1	1.1
232	Fill	Fill of 231	-	231	7	1	1.1
233	Cut	Pit	P	233	13	1	1.1
234	Cut	Posthole	SP	234	75	1	1.3
235	Fill	Fill of 234	-	235	76	1	1.3
236	Cut	Pit	P	236	64	1	1.3
237	Fill	Fill of 236	-	236	65	1	1.3
238	Cut	Pit	P	238	62	1	1.3

STAGE 3 EXCAVATION CONTEXTS	CONTEXT TYPE	CONTEXT DESCRIPTION	FEATURE TYPE	PARENT GROUP	SUB-GROUP (SG)	PERIOD	PHASE
239	Fill	Fill of 238	-	238	63	1	1.3
240	Cut	Gully	P	240	99	1	1.3
241	Grave Cut	Cut for infant burial	G	241	12	1	1.3
242	Skeleton	Infant skeleton	SK	241	12	1	1.3
243	Grave Fill	Grave backfill	-	241	12	1	1.3
244	Fill	Fill of 249	-	249	104	1	1.3
245	Fill	Spread	-	240	102	1	1.3
246	Fill	Fill of 250	-	250	45	1	1.3
247	Fill	Fill of 250	-	250	44	1	1.3
248	Fill	Lower Fill of 240	-	240	100	1	1.3
249	Cut	pit	P	249	103	1	1.3
250	Cut	pit	P	250	43	1	1.3
251	Fill	Upper Fill of 240	-	240	101	1	1.3
252	Fill	Slump Fill in 233	-	233	13	1	1.1
253	Fill	Basal fill in 233	-	233	14	1	1.1
254	Fill	Mid fill in 233	-	233	14	1	1.1
255	Fill	Upper fill in 233	-	233	14	1	1.1
256	Layer	Trample/redeposited natural/flood episode on top of 235	-	233	15	1	1.1
257	Cut & Fill	Victorian drains	D	-	136	3	-
258	Cut & Fill	unexcavated Victorian features	-	-	137	3	-
259	Layer/Deposit	Made ground/demolition rubble	-	-	138	3	-
260	Deposit	Natural sandy clay	-	-	18	-	-

Appendix II: Finds and Environmental Quantification
Quantification of Bulk Finds from the Stage 1 Evaluation

Context	Pot	Wt (g)	CBM	Wt (g)	Bone	Wt (g)	Shell	Wt (g)	FCF	Wt (g)	Stone	Wt (g)	Fe	Wt (g)	Glass	Wt (g)	CTP	Wt (g)	F.Clay	Wt (g)
Tr1 subsoil			2	4690																
1/002	2	2																		
2/004	124	2130							3	164									15	238
2/006	19	196			2	6														
2/008	6	194	3	258	18	526					1	16			4	644	2	8		
2/010	3	156	3	130	1	30	1	<2												
2/014	6	114	19	1520	9	158	19	166												
3/015	5	60					1	86												
3/017			3	514																
3/019	1	16																		
3/023			1	50																
4/013	39	876											1	16					3	56
Total	**205**	**3744**	**31**	**7162**	**30**	**720**	**21**	**252**	**3**	**164**	**1**	**16**	**1**	**16**	**4**	**644**	**2**	**8**	**18**	**294**

Quantification of Bulk Finds from the Stage 3 Excavation

Context	Pottery	Wt (g)	CBM	wt (g)	Bone	wt (g)	H. Bone	wt (g)	Flint	wt (g)	FCF	wt (g)	Stone	wt (g)	Iron	wt (g)	Glass	wt (g)	CTP	(g)	F Clay	wt (g)	Slag	wt (g)
101					1	12											1	6	1	2				
102	3	32																						
106			1	158													1	20						
114	6	34																			5	22		
116	1	6																					3	60
120	4	26																						
125	1	12																						
126			3	946	5	46							2	<6000							19	758	124	25518
127																					5	232	4	112
128	2	66																						
130	1	20									1	42												
133	23	572																			10	182		
135	5	186	6	1766									1	8			3	32						
139	3	64																						
145	14	652			2	38															1	10		
148	5	44																						
151	44	454	5	112																	1	12		
152	43	594									2	48									1	10		
153	105	1728									3	32									1	4		
155	8	596	4	624													2	734	1	4				
157	20	382																						

Context	Pottery	Wt (g)	CBM	wt (g)	Bone	wt (g)	H. Bone	wt (g)	Flint	wt (g)	FCF	wt (g)	Stone	wt (g)	Iron	wt (g)	Glass	wt (g)	CTP	(g)	F Clay	wt (g)	Slag	wt (g)
166	1	12	11	400																				
169	1	8																						
171	10	228																						
173					2	16																		
182	2	14	6	126	6	22																		
187	6	86																						
189	3	72																						
192	1	8																						
194	3	28																						
198	32	754	3	30							1	30												
201	9	192	5	156	7	214																		
204			2	290																				
206	3	24	3	178																				
208	44	1210																						
210	6	80	2	82																				
214	14	136																			4	48		
215	3	46			9	254			3	30														
218	13	132																						
221	8	802																						
224	1	22																						
232	1	18							1	16														
235	1	34																						

Context	Pottery	Wt (g)	CBM	wt (g)	Bone	wt (g)	H. Bone	wt (g)	Flint	wt (g)	FCF	wt (g)	Stone	wt (g)	Iron	wt (g)	Glass	wt (g)	CTP	(g)	F Clay	wt (g)	Slag	wt (g)
239	1	12							1	14														
242							107	888																
244	71	1464	11	30																				
245	16	304	3	42	3	6																		
246	92	2108	9	130																				
248	2	38			6	90															3	70		
251	5	98																			7	208		
256	4	36																			1	8		
u/s	9	996																			1	12		
Total	**650**	**14430**	**74**	**5070**	**41**	**698**	**107**	**888**	**5**	**60**	**7**	**152**	**3**	**8**	**0**	**0**	**7**	**792**	**2**	**6**	**59**	**1576**	**131**	**25690**

Table 10: Residue Quantification (* = 0-10, ** = 11-50, *** = 51 – 250, **** = >250) and Weights (in grams)

Period/Phase	Sub Group SG	Sample Number	Context	Parent Group PG	Context / deposit type	Sample Volume litres	sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Fishbone and microfauna	Weight (g)	Other (eg ind, pot, cbm)
1.1	4	27	222	213	Lower fill of posthole [213]	20	20	*	<2	***	2	**	<2					Lead */<2g - Fired clay */6g - Pot */10g - Mortar */4g - FCF */14g
1.1	11	28	228	227	Fill of gully segment terminus [227]	40	40	*	<2	***	2	**	<2					Pot */12g - Fired clay */2g - FCF */12g
1.1	7	31	232	231	Fill of pit [231]	20	20	*	<2	***	<2	*	<2	*	<2			Pot */14g
1.1	14	34	254	233	Mid fill of pit [233]	40	40			***	2	**	<2	*	<2			Pot */20g - FCF*/<2g - Fired clay */<2g
1.3	25	11	125	112	Upper fill of well [112]	40	40	***	100	***	22	*	<2	*	6			Slag ***/366g - Pot */2g - FCF */32g - Fired clay **/58g
1.3	24	2	126	112	Mid fill of well [112]	40	40	*** *	130	*** *	34			*	<2	*	<2	FCF */30g - Fired clay */84g - Slag ****/2450g - Pot */4g
1.3	24	12	126	112	Mid fill of well [112]	20	20	***	80	***	20	*	<2	**	<2			Pot */<2g - FCF */10g - Slag ****/4832g - Fired clay ***/216g
1.3	23	13	127	112	Lower fill of well [112]	40	40	***	370	***	90	*	<2	**	260			Pot */10g - FCF */20g - Slag ****/5776g - Fired clay **/222g - Flint */10g - HS, metallic ***/24g
1.3	12	29	243	241	Grave [241] backfill	50	50	**	2	***	2	***	6	***	76			Pot */16g
1.3	39	8	145	143	Upper fill of pit [143]	10												
1.3	38	9	144	143	Lower fill of pit [143]	10	10	*	<2	**	<2			*	<2			Fired clay */6g
1.3	30	26	153	152	Fill of pit [152]	40	40	*	<2	***	2	*	<2	*	<2			Pot **/396g - FCF */50g - Fired clay **/102g
1.3		5a	4/013 = 153	4/012 =152	Fill of pit [4/012] = [152]	20	20	*	<1	**	<1	*	<1					FCF */10g, Pot 49/346g
1.3	32	18	157	156	Fill of pit [156]	20	20	*	<2	**	<2	**	<2	**	<2			Flint */2g - Pot */22g - FCF */16g
1.3	34	10	151	150	Fill of pit [150]	20	20	***	4	***	<2	**	<2	*	<2			Pot */84g
1.3	34	25	151	150	Fill of pit [150]	40	40	**	8	***	8	*	<2					Pot */62g - Fired clay */14g

Period/Phase	Sub Group SG	Sample Number	Context	Parent Group PG	Context / deposit type	Sample Volume litres	sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Fishbone and microfauna	Weight (g)	Other (eg ind, pot, cbm)
1.3	61	21	206	205	Fill of pit [205]	20	20	*	<2	***	4	*	<2	*	<2			Flint */2g - Pot */10g
1.3	57	22	208	207	Fill of pit [207]	20	20	*	<2	**	<2	*	<2	*	4			FCF */32g - Pot */20g - Fired clay */<2g - Glass */<2g - HS */<2g
1.3	51	23	212	211	Fill of pit [211]	20	20	*	<2	***	6			*	4			Pot */12g
1.3	63	33	239	238	Fill of pit [238]	20	20	*	<2	***	2	**	<2					Pot **/68g - Fired clay */<2g - Glass */<2g - FCF */16g
1.3		1a	2/004	2/003	Fill of pit [2/003]	20	20	*	<1	*	<1							CBM */18g, Pot 14/44g, FE */2g
5		3a	3/015	3/014	Fill of amorphous pit [3/014]	20	20	*	<1	**	<1	*	<1					
1.3	94	1	120	119	Fill of gully [119]	40	40	**	2	***	8			*	4			Bead */<2g - FCF **/30g - Pot **/24g - Slag */<2g - Flint */<2g
1.3	87	5	124	123	Fill of gully [123]	20	20	**	4	***	4	**	<2	*	<2			FCF **/70g - Pot */22g - HS */<2g - Fired clay */<2g - Flint */4g
1.3	41	7	141	140	Lower fill of gully [140]	10	10	*	<2	**	<2			*	<2			Fired clay */<2g
1.3	89	20	204	203	Fill of gully terminus [203]	20	20	*	<2	***	2	**	<2					
1.3	81	24	217	216	Fill of gully [216]	40	40	**	<2	***	4	**	14	*	<2			FCF */10g - Pot */24g - Flint */10g
1.3	47	4	116	115	Fill of posthole [115]	20	20	**	2	**	<2			*	<2			Pot */4g - Glass */<2g - Slate */<2g
1.3	49	6	133	134	Fill of posthole [134]	20	20	*	<2	***	6							Pot **/136g - Fired clay **/50g - FCF */<2g - Flint */<2g
1.3	74	14	171	170	Fill of posthole [170]	20	20	*	<2	***	<2	*	<2	*	<2			Pot **/50g
1.3	72	15	189	188	Fill of posthole [188]	20	20	*	<2	***	4							Pot **/24g - FCF */10g - Fired clay */<2g
1.3	36	16	187	186	Fill of posthole [186]	20	20	**	2	***	6	*	<2					Pot **/46g - Fired clay **/6g - Glass */<2g - FCF */10g
1.3	76	32	235	235	Fill of posthole [234]	20	20	*	<2	***	2	**	<2					Fired clay */2g - Slag */<2g
1.3	110	3	122	121	Fill of ditch terminus [121]	20	20	**	8	***	8							Pot */6g - Fired clay **/18g
1.3	116	17	182	183	Fill of NW SE Ditch [183]	40	40	***	10	***	6	*	<2	**	14			FCF **/10g - Fired clay */2g - Pot */24g - Metallic HS */<2g

Period/Phase	Sub Group SG	Sample Number	Context	Parent Group PG	Context / deposit type	Sample Volume litres	sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Fishbone and microfauna	Weight (g)	Other (eg ind, pot, cbm)
1.3	100	30	248	240	Lower fill of pit/DITCH [240]	40	40	*	<2	**	<2	*	<2	**	86			Pot */392g - Fired clay */76g
1.3	119	19	201	201	Deposit/Spread	30	30	***	4	***	4	***	4	**	<2			Pot */18g
1.3		4a	2/012	2/011	Fill of dark rectangular feature [2/011]	10	10	**	4	**	<1	***	10					
2		2a	2/010	2/009	Fill of linear feature [2/009]	10	10	*	<1	**	<1	**	4	* Burnt?	2	*	<1	FCF */16g, Pipe */<1g

Table 11: Flots quantification (* = 0-10, ** = 11-50, *** = 51 – 250, **** = >250) and preservation (+ = poor, ++ = moderate, +++ = good)

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.1	27	222	<2	<2	30	60	* *Sambucus nigra*			*	*	*Hordeum* sp., Cerealia	+ - ++	*	Chenopodiaceae	+							
1.1	28	228	12	9	5	57	* *Sambucus nigra, Urtica* sp.		**	**	**	*Triticum* sp., Cerealia	+ - ++	*	Poaceae, *Galium* sp./*Asperula arvensis,* cf. *Crepis* sp.	+ - ++	*	Glume bases (*Triticum spelta*)	+				
1.1	31	232	2	2	2	73	* *Sambucus nigra*		*	**	*	Cerealia, *Triticum* sp.	+ - ++										
1.1	34	254	<2	2	40	20	* *Sambucus nigra*		*	**	*	*Triticum* sp., Cerealia	+ - ++	*	Poaceae, *Polygonum/Rumex* sp., unid. seed	+							
1.3	11	125	12	160	80	4	* *Sambucus nigra*	*	*	**	**	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia, cf. Fabaceae	+ - ++	*	*Avena/Bromus* sp., Poaceae, *Galium* sp./*Asperula arvensis*	+ - ++							
1.3	2	126	18	200	70	5		**	**	***	**	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae	+ - ++							ID *, HS **
1.3	12	126	8	105	75	4	* Chenopodiaceae	**	**	**	**	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	**	*Avena/Bromus* sp., Poaceae, *Pisum/Vicia/Lathyrus* sp., unid. seed	+ - ++						*	HS *
1.3	13	127	18	170	80	3		**	**	***	*	*Hordeum* sp., *Triticum* sp.	+ - ++	*	Poaceae	+							ID *

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	29	243	36	55	5	40	* *Sambucus nigra*		*	***	***	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - +++	** *	*Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., cf. *Lolium* sp., *Anthemis cotula*, unid. seeds	+ - ++	***	Glume bases (unid.), Glume bases (*Triticum spelta*), Spikelet base (unid.), rachis frag.	+ - ++		* bones from fingers		
1.3	8	145	2	6	30	60	* *Sambucus nigra*			*	*	Cerealia	+	*	*Ranunculus* sp., Poaceae, unid. seed	++							
1.3	9	144	<2	10	92	5	* *Sambucus nigra*		*	*	*	Cerealia	++	*	*Anthemis cotula*	++							
1.3	26	153	24	19	25	40			*	**	**	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae, *Polygonum/Rumex* sp., cf. *Carex* sp., cf. *Linum* sp., Apiaceae	+ - ++	*	Glume bases (unid.), Glume bases (*Triticum spelta*)	+ - ++				* ?
1.3	5a	4/013 = 153		30	70		Y	*	**	***	***	Triticum spp., Hordeum sp., Avena sp., & cerealia indet.	+/++	**	Polygonum/ Rumex sp., Poaceae	+/++	*	g.b. & other chaff	+/++				

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	18	157	<2	3	10	15	* *Sambucus nigra*, *Rubus* sp., Chenopodiaceae		*	**	**	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae	+ - ++	*	Spikelet base frags. (unid.)	+				
1.3	10	151	8	10	3	10	* Poaceae	*	**	**	***	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	**	*Anthemis cotula*, *Centaurea* sp., *Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., *Vicia/Lathyrus* sp., cf. Lapsana communis, cf. *Silene* sp., Caryophyllaceae, unid. seed	+ - ++								
1.3	25	151	46	90	1	15		** *	***	***	***	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	**	*Avena/Bromus* sp., Poaceae, *Polygonum/Rumex* sp., Pisum/*Vicia/Lathyrus* sp., *Galium* sp./*Asperula arvensis*	+ - ++							
1.3	21	206	2	3	3	96	* *Sambucus nigra*			*													

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	22	208	4	4	5	90			*	*	*	Cerealia	+										
1.3	23	212	8	4	5	95	* *Polygonum/Rumex* sp.																
1.3	33	239	6	6	25	35	* *Sambucus nigra*	*	*	**	**	*Triticum* sp., Cerealia	+ - ++	*	*Anthemis cotula*, Poaceae, Asteraceae, unid. seed	++	*	Glume bases (*Triticum spelta*)	++				
1.3	1a	2/004		25	80		Y	*	**	**	*	indet.	+	*	indet.	+		indet. cpr	+				
1.3	3a	3/015		40	15		Y		*	**	*	cerealia, Triticum/Hordeum sp.	+/+ +										
1.3	1	120	38	140	60	20	* *Sambucus nigra*, *Rubus* sp.	*	**	***	***	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	**	*Centaurea* sp., *Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., *Pisum/Vicia/Lathyrus* sp., unid. seed	+ - ++	*	Glume bases (uniden.), Glume bases (*Triticum spelta*), Spikelet bases (unid.)	+ - ++	*			
1.3	5	124	4	20	70	20	* *Sambucus nigra*		*	*	**	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae	+ - ++							
1.3	7	141	2	10	94	5	* *Sambucus nigra*		*	*	*	cf. *Triticum* sp.	+										

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	20	204	8	70	88	2	* *Sambucus nigra*	*	**	*	**	*Hordeum* sp., *Triticum* sp., Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae, cf. Cyperaceae, unid. seed	+ - ++	*	Glume bases (*Triticum spelta*)	+ - ++				
1.3	24	217	10	19	5	20		*	*	*	***	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - ++	*	*Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., Pisum/*Vicia/Lathyrus* sp., cf. *Festuca/Lolium* sp.	+ - ++	**	Glume bases (unid.), Glume bases (*Triticum spelta*)	+ - ++				
1.3	4	116	6	10	75	10	* *Sambucus nigra*, *Rubus* sp., Chenopodiaceae, *Urtica* sp., *Euphorbia helioscopia*	*	*	*	*	*Hordeum* sp., Cerealia	+ - ++	*	Poaceae	+ - ++				*	* burnt ?	*	

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	6	133	<2	5	80	15	** *Sambucus nigra*, *Rubus* sp., Chenopodiaceae, *Urtica* sp., *Euphorbia helioscopia*			*	*	*Triticum* sp., Cerealia	+ - ++	*	Poaceae	+ - ++				*		*	*
1.3	14	171	10	18	30	4	* *Sambucus nigra*, *Rubus* sp., *Urtica* sp.	*	**	**	***	*Hordeum* sp., *Triticum* sp., Cerealia	+ - +++	**	*Anthemis cotula* sp., *Avena/Bromus* sp., Poaceae, *Vicia/Lathyrus* sp.	+ - ++	*	Glume bases (unid.), Glume bases (*Triticum spelta*)	++				
1.3	15	189	2	10	56	4	* *Sambucus nigra*, cf. *Viola* sp.	*	*	***	**	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - ++	**	*Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., *Vicia/Lathyrus* sp.	+ - ++							
1.3	16	187	8	8	25	5	* *Sambucus nigra*	*	**	**	***	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - ++	*	*Galium* sp./*Asperula arvensis*, *Vicia/Lathyrus* sp., *Anthemis cotula*	+ - ++	*	Spikelet base frag. (unid.)	+				

Period/Phase	Sample Number	Context	weight g	Flot volume ml	Uncharred %	sediment %	Uncharred macrobotanical remains	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	crop seeds charred	Identifications	Preservation	weed seeds charred	Identifications	Preservation	other botanical charred	Identifications	Preservation	Insects, Fly Pupae etc	Faunal remains	Land Snail Shells	Industrial debris hammerscale
1.3	32	235	10	6	15	65	* *Sambucus nigra*		*	**	**	*Hordeum* sp., *Triticum* sp.	+ - ++										
5	3	122	10	45	35	5		*	*	***	***	*Hordeum* sp., *Triticum* sp., Cerealia	+ - +++	** *	*Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Anthemis cotula*	+ - +++							
1.3	17	182																					
1.3	30	248	24	140	95	3				*													
1.3	19	201	18	50	10	4	* *Sambucus nigra*, *Rubus* sp.	*	*	**	**	*Hordeum* sp., *Triticum* sp., *Triticum* cf. *aestivum*, Cerealia	+ - ++	*	*Anthemis cotula*, *Avena/Bromus* sp., Poaceae, Chenopodiaceae, *Polygonum/Rumex* sp., Pisum/*Vicia/Lathyrus* sp.	+ - ++	***	Glume bases (unid.), Glume bases (*Triticum spelta*), Spikelet base (unid.)	+ - ++	* FP			
1.3	4a	2/012		130	30		Y	*	***	*** *	*** *	Triticum spp., Hordeum sp. (hulled), Avena/Bromus sp.	++/ +++	**	Poaceae	++	***	chaff, g.b. - T spelta, T dicoccum; rachis frags - cf. Hordeum	++ /+ ++				
2	2a	2/010		120	30		Y	**	***	*** *	***	Triticum spp., Hordeum sp. (hulled), Avena sp.	++	*	Poaceae	++	****	chaff, g.b. - T spelta, T dicoccum; rachis frags - cf. Hordeum; awns	++ /+ +				

Appendix III

List of Sites and Monuments (numbering system created by author – information courtesy of Jacobs 2009 and ADS – locations plotted on Figure 1)

Site No.	Site Name/ Description	Site Type	Date	NGR
1	K6 Telephone Kiosk NMR/SMR ref: N/A	Grade II Building	c.1935	TQ5202482274
2	Redbury - NMR/SMR ref: N/A	Building	Mid C18	TQ5202482242
3	The Vicarage NMR/SMR ref: N/A	Grade II Building	1710	TQ5204182214
4	Bridge Road, Rainham NMR/SMR ref: ML05830	Bridge	1234	TQ52038239
5	Church of St Helen & St Giles NMR/SMR ref: N/A	Grade I Building	c.1170	TQ5208382208
6	2-8 Upminster Road NMR/SMR ref: N/A	Grade II Building	C17- early C18	TQ5214982210
7	Forecourt railings, gates & piers, walls and vases NMR/SMR ref: N/A NMR_NATINV-411451	Grade II Building	Early C18 1729	TQ 5210 8216
8	Rainham Hall + the lodge, stable block & wall & gate NMR/SMR ref: N/A NMR_NATINV-765069	Building	Early C18	TQ5209982164
9	Bridge Road, Rainham – excavations at Tesco site by M. Beasley for Passmore Edwards Museum NMR/SMR ref: ML023799 & ML023801 GLSMR-061690	Trackway, Flood deposit, peat/stream	Bronze Age	TQ5282
10	Viking Way – evaluation by M. Beasley for NMUS 1996 NMR/SMR ref: ML023799 EHNMR-1120471	Ditch	Bronze Age & Post. Med	TQ5282
11	Rainham Creek NMR/SMR ref: ML023799 GLSMR-060394/ EHNMR-1439753	Wharf & Granary	Med/Post med. transition	TQ5181
12	The Broadway – Coaching Inn NMR/SMR ref: ML023799	Building	1633	TQ58SW
13	The Broadway – Charnel Pit NMR/SMR ref: ML023799	Pit	Not specified	TQ58SW
14	Rainham NMR/SMR ref: ML 023799	Settlement	Saxon, Roman & Prehistoric	TQ58SW
15	Church of St Helen & St Giles Burial vault uncovered EHNMR-1341071	Watching Brief	C18th-19th	TQ5282
16	Rainham – 3 handaxes found NMR/SMR ref: ML07981	Findspot	Prehistoric	TQ58SW
17	Broadway, Rainham – Chapel NMR/SMR ref: ML05837 GLSMR-060400	Building	1834	TQ5282

Site No.	Site Name/ Description	Site Type	Date	NGR
18	Broadway, Rainham – Public House NMR/SMR ref: ML05837 GLSMR-060393	Building	1730 Rebuilt 1907	TQ5282
19	Charlottes Alley, Rainham – house NMR/SMR ref: ML05834 GLSMR-060390	Building	C17	TQ5282
20	Rainham Squash & Snooker Club (former Ferry Lane) NMR/SMR ref: ML097876	Pit, ditch & gully	Iron Age	TQ58SW
21	Wennington Road NMR/SMR ref: ML062685 EHNMR-1332031	Ditch & Pit	Late BA/IA	TQ 53 81
22	Wenningtone Road – grey pottery rim sherd NMR/SMR ref: ML062689	Findspot	Roman	TQ58SW
23	Former Rainham Football Club NMR/SMR ref: ML077097 EHNMR-1063544/EHNMR-1039018	Ditch	Late BA/IA Roman Early Med.	TQ5281
24	Ellis Avenue – pottery sherds NMR/SMR ref: N/A	Findspot	Medieval	TQ58SW
25	Rainham – stone tool NMR_NATINV-1213163	Findspot	Mesolithic	TQ 5233 8180
26	Ferry Lane NMR/SMR ref: ML068294	Anti Aircraft Gun Post	WWII	TQ58SW
27	Broadway/Ferry Lane 2 rows of cottages NMR/SMR ref: N/A	Cottages	On 1897 OS map	TQ58SW
28	Ferry Lane – garden NMR/SMR ref: N/A	Garden	On 1938 Tithe map	TQ58SW
29	Rainham Railway NMR/SMR ref: 1368964 NMR_NATINV-509174	Railway	N/A	TQ 5209 8204
30	Rainham NMR/SMR ref: N/A	Conservation Area	N/A	TQ58SW
31	Rainham – located on vicinity of present Rainham Station NMR/SMR ref: ML023799	Building	c.1600	TQ58SW
32	Rainham – Flint Artefact GLSMR-060044	Findspot	Palaeolithic	TQ5282
33	Moor Hall Farm, Rainham NMRMIC-5118	Enclosures	Iron Age & Roman	TQ 545 820

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SMR Summary Form

Site Code	RIL09					
Identification Name and Address	Rainham Interchange and Library Site, Ferry Lane, Rainham					
County, District &/or Borough	London Borough of Havering					
OS Grid Refs.	NGR TQ 521 820					
Geology	Taplow Gravels					
Arch. South-East Project Number	4056					
Type of Fieldwork	**Eval.**	**Excav.**	**Watching Brief**	Standing Structure	Survey	Other
Type of Site	Green Field	**Shallow Urban**	Deep Urban	Other		
Dates of Fieldwork	**Eval.** Aug 2009	**Excav.** Sept-Oct 2010	**WB.** Jan 2010	Other		
Sponsor/Client	CgMs Consulting Ltd.					
Project Manager	Jon Sygrave					
Project Supervisor	Kathryn Grant					
Period Summary	Palaeo.	Meso.	Neo.	BA	IA	RB
	LIA/RB **Pits, Postholes, Ditches, well & infant burial**	**MED** **Ditch & artefacts**	**PM** **Victorian Cottages/Pits**	**Other** **Modern Demolition/Makeup**		

100 Word Summary.

This document summarises the results of the archaeological excavation (Strip, Map and Sample) carried out during September and October 2010 by Archaeology South East at the Rainham Interchange and Library Site, Ferry Lane, Rainham, London Borough of Havering (NGR: 552100 182000). The archaeological work was commissioned by CgMs Consulting Ltd. on behalf of their client, London Thames Gateway Developments. The archaeological excavation followed an evaluation and a watching brief exercise which were carried out at the site in August 2009 and January 2010 respectively. The potential of the site for further analysis is discussed within this report and a publication synopsis has been outlined. A quantification of the resources needed to achieve this work has also been undertaken.

Three periods of activity were recorded during the excavation: Late Iron age/Early Roman, medieval and post medieval.

Five phases of activity were recorded during the excavation. The Late Iron Age/Roman activity comprised a pits some probably quarry pits, postholes and a partial ring gully. These features were sealed by a naturally derived, probably alluvial deposit. Further Late Iron Age/Roman features were cut into this alluvial deposit including. pits, postholes a further ring gully, a well and a single burial of a young infant. There is evidence of iron working, grain processing and potentially (although circumstantially), pottery production in the vicinity of the site in this period.

There was limited medieval activity for which the only evidence was a drainage ditch uncovered during the evaluation and intrusive artefacts scattered across the excavation area. The post-medieval activity comprised two rows of late 19th century cottages and associated refuse pits and garden features. Considerable demolition from these cottages as well as made-ground was encountered on the site during the excavation.

The natural geology was variable at the site and comprised a combination of yellowish orange sandy clays and sandy gravels, which were encountered at a maximum height of 2.38m AOD in the northeast of the site, falling away to 1.09m AOD in the west.

OASIS Form

OASIS ID: archaeol6-91541

Project details

Project name	Rainham Interchange and Library
Short description of the project	*This document summarises the results of the archaeological excavation (Strip, Map and Sample) carried out during September and October 2010 by Archaeology South East at the Rainham Interchange and Library Site, Ferry Lane, Rainham, London Borough of Havering (NGR: 552100 182000). The archaeological work was commissioned by CgMs Consulting Ltd. on behalf of their client, London Thames Gateway Developments. The archaeological excavation followed an evaluation and a watching brief exercise which were carried out at the site in August 2009 and January 2010 respectively. The potential of the site for further analysis is discussed within this report and a publication synopsis has been outlined. A quantification of the resources needed to achieve this work has also been undertaken.* *Three periods of activity were recorded during the excavation: Late Iron age/Early Roman, medieval and post medieval.* *Five phases of activity were recorded during the excavation. The Late Iron Age/Roman activity comprised a pits some probably quarry pits, postholes and a partial ring gully. These features were sealed by a naturally derived, probably alluvial deposit. Further Late Iron Age/Roman features were cut into this alluvial deposit including. pits, postholes a further ring gully, a well and a single burial of a young infant. There is evidence of iron working, grain processing and potentially (although circumstantially), pottery production in the vicinity of the site in this period.* *There was limited medieval activity for which the only evidence was a drainage ditch uncovered during the evaluation and intrusive artefacts scattered across the excavation area. The post-medieval activity comprised two rows of late 19th century cottages and associated refuse pits and garden features. Considerable demolition from these cottages as well as made-ground was encountered on the site during the excavation.* *The natural geology was variable at the site and comprised a combination of yellowish orange sandy clays and sandy gravels, which were encountered at a maximum height of 2.38m AOD in the northeast of the site, falling away to 1.09m AOD in the west.* .
Project dates	Start: 27-09-2010 End: 25-10-2010
Previous/future work	Yes / Not known
Any associated project reference codes	RIL09 - Sitecode
Type of project	Recording project

Site status	Conservation Area
Current Land use	Other 13 - Waste ground
Monument type	PITS Roman
Monument type	DITCHES Roman
Monument type	POSTHOLES Roman
Monument type	WELL Roman
Monument type	BURIAL Roman
Significant Finds	POTTERY Roman
Investigation type	'Part Excavation'
Prompt	Planning condition

Project location

Country	England
Site location	GREATER LONDON HAVERING RAINHAM Rainham Interchange and Library Site
Postcode	RM13 9HY
Study area	1000.00 Square metres
Site coordinates	TQ 521 820 51.5159084609 0.192336445782 51 30 57 N 000 11 32 E Point
Height OD / Depth	Min: 1.09m Max: 2.38m

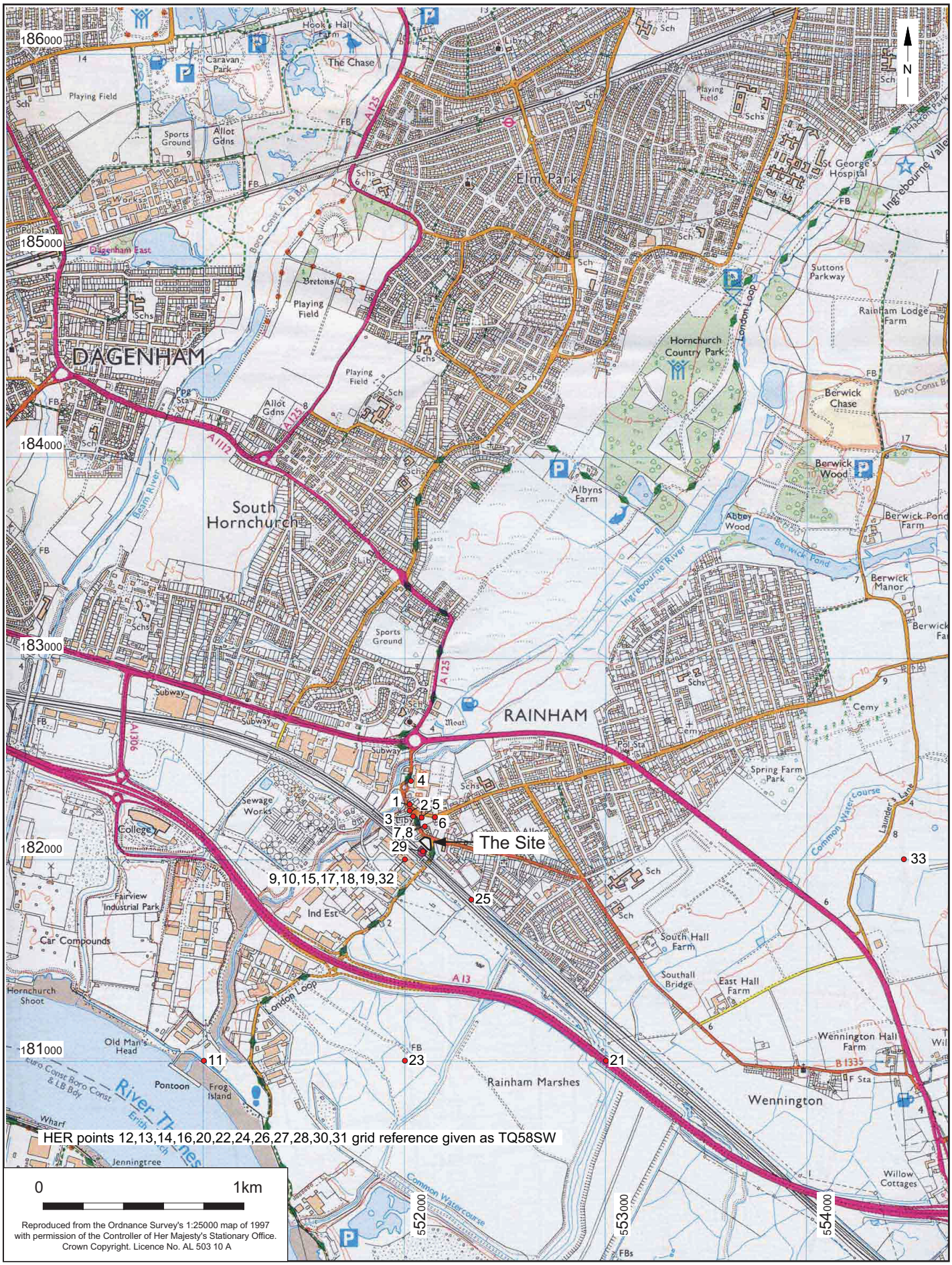
Project creators

Name of Organisation	Archaeology South-East
Project brief originator	CgMs Consulting
Project design originator	CgMs Consulting
Project director/manager	Jon Sygrave
Project supervisor	Kathryn Grant

Entered by	Kathryn Grant (Kathryn.Grant@ucl.ac.uk)
Entered on	19 January 2011

OASIS:

Please e-mail English Heritage for OASIS help and advice



© Archaeology South-East		Rainham Interchange and Library, Ferry Lane, Rainham	Fig. 1
Project Ref: 4056	Jan 2011	Site location and HER data	
Report Ref: 2010209	Drawn by: JLR		

N

Trench 1

Trench 2

Trench 3

Trench 4

Trench 5

Ferry Lane

182100

182050

552100

0 5m

© Archaeology South-East		Rainham Interchange and Library	Fig. 2
Project Ref: 4056	Jan 2011	Site plan, all periods	
Report Ref: 2010209	Drawn by: JR/JC		

N

Trench 1

Trench 2

Trench 3

Trench 4

Trench 5

Section 1
226

Section 2
233

Section 3
229

Section 4
213

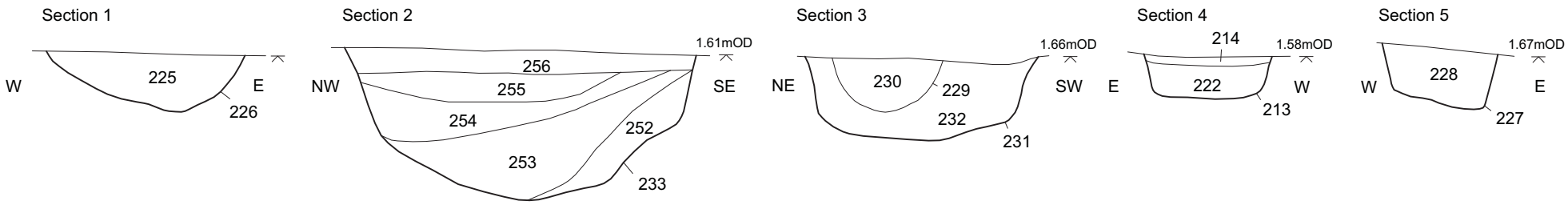
Section 5
227

0 2m

0 5m

Fig. 3.1: Detail

© Archaeology South-East		Rainham Interchange and Library	Fig. 3
Project Ref: 4056	Jan 2011	Period 1, Phase 1.1 Late Iron Age/Roman	
Report Ref: 2010209	Drawn by: JR/JC		



213 in plan

233 looking north-east

229 and 231 looking south

213 looking south

227 looking north

© **Archaeology South-East**		Rainham Interchange and Library	Fig. 4
Project Ref: 4056	Jan 2011	Period 1, Phase 1.1 Late Iron Age/Roman: Sections and photographs	
Report Ref: 2010209	Drawn by: JR		

© **Archaeology South-East**		Rainham Interchange and Library	Fig. 5
Project Ref: 4056	Jan 2011	Period 1, Phase 1.2 Late Iron Age/Roman alluvial deposition	
Report Ref: 2010209	Drawn by: JR/JC		

N

Trench 1

Trench 2

Section 6

2/003

2/005

Section 28

Trench 3

3/016

3/022

3/020

3/014

Section 7

Trench 4

Trench 5

0 5m

© **Archaeology South-East**		Rainham Interchange and Library	Fig. 6
Project Ref: 4056	Jan 2011	Period 1, Phase 1.3 Late Iron Age/Roman	
Report Ref: 2010209	Drawn by: JR/JC		

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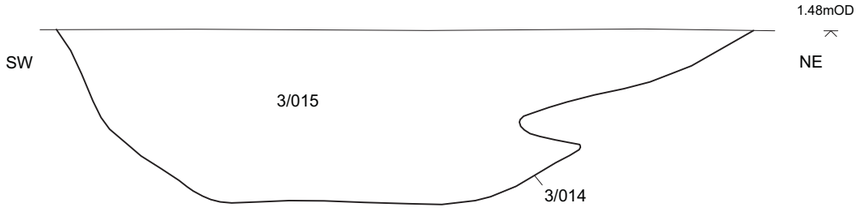
Project Ref: 4056	Jan 2011	Period 1, Phase 1.3 Late Iron Age/Roman detail plan	
Report Ref: 2010209	Drawn by: JR/JC		

Section 6

Section 7



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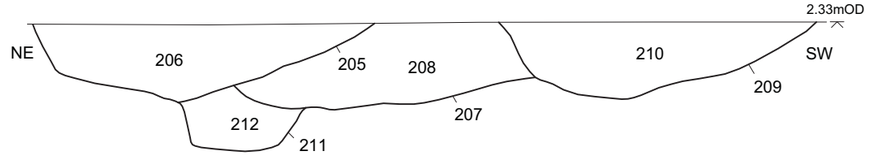

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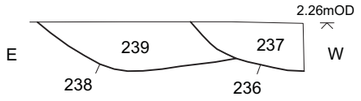

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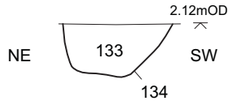

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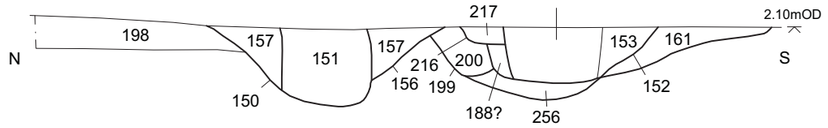

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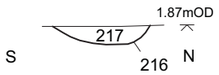

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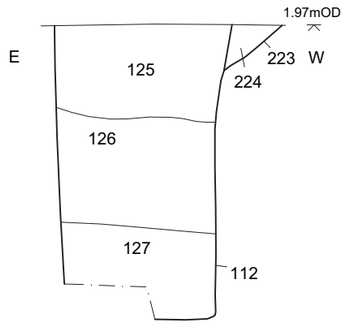

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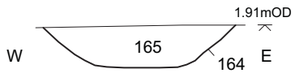

0 0.5m

236 and 238 looking south

205 and 207 looking south-east

150, 152 and 156 looking north-east

170 looking north

234 looking east

112 looking south

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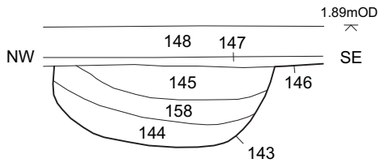
Project Ref: 4056	Jan 2011	Period 1, Phase 1.3 Late Iron Age/Roman: Sections and photographs	
Report Ref: 2010209	Drawn by: JR		

Section 15



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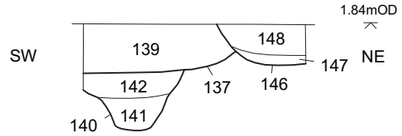

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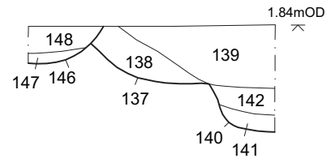

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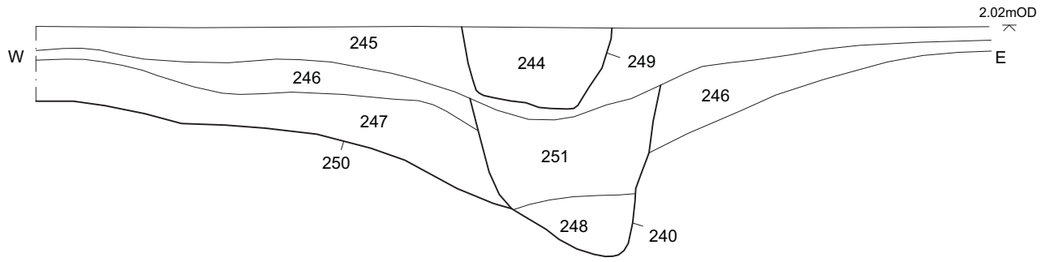

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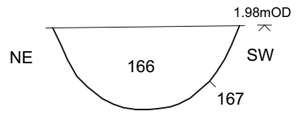
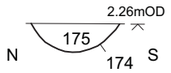


Section 20

Section 21



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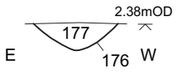

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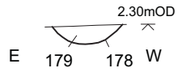

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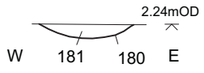


0 0.5m

143 and 146 looking east

183 and 185 looking north

240, 249 and 250 looking north

167 looking south

Pit 168 and postholes 172-180 looking north

168 looking north-east

Project Ref: 4056	Jan 2011	Rainham Interchange and Library
Report Ref: 2010209	Drawn by: JR/JC	Period 1, Phase 1.3 Late Iron Age/Roman: Sections and photographs

Fig. 9

N

Section 25

129

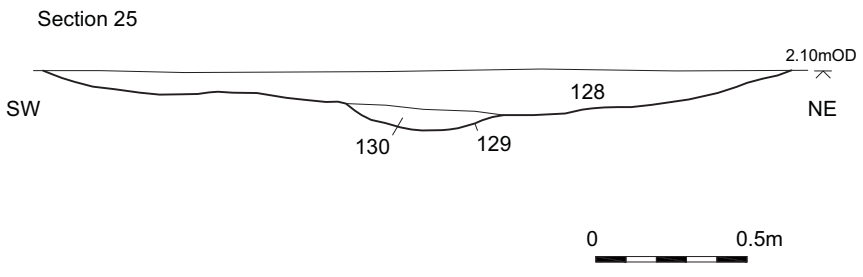
162

123

203

129 looking north

Section 25



0 2m

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Project Ref: 4056	Jan 2011	Period 1, Phase 1.4 Late Iron Age/Roman detail plan	
Report Ref: 2010209	Drawn by: JR/JC		

N

Section 26

128/149/201

128

Section 27

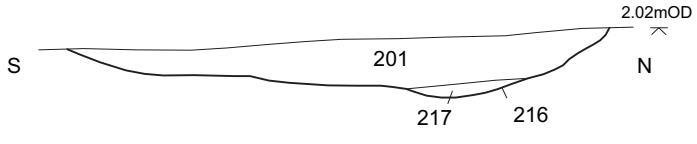
241

SK-242

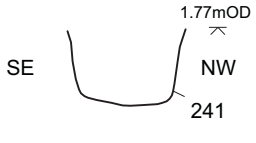
220

Grave 241 looking west

Section 26



Section 27



0 0.5m

Period 1 Phase 1.5

Period 1 Phase 1.6

0 2m

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Project Ref: 4056	Jan 2011	Period 1, Phase 1.5 and 1.6 Late Iron Age/Roman detail plan	
Report Ref: 2010209	Drawn by: JR/JC		

N

Trench 1

Trench 2

2/009

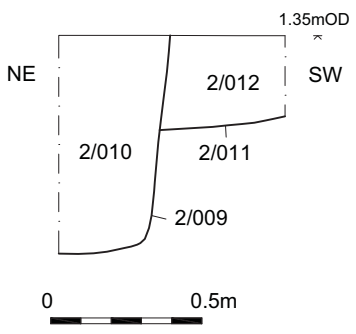
Trench 3

Trench 4

Trench 5

0 5m

Section 28



2/009 and 2/011 looking east

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Project Ref: 4056	Jan 2011	Period 2 Medieval: Plan, section and photograph	
Report Ref: 2010209	Drawn by: JR/JC		

N

Trench 1

Trench 2

Trench 3

Trench 4

Trench 5

Section 31

Section 30

Section 29

Section 32

Section 33

107

103

154

100

258

258

196

117

105

257

121

196

193

0 5m

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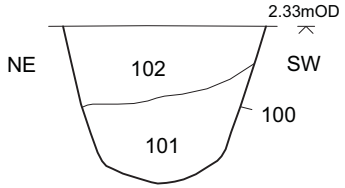
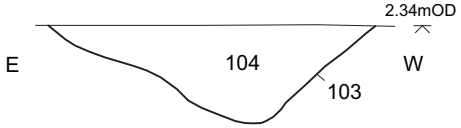
Project Ref: 4056	Jan 2011	Period 3 Post-Medieval	
Report Ref: 2010209	Drawn by: JR/JC		

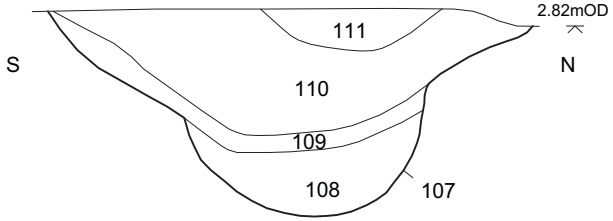
Section 29



Section 30



Section 31



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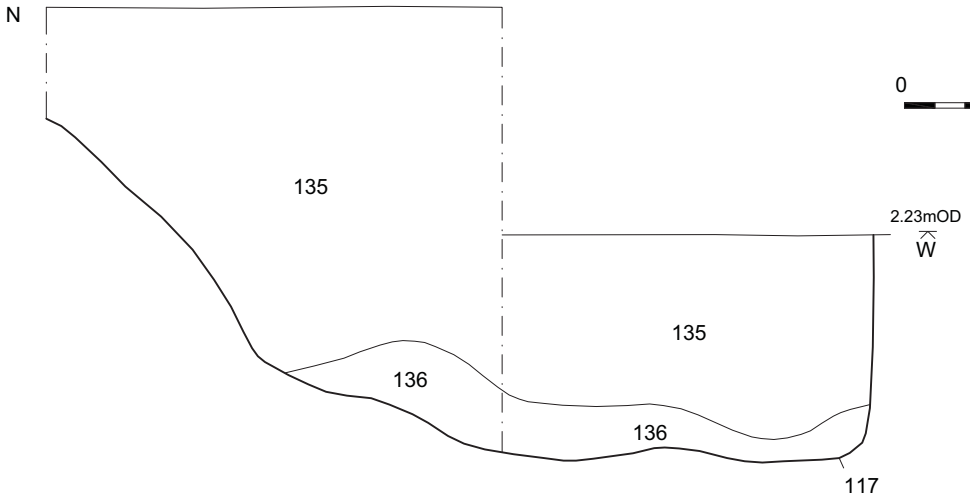
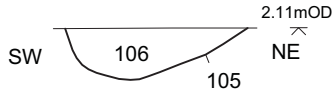


0 0.5m

Section 33



100 looking south-east

107 looking west

117 looking east

107 looking west

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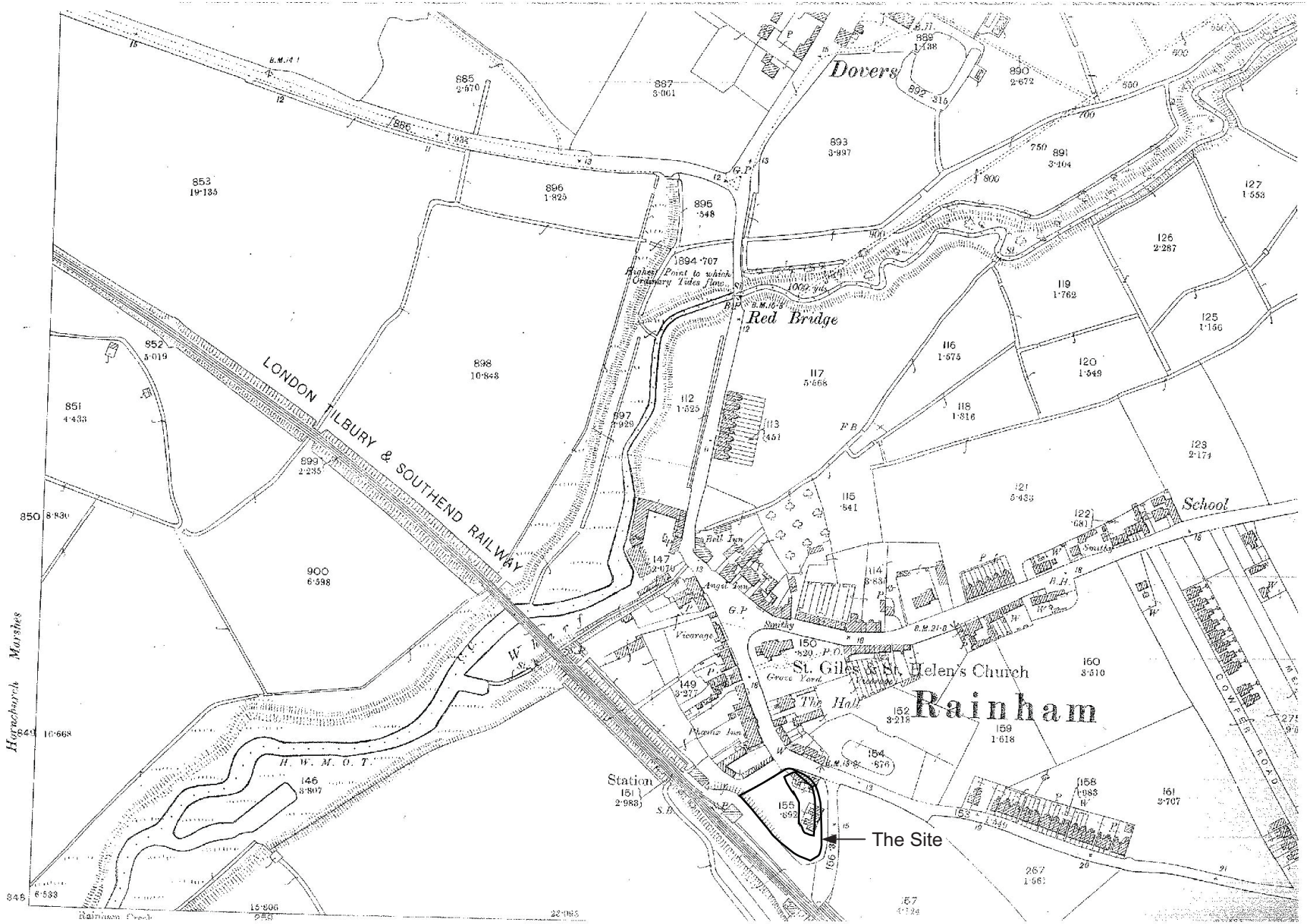
Project Ref: 4056	Jan 2011	Period 3: Sections and photographs	
Report Ref: 2010209	Drawn by: JR/JC		



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Report Ref: 2010209	Drawn by: JLR		

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