

**57 STOCKINGSWATER LANE,
ENFIELD, EN3 7PZ**

**AN ARCHAEOLOGICAL
EVALUATION**

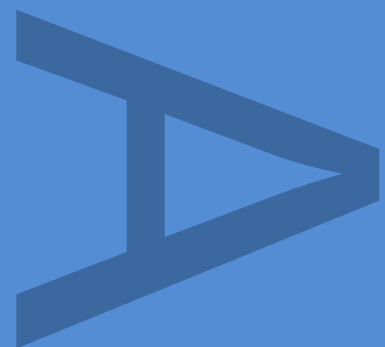
ISSUE 1: ISSUED FOR COMMENT

**PLANNING APPLICATION NUMBER:
TP/09/0028**

SITE CODE: SWZ10

**LOCAL PLANNING AUTHORITY:
LONDON BOROUGH OF ENFIELD**

SEPTEMBER 2010



PRE-CONSTRUCT ARCHAEOLOGY

DOCUMENT VERIFICATION

57 STOCKINGSWATER LANE, ENFIELD, EN3 7PZ

ARCHAEOLOGICAL EVALUATION

Quality Control

Pre-Construct Archaeology Limited			K2339
	Name & Title	Signature	Date
Text Prepared by:	Amelia Fairman		September 2010
Graphics Prepared by:	Mark Roughley		September 2010
Graphics Checked by:	Josephine Brown		September 2010
Project Manager Sign-off:	Chris Mayo		September 2010

Revision No.	Date	Checked	Approved

Pre-Construct Archaeology Ltd
Unit 54
Brockley Cross Business Centre
96 Endwell Road
London
SE4 2PD

57 Stockingswater Lane, London Borough of Enfield, EN3 7PZ
An Archaeological Evaluation

ISSUE 2: ISSUED DOCUMENT

Site Code: SWZ10
Planning Application Number: TP/09/0028
Central National Grid Reference: TQ36919691

Written and Researched by: Amelia Fairman
Project Manager: Chris Mayo

Commissioning Client: CgMs Consulting on behalf of
Legal and General Partners Services

Contractor: Pre-Construct Archaeology Limited
Unit 54, Brockley Cross Business Centre
96 Endwell Road
London
SE4 2PD
Tel: 020 7732 3925
Fax: 020 7732 7896
Email: cmayo@pre-construct.com
Website: www.pre-construct.com

© Pre-Construct Archaeology Limited
September 2010

© The material contained herein is and remains the sole property of Pre-Construct Archaeology Limited and is not for publication to third parties without prior consent. Whilst every effort has been made to provide detailed and accurate information, Pre-Construct Archaeology Limited cannot be held responsible for errors or inaccuracies herein contained.

CONTENTS

1	Abstract	4
2	Introduction	6
3	Planning Background	8
4	Geology and Topography	11
5	Archaeological and Historical Background	11
6	Archaeological Methodology	15
7	Archaeological Phase Discussion	17
7.1	Phase 1: Natural: Kempton Park Gravels and Peat	17
7.2	Phase 2: Natural Cut Features	17
7.3	Phase 3: Alluvium	18
7.4	Phase 4: Modern Levelling	18
8	Interpretations and Conclusions	24
8.3	Natural Geology	24
8.4	Natural Cut Features	24
8.5	Alluvium	25
8.6	Modern Levelling	25
8.7	General	25
9	Acknowledgements	31
10	Bibliography	31

APPENDICES

11	Appendix 1: Context Index	32
12	Appendix 2: Site Matrix	33
13	Appendix 3: Oasis Report Form	34

ILLUSTRATIONS

Figure 1: Site Location	7
Figure 2: Trench Location Plan	16
Figure 3: Plan of Trench 2 and Section 1	20
Figure 4: Plan of Trench 3 and Sections 2 & 3	21
Figure 5: Transect Location and Channels found in the vicinity	27
Figure 6: Transect 1	28
Figure 7: Transect 2	29
Figure 8: Transect 3	30

PLATES

Plate 1: NW end of Trench 1 showing severe concrete intrusions	22
Plate 2: Concrete breaking in progress in Trench 3.....	22
Plate 3: South-eastern end of Trench 3 showing oil contamination.....	23
Plate 4: Channel [11] bisecting Trench 3	23

1 ABSTRACT

- 1.1 This report details the results of an archaeological evaluation as part of the redevelopment of the car park at the rear of 57 Stockingswater Lane, London Borough of Enfield EN3 7PZ (Figure 1), undertaken by Pre-Construct Archaeology Ltd. The project was commissioned by CgMs Consulting on behalf of Legal and General Partners Services Limited. The project was managed by Chris Mayo and supervised by the author and Pete Boyer, both of Pre-Construct Archaeology Limited, and monitored by Kim Stabler, English Heritage, on behalf of the London Borough of Enfield.
- 1.2 Two of the planned three trenches were opened during the evaluation (Figure 2). Both trenches were sealed by considerable depths of made ground and concrete. The depths of concrete and modern obstructions were sufficiently deep to prevent Trench 1 from being opened (Plate 1). The northern limits of Trench 2 and far eastern limits of Trench 3 were similarly abandoned due to the presence of deep deposits of 20th century made ground. The latter encountered a large 20th century concrete obstruction, which could be interpreted as former flood defences or a river wall. It is therefore likely that any pre-dating archaeological deposits or horizons have been significantly impacted upon within these areas.
- 1.3 Natural deposits were observed in the bases of all excavated trenches. These comprised the Kempton Park gravels and were identified between elevations of 13.78m OD and 13.65m OD. These findings were consistent with those of previous archaeological investigations to the north of the study site, which reported gravel between elevations of 13.90m OD and 13.65m OD. It appears that the underlying geology exhibits a general south-easterly declination, sloping down towards the course of the River Lea. Furthermore, the results of the evaluation and those of previous excavations infer, from a sudden drop in the elevation of gravels to the east, that a buried channel may exist along the eastern boundary. This is likely to represent a former migration of the River Lea.
- 1.4 The identification of peat within Trench 3 supports the findings from excavations along Millmarsh Lane. This was identified from 12.75m OD which compares well to the peat observed within the subject site at 12.65m OD. Access was prevented to this trench due to the presence of extensive contamination. However, the former investigations dated this deposit to the early Mesolithic. The comparable levels and characteristics of these features may infer them to be contemporary and indicative of a slight northerly inclination in the underlying peat.
- 1.5 Several naturally cut features were identified within the base of Trench 3. A roughly north-south aligned palaeochannel was encountered with a profile indicative of an eastern meander, with a tree throw to the west of this. The Millmarsh Lane investigations reported similar findings of a north-south aligned palaeochannel within a comparable area, but at a much higher elevation, interpreted as a former channel of the River Lea. The drop in elevation appears too great to suggest these features to be the same, and the channel within the subject site was subsequently interpreted as a former tributary relating to the River Lea.

-
- 1.6 The trenches were sealed by layers of alluvium indicative of both high and low energy deposition. This is consistent with the results of the environmental investigations carried out at the site, as well as archaeological investigations carried out to the north along Millmarsh Lane. The latter investigations' analysis of these layers found them to be primarily waterlain and included post-medieval flood layers. No dating evidence was retrieved from the subject site to provide comparable evidence. However it may be assumed that a similar sequence is present. These findings suggest that the wider vicinity of the site was formerly bisected by numerous tributaries relating to the River Lea and as a result suffered from frequent flooding episodes. This may have therefore inhibited occupation and development of the area in addition to preventing the survival of ephemeral, seasonal encampments or structures of prehistoric date. All trenches were subsequently sealed by considerable depths of 20th century made ground, interpreted as levelling and ground consolidation.

2 INTRODUCTION

- 2.1 Pre-Construct Archaeology Limited conducted an archaeological evaluation within the car park of 57 Stockingswater Lane, London Borough of Enfield EN3 7PZ (Figure 1), in advance of redevelopment of the site. The evaluation was conducted between 23rd August and 1st September 2010 and was commissioned by CgMs Consulting on behalf of Legal and General Partners Services Limited. The evaluation was undertaken in response to an archaeological planning condition attached to planning permission for the development, (application number TP/09/0028).
- 2.2 The site investigation was undertaken in accordance with an approved Written Scheme of Investigation prepared by CgMs Consulting (Gidman 2010).
- 2.3 The subject site lies entirely within a tarmac car park at the rear of an industrial complex. This is bounded by the navigation channel of the River Lea and the King George's Reservoir to the east, large industrial factories and the Leaside Business Centre to the south and north respectively. The western limits are bound by a large Makro superstore and surrounding car park. The central National Grid Reference of the site is TQ 3691 9691.
- 2.4 The site was assigned the MoL code SWZ10.
- 2.5 The project was monitored by Kim Stabler of English Heritage on behalf of the London Borough of Enfield, project managed by Chris Mayo and supervised by the author and Pete Boyer.



© Crown copyright 2005. All rights reserved. License number 36110309
 © Pre-Construct Archaeology Ltd 2010

Figure 1
 Site Location
 1:12,500 at A4

3 PLANNING BACKGROUND

3.1 National Policy: Planning Policy Statement (PPS 5)

3.1.1 In March 2010 the Department for Communities and Local Government issued Planning Policy Statement 5: Planning for the Historic Environment (PPS5), which provides guidance for planning authorities, property owners, developers and others on the investigation and preservation of archaeological remains.

3.1.2 In short, government policies provide a framework which:

- Protect Scheduled Ancient Monuments
- Protect the settings of these sites
- Protect nationally important un-scheduled ancient monuments
- Has a presumption in favour of in situ preservation
- In appropriate circumstances, requires adequate information (from field evaluation) to enable informed decisions
- Provides for the excavation and investigation of sites not important enough to merit in situ preservation

3.1.3 In considering any planning application for development, the local planning authority will be guided by the policy framework set by government guidance, in this instance PPS5, by current Unitary Development Plan policy and by other material considerations.

3.2 The London Plan

3.2.1 The relevant Strategic Development Plan framework is provided by 'The London Plan, Spatial Development Strategy for Greater London Consolidated with Alterations since 2004' (Feb 2008). It includes the following policies relating to archaeology and cultural heritage within central London:

POLICY 4B.15 ARCHAEOLOGY

The Mayor, in partnership with English Heritage, the Museum of London and boroughs, will support the identification, protection, interpretation and presentation of London's archaeological resources. Boroughs in consultation with English Heritage and other relevant statutory organisations should include appropriate policies in their DPDs for protecting scheduled ancient monuments and archaeological assets within their area.

3.3 Local Policy

3.3.1 The London Borough of Enfield's Unitary Development Plan (UDP) was adopted on 25th March 1994. It provides a framework for development, development control and conservation within Enfield and sets out the Council's policies and proposals for the development and other use of land. These policies were 'saved' on 19th September 2007 and remain valid until they are replaced by Enfield's new Local Development Framework (LDF) which is currently under review. Relevant policies for Archaeological and Cultural Heritage include:

7.2 ARCHAEOLOGY AND ANCIENT MONUMENTS

7.2.1 The archaeological heritage of the Borough includes archaeological sites and artefacts as well as historically or socially significant buildings. Such remains

constitute the principal surviving evidence of the Borough's past, but are a finite and fragile resource very vulnerable to modern development and land use. The Council considers that the archaeology of the Borough is a community asset and that its preservation is a legitimate objective, against which the needs of development must be balanced and assessed. The destruction of such remains should be avoided wherever possible and should never take place without prior archaeological excavation and record. In the case of vernacular buildings, the Council would wish to see the investigation and recording of the interior and exterior of such buildings carried out, where they cannot be preserved.

POLICY (II) C1:

To promote the conservation, protection and enhancement of the archaeological heritage of the borough and its interpretation and presentation to the public.

POLICY (II) C2:

To ensure that applicants have properly assessed and planned for the archaeological implications, where development proposals may affect the buried heritage and, where necessary, to require a preliminary archaeological site evaluation before development proposals are considered.

POLICY (II) C3:

To encourage co-operation between landowners, developers and archaeological organisations, in accordance with the principles of the British Archaeologists and Developers Liaison Group code of practice.

POLICY (II) C4:

To encourage suitable design, land use and management so as to safeguard archaeological sites, and to seek to ensure that the most important archaeological remains and their settings are permanently preserved (if necessary for public access and display) and that, where appropriate, they are given statutory protection.

POLICY (II) C5:

To ensure that sites of archaeological significance or potential not requiring permanent preservation shall have provision made for an appropriate level of archaeological investigation and excavation, to be undertaken by a recognised archaeological organisation before development begins, and to require that such provision:

- (a) Is in accordance with a written scheme of investigation approved in advance by the Council;
- (b) Includes the subsequent analysis, interpretation and presentation to the public of the archaeological results and finds.

3.3.2 The site lies within an Archaeological Priority Area. No Scheduled Ancient Monuments lie within the boundary of the subject site.

3.4 Planning Status

3.4.1 The proposed development has full planning permission (application number TP/09/0028)

3.4.2 A schedule of planning conditions has been issued for the subject site, including Condition 20 which requires that:

No development shall take place 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.

Reason: To safeguard archaeological heritage.

3.4.3 In accordance with the conditions laid down in Enfield's UDP, a programme of evaluation by trial trenching was designed (Gidman 2010) and carried out in consultation with Kim Stabler,

the archaeological advisor for the London Borough of Enfield. Three trenches were proposed within the footprint of the new development, applied specifically to areas of ground disturbance works, including any access road and parking spaces (Figure 2).

3.5 Research Objectives

3.5.1 The following research objectives were set out within the approved Written Scheme of Investigation for the investigation:

- To determine if possible the date of the earliest human activity in this area and the subsequent sequence of occupation.
- To help further inform our understanding of past activity in this area of North London.
- To record any significant archaeological deposits or palaeoenvironmental sequences which may be exposed during construction work.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

- 4.1.1 The British Geological Survey 1:50,000 series (Map Sheet 256) indicates that the site is underlain by Kempton Park Gravel, which in turn overlies London Clay and Chalk.
- 4.1.2 Geotechnical information obtained from the site in 2006 (Jackson 2006) encountered made ground up to 2 metres in depth, over Alluvium.

4.2 Topography

- 4.2.1 The site currently comprises a relatively level car park, at elevations of around 15m OD.
- 4.2.2 The navigation channel of the River Lea is located directly along the site's eastern boundary, and the King George's Reservoir lies just beyond this.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 5.1 Unless referenced otherwise, the archaeological and historical background information cited below was obtained from the Archaeological Data Service's online search (<http://ads.ahds.ac.uk/catalogue/search>).

5.2 Prehistoric

- 5.2.1 Excavations carried out by MoLAS to the immediate north of the subject site in 1993 (site code MML93) yielded evidence of prehistoric environmental conditions (Bowsher 1994). These investigations recorded natural gravels from elevations of c.13.90m OD to 13.55m OD, dropping sharply to 12.50m OD to the east, indicative of a buried channel. These were overlain by early Mesolithic peat and middle to late Neolithic deposits. Radiocarbon dates from the organic rich layers gave dates of 7425-7050 BC, 6115-5835 BC and 3340-2890 BC, suggesting a period of erosion or a large hiatus in the sequence. The latter deposit appeared extremely dark, possibly due to soot incorporation as the result of large scale burning. This significantly coincides with the first major impact of Neolithic people in London.
- 5.2.2 An evaluation carried out along Millmarsh Lane (site code MLM00) identified a middle bronze age pit, a tree throw which contained a 'bloom' derived from iron production and a fluviially cut palaeochannel, aligned north-south, which contained alluvial deposits possibly representative of the early Mesolithic to Roman/Saxon periods (OAU 2001).
- 5.2.3 Some distance to the north of the Millmarsh Lane sites, archaeological investigations at the Rammey Marsh Sewage Treatment Works (sitecode RMA97) yielded considerable evidence of Late Bronze Age activity (Baker & Pugh 1976). Numerous ditches and gullies were identified as representative of a Late Bronze Age field system. Settlement activity was recognised in the form of posthole structures and pits, one of which yielded a loom weight fragment. Early investigations suggested that the remains of post-built structures were indicative of seasonal habitation. Throughout the course of investigations, over 61 pits were

identified, formed of three groups in a north-south alignment. To the east of the site, a water channel was recorded with indications of specialised waterside activity along the western bank. Timber structures within a pit were recorded in addition to a

- 5.2.4 Additional investigations carried out to the north-west and south-west of the study site at Aylands Allotments (AYL90) and the former Railway Goods Yard (KNW97) also encountered evidence of prehistoric activity. The former identified three phases of activity, the earliest being Late Mesolithic/Early Neolithic. This was encountered across the site, whereas the second phase of Late Bronze/Early Iron Age occupation was confined to gravels at the crest of the hill. The latter evaluation identified a series of postholes and a possible terminus of an enclosure ditch, dating to the Bronze and Iron Ages. Documentary sources suggest additional occupation sites lay in Hadley Wood and near the Lea at Ponder's End (Baker & Pugh 1976).

5.3 Roman

- 5.3.1 Evidence for Roman activity within the immediate vicinity is limited. An evaluation to the south-west at a former Railway Goods Yard (KNW97) identified a Roman ditch which was thought to be representative of a much larger field system. To the north of the study site, at the former Rammey Marsh Sewage Works (RMA97), a Roman ditch was encountered running parallel to the western edge of a natural water channel aligned north-south. Prehistoric features were also sealed by alluvium containing Roman material (Baker & Pugh 1976).
- 5.3.2 Indications of water management were identified at the Royal Ordnance Factory (ONR97). The evaluation identified a number of palaeochannels, the earlier of which was associated with a wooden bank revetment. Radiocarbon dating of this structure indicated a late Roman or sub-Roman date range. These remains were considered to indicate that a coherent water management system was in place by this period (Baker & Pugh 1976).
- 5.3.3 Roman finds, primarily deriving from the exploitation of natural brickearth and gravel within the borough, have been documented from at least 1816 (Dearne 2008, 90). Dearne considers the valley to have represented a communications corridor from the Thames, utilised by Ermine Street. Evidence detailing the precise position of this road, believed to have passed into the parish south of Enfield Town and east of Forty Hill and Bull's Cross (Baker & Pugh 1976), is limited. Excavations in 1988 however identified part of the road near Bush Hill Park and suggested that a settlement lay to the immediate west of Ermine Street.
- 5.3.4 The Bush Hill Park settlement is estimated to have occupied around 5.4 ha. on a strip of land over 450m long by 120m, with its southern boundary formed by an east flowing stream (Dearne 2008). Throughout the course of numerous excavations, it appeared that the settlement was long-lived and successively modified well into the 4th century AD. Dearne suggests that the settlement could have had a role in a mechanism of supply which led from a rural production zone via processing and redistribution centres on to Ermine Street and then onto Londinium. Metalled surfaces were identified during excavations as well as clear indications of an industrial zone, and suggestions of a potential Mansio in the vicinity.

5.4 Saxon and Medieval

- 5.4.1 There is limited evidence for the Saxon and Medieval periods within the vicinity of the site.
- 5.4.2 A church probably existed within the parish by 1086, near the feld or clearing which gave its name to Enfield (Baker & Pugh 1976). At this time the area was primarily covered by woodland and remained predominantly undeveloped. The medieval settlement was believed to have been concentrated to the east, between Enfield Chase and the marshes by the Lea.
- 5.4.3 The manor of Enfield was held by Ansgar the staller in 1066 and by Geoffrey de Mandeville in 1086. The land then passed through a series of successive owners until held by the de Bohun family from the mid 13th century until the early 15th century when it was granted to the duchy of Lancaster (Baker & Pugh 1976).
- 5.4.4 Archaeological excavations at Ayland Allotments (AYL90) recorded two sunken feature buildings of early Saxon date. No documentary evidence of subsequent settlement until the present was found.
- 5.4.5 The main high street of Enfield, mentioned in 1260 (Baker & Pugh 1976), may have followed the route of present Hertford Road, which lies to the west of the study site. Ribbon developments concentrated along the major highways such as this may have represented the only major occupation, leaving the remainder of the parish relatively undeveloped. Common arable fields were first recorded in the 13th century and occupied over half of the cultivated land by 1572. The common marshes immediately adjoining the Lea, in the vicinity of the study site, were used for grazing.

5.5 Post-Medieval

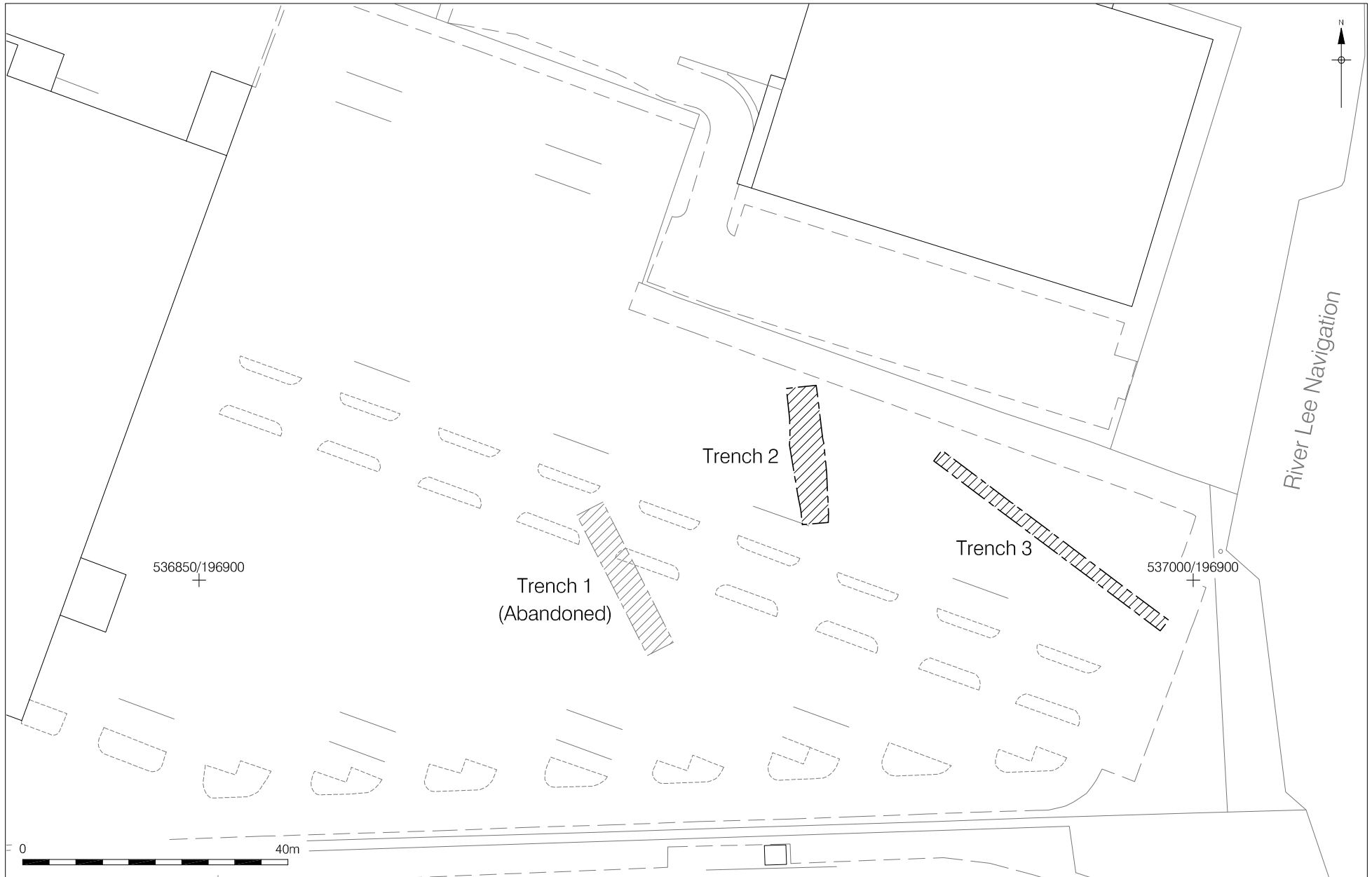
- 5.5.1 The modern layout of Enfield Town began to assume its shape following the establishment of a market-place in 1632 on the site of the Vine (Baker & Pugh 1976). In 1806 however it was described as the 'skeleton of a market town' suggesting that large scale development was a relatively late occurrence. The eastern parts of the parish were the most thickly populated, with riverside or roadside settlements at Ponders End, Enfield Highway, Enfield Wash and Enfield Lock, in addition to the 19th century Royal Small Arms factory which produced the Lee-Enfield rifle.
- 5.5.2 The waterways were a significant factor in the development of the area. Numerous tributaries of the Lea ran through the borough, and an Act was passed in the late 16th century to make the Lea navigable as far as Ware, Hertfordshire. The work was completed by 1576. Additional improvements were required during the 18th century and work began on the Enfield Cut of the Lea Navigation in 1769 and on the 'Edmonton Cut' or the southern extension in 1770. The subsequent increase in river traffic led to the construction of second lock at Ponders End in 1793. The former course of the Lea was finally submerged under the 446 acre King George's Reservoir which opened in 1913 (Baker & Pugh 1976).
- 5.5.3 The earliest available cartographic source (not reproduced), illustrates the site and its vicinity as undeveloped until 1885. At this time the subject site is occupied by open fields. By 1913 the site becomes partially developed and a warehouse was constructed at the south-eastern

corner of the subject area. Brimsdowne Lead Works, an electrical power station and a tramway were sited c.100m to the north.

- 5.5.4 By 1935 the site was illustrated as being partly located on a Rolling Mill and a Ruberoid works. Some subsidiary buildings from the Ruberoid works were located along the southern boundary and part of the Rolling Mill was on the northern tip of the site. The remainder of the study area appears to have been in use as an open yard. Furthermore, the large artificial pond is clearly depicted running along the southern boundary and into the central part of the eastern limits of the site.
- 5.5.5 Ordnance Survey maps of 1967 depict numerous alterations to the area. Furthermore, the entire vicinity of the site is now developed, primarily with industrial works. The western limits of the 'pond' have been backfilled, whereas a larger 'U' shaped additional pond appears to the south-east. The large structure to the north remains in place, and additional structures appear within central western area and in the south-eastern corner. Train tracks are clearly visible as connecting the latter structure with works to the north.
- 5.5.6 By 1991, all previous structures and train tracks have been cleared from the site and ponds backfilled and levelled. The site remains unchanged to the present, and it is understood that it has been utilised as a car park for at least 15 years.

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 In accordance with the Written Scheme of Investigation (Gidman 2010), the trenches were arranged to fully investigate the underlying drift geology and the presence or absence of significant archaeological remains across the site (Figure 2).
- 6.2 Three trial trenches were proposed, the dimensions of which at ground level were:
- Trench 1 abandoned
 - Trench 2 21m x 4m
 - Trench 3 42m x 4m
- 6.3 The trenches were machine excavated to a maximum depth of 2.40m below the current ground surface, or to the top of archaeological or natural horizons. The trenches were stepped to allow safe access from 1.20m. The eastern limits of Trench 3 were stepped twice to a maximum depth of 3.50m to investigate the underlying geology. Potential features were then hand cleaned and partially excavated. Deposits and features within Trench 3 were recorded from ground level due to extensive contamination within the made ground (Plates 2 and 3).
- 6.4 Trenches were excavated using a 360° machine with a flat bladed ditching bucket, under the supervision of the attendant archaeologist. Once recorded, the trenches were backfilled with the excavated material.
- 6.5 One or more representative sample sections, each 2.5m wide, were cleaned and recorded in each trench. The base of each trench was also hand-cleaned before recording, along with any archaeological features. The latter were half sectioned or slotted in order to obtain dating evidence prior to recording.
- 6.6 The recording systems employed during the evaluation were fully compatible with those most widely used elsewhere in London; that is those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeology Service (MoLAS 1994). Individual descriptions of all archaeological strata and features excavated and exposed were entered onto pro-forma recording sheets. All plans and sections of archaeological deposits were recorded on polyester based drawing film, the plans being drawn at a scale of 1:50 or 1:20 as appropriate and the sections at 1:10. The OD heights of all principal strata were calculated and indicated on the appropriate plans and sections. A full photographic record of the investigation was prepared, including both black and white prints and colour transparencies on 35mm film.
- 6.7 Levels were taken from Temporary Bench Marks established across the site, which were calculated using site survey plans. The baselines of each trench were triangulated using surveyed landmarks and tied into the Ordnance Survey Grid.



© Crown copyright 2010. All rights reserved. License number PMP36110309
 © Pre-Construct Archaeology Ltd 2010

Figure 2
 Trench Location Plan
 1:800 at A4

7 ARCHAEOLOGICAL PHASE DISCUSSION

7.1 Phase 1: Natural: Kempton Park Gravels and Peat (Figures 3 & 4, Plate 4)

- 7.1.1 Natural deposits were exposed in all excavated trenches, and comprised the Kempton Park Gravel formation. London Clay was not identified during the investigation, however, previous borehole data suggests that this lies between 9.25m OD and 9.40m OD along the northern boundary of the site, sloping to 9.05m OD at the south-eastern extent.
- 7.1.2 The earliest deposits encountered within Trenches 2 and 3 consisted of deposits [3] and [14] respectively. These comprised blue-grey/yellow-grey coarse sandy, well-sorted, medium flint gravels. The gravel within Trench 2 was relatively level throughout the trench, recorded at 13.48m OD, whereas the gravels exhibited an eastern declination within the base of Trench 3 from 13.78m OD to 13.65m OD. Previous borehole investigations identified comparable gravels at only four locations within the study site. It is therefore difficult to project any broad trends in the topography of the underlying geology. It is noteworthy that all deposits were identified at markedly lower levels than those recorded within the evaluation trenches. Natural gravels were encountered between elevations 13.25m OD at the north-west of the study site, and 12.40m OD along the northern boundary. This may suggest that the gravels drop in elevation towards the river to the east, and the deposits encountered within the trenches represent a higher outcrop by comparison to the surrounding geology
- 7.1.3 Numerous boreholes throughout the central and southern areas of the subject site failed to identify gravels despite drilling to over 12.50m OD in depth. Boreholes placed along the eastern limits of the site were excavated to a maximum depth of 8.50m OD without encountering gravels. This supports the findings of the evaluation, specifically the eastern limits of Trench 3, in which natural gravels were absent. The earliest identified deposit in this vicinity comprised firm, dark reddish-brown peat, containing frequent organic inclusions including large tree roots. Deposit [6] was recorded from a maximum elevation of 12.65m OD, within a small sondage. This extended to an observed depth of 0.40m, and continued beyond the limit of excavation. Unfortunately the only boreholes within the vicinity were abandoned due to concrete obstructions and therefore could not be used as comparisons. The presence of a large concreted sewer pipe which bisected Trench 3 prevented the relationship between peat [6] and gravel [14] being established.

7.2 Phase 2: Natural Cut Features (Figure 4, Plate 4)

- 7.2.1 A number of cut features were identified within Trench 3 which truncated natural deposits. Furthermore these features were recorded from ground level due to extensive contamination within the trench, and therefore additional investigation in order to obtain dating material was prevented.
- 7.2.2 Cut [11] truncated gravels from 13.75m OD and ran perpendicular to the trench in a roughly NE-SW alignment, 1m (length) x 0.55m x 0.80m depth. The base was recorded at c.13.15m OD and in profile it exhibited a concave western and steep eastern side. This profile is consistent with a naturally scoured channel, indicative of an eastern meander. The feature

was therefore interpreted as a former tributary of the River Lea. The cut was filled in its entirety by [10], a firm deposit of light blue-grey silty clay, interpreted as natural alluvium.

- 7.2.3 Towards the western limits of Trench 3, deposit [12] was identified. This extended 1.40m east-west x 0.30m and continued beyond the southern limit of excavation. The deposit comprised firm, dark brownish grey silty clay containing moderate organic inclusions. This was left in situ at c.13.78m OD and tentatively assigned the cut number [13]; interpreted as a tree throw of uncertain date.

7.3 Phase 3: Alluvium (Figures 3 & 4, Plate 4)

- 7.3.1 Peat deposit [6] within Trench 3 was overlain by a 0.30m thick layer of very soft, light grey silty-sandy clay. This was recorded from c.12.95m OD, and was observed in a sondage. Two deposits identified within environmental investigations in 2005 (Kelly), to the east and south-east of the trench may be comparable. Boreholes 3 and 5 recorded very soft, saturated silty clay deposits at elevations of 12.35m OD and 12.54m OD respectively. The lack of equivalent deposits recorded throughout the remainder of the site, or observed during the archaeological investigations would suggest this layer to be limited to the eastern limits of the subject site, and that the deposit exhibits a general south-eastern declination.
- 7.3.2 Gravels within Trench 2 were sealed by a 0.32m thick deposit of mid orange-brown sandy silt [7], interpreted as alluvium. This was identified at elevations of between 13.79m OD and 13.65m OD. Similar deposits were recorded within borehole and window samples across the western limits of the site. These suggest that a layer of orange-brown alluvium underlies the site from c.13.60m OD in the west, sloping to 13.44m OD in the east. No comparable deposits were noted for the southern limits of the study site. Large ponds appear on early 20th century Ordnance Survey maps of the site, and therefore it may be assumed that these truncated geological deposits including alluvial horizons to a considerable depth.
- 7.3.3 A 0.45m thick band of alluvium [2] subsequently sealed [7] from 14.28m OD. The layer comprised firm, mid brown-grey to blue-grey, sandy clay with occasional inclusions of small to medium sub-rounded flint nodules. This was equated with alluvial deposits [9] and [4] as identified within Trench 3 from elevations of 14.18m OD and 13.85m OD from west to east respectively. Data from window samples within the vicinity of both trenches recorded comparable deposits between elevations of 14.54m OD to the west and 14.24m OD to the east. Similarly to previous layers, no comparable data was revealed within investigations carried out along the subject site's central southern boundary.

7.4 Phase 4: Modern Levelling (Figures 3 & 4, Plate 4)

- 7.4.1 Both trenches were sealed by a 0.25m thickness of firm, dark blue-grey/brown-black silty clay. These were denoted as deposits [1] and [8] within Trenches 2 and 3 respectively. Both layers contained occasional to moderate inclusions of sub-angular flint nodules, occasional small shells (mollusc) and medium to large CBM fragments. These were identified from elevations of 14.51m OD and 14.42m OD and upon excavation had a distinctive smell of hydrocarbons. As such, the deposits were interpreted as contaminated, redeposited alluvium utilised as

levelling and therefore of probably late 19th or early 20th century date. A review of the borehole data revealed that borehole 7 and window sample 5, directly to the north and south of the evaluation trenches, encountered comparable layers from the slightly raised elevation of 14.80m OD, interpreted as alluvium.

- 7.4.2 Both trenches were subsequently sealed by a c1.20m thickness of loose made ground. This compares well with the results of the geotechnical investigation which revealed a depth of made ground of between 1m and 1.3m for the majority of the subject site, with a maximum depth of 2m encountered along the southern limit.

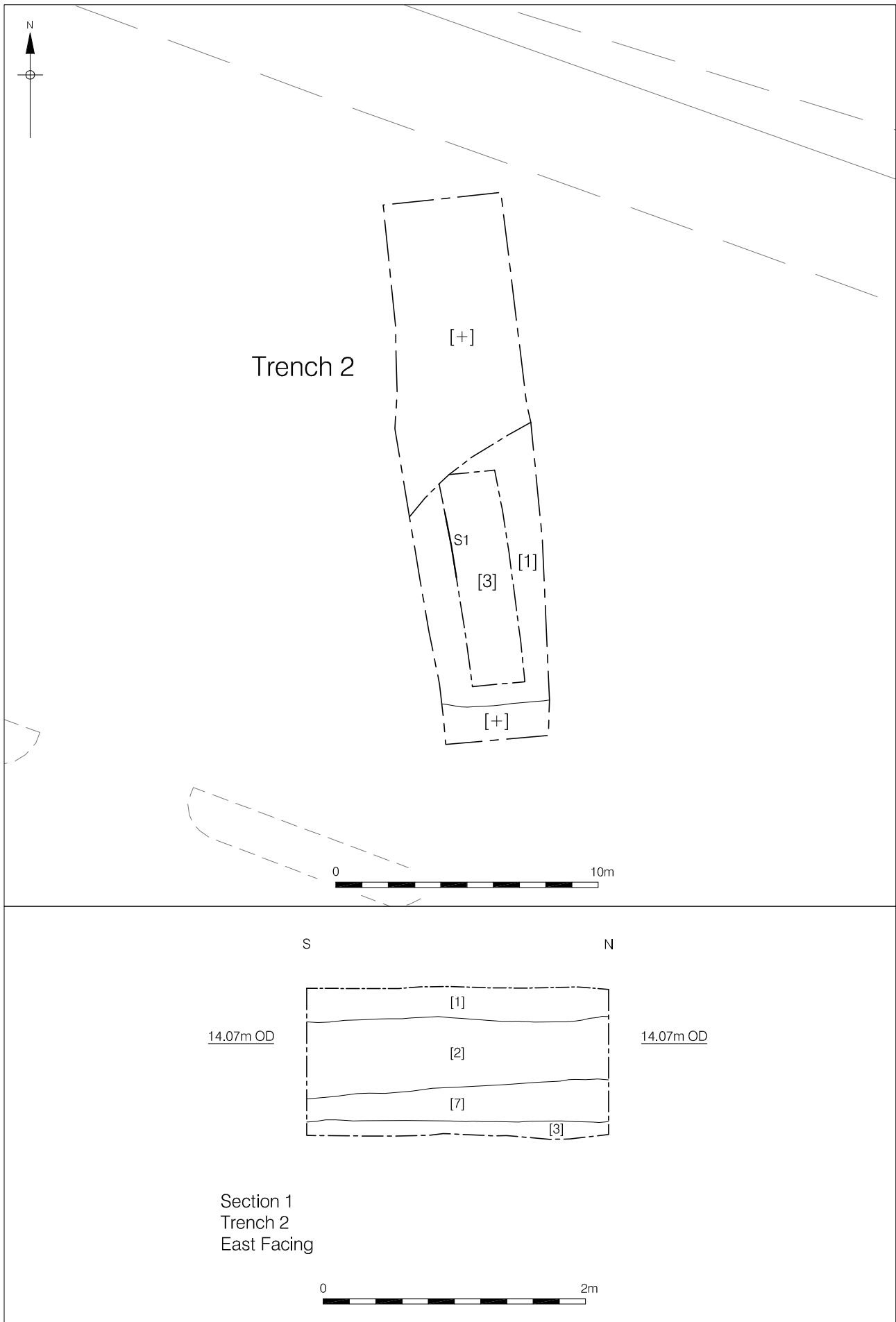


Figure 3
 Plan of Trench 2 and Section 1
 Plan - 1:200 and Section - 1:40 at A4

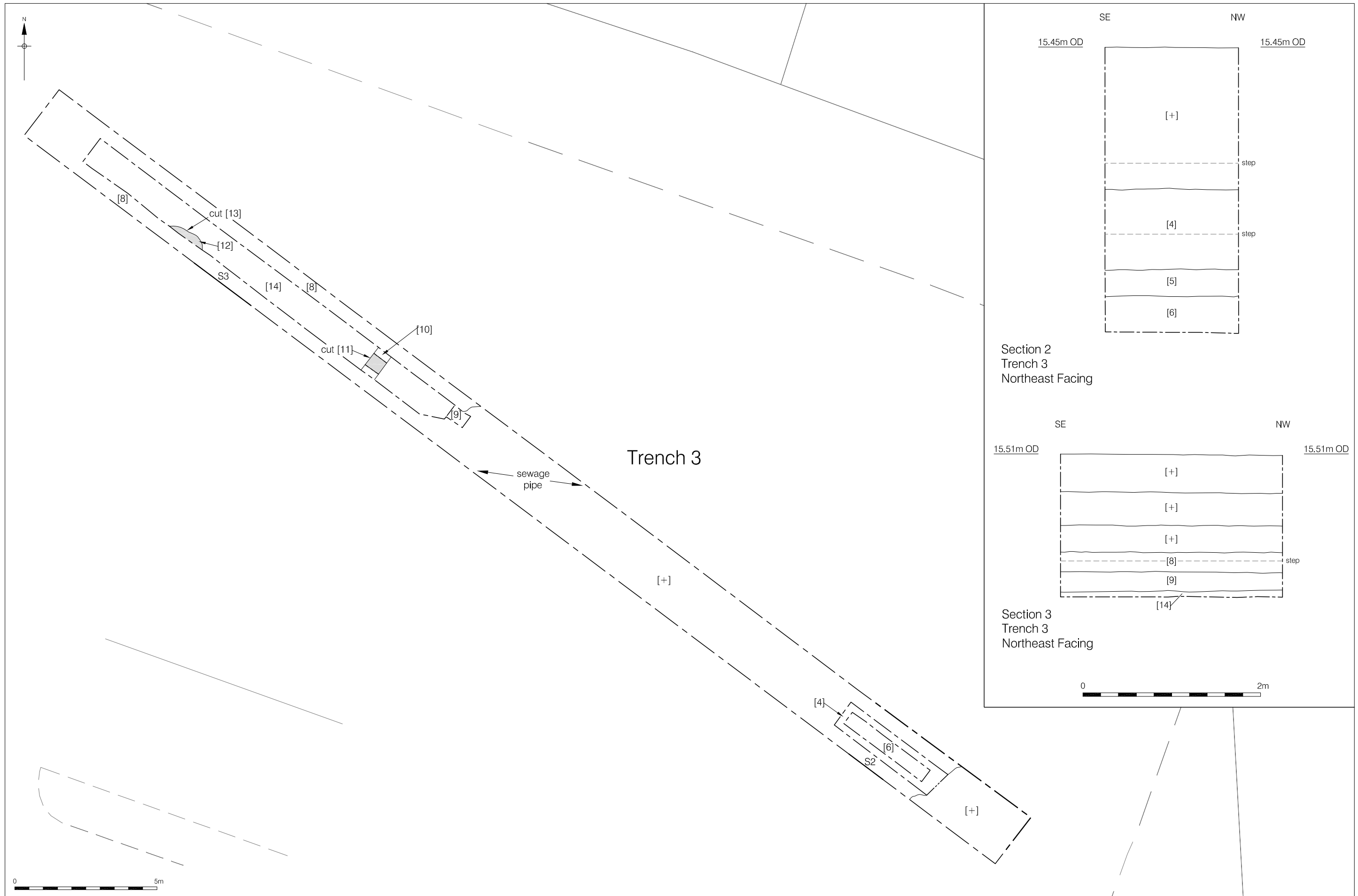


Figure 4
 Plan of Trench 3 and Sections 2 and 3
 Plan - 1:125 and Sections - 1:40 at A4

Plate 1: NW end of Trench 1 showing severe concrete intrusions



Plate 2: Concrete breaking in progress in Trench 3



Plate 3: South-eastern end of Trench 3 showing oil contamination



Plate 4: Channel [11] bisecting Trench 3



8 INTERPRETATIONS AND CONCLUSIONS

8.1 The principal objectives of the archaeological evaluation were to:

- To determine if possible the date of the earliest human activity in this area and the subsequent sequence of occupation;
- To help further inform our understanding of past activity in this area of North London;
- To record any significant archaeological deposits or palaeoenvironmental sequences which may be exposed during construction work; and

8.2 These objectives were achieved and the results are summarised below.

8.3 Natural Geology

8.3.1 Natural deposits were exposed in all excavated trenches and comprised the Kempton Park Gravel formation. These exhibited a general eastward declination from 13.78m OD to 13.65m OD but were totally absent from the easternmost excavation areas. These reflected the results of previous environmental investigations. Boreholes and window samples encountered gravels at slightly lower elevations of between 13.25m OD and 12.40m OD. The latter however is likely a result of extensive truncation for 20th century 'ponds' as recorded cartographically.

8.3.2 Excavations to the north of the subject site (MML93) support the findings of the evaluation, and recorded natural gravel as sloping between elevations of 13.90m OD and 13.60m OD from west to east. These investigations noted that the levels then dropped significantly to 12.50m OD, indicative of a buried channel along the eastern boundary of the site (Figure 5) which may explain the absence of gravel within the eastern most limits of Trench 3, in which peat was recorded. The results of the evaluation and those of previous investigations suggest that the underlying gravels exhibit a general south-easterly downward slope towards the former course of the River Lea. The possible buried channel found here may therefore represent a former meander or tributary of the River Lea.

8.3.3 The earliest identified deposit to the east of Trench 3 comprised natural peat from c.12.65m OD. Excavations and evaluations carried out to the north of the study area identified Peat within the most easterly trial pits only, reflecting the distribution of the study site. Early Mesolithic peat was identified at 12.75m OD, overlain by organic-rich layers dated to the middle to late Neolithic from 13.20m OD. It may therefore be hypothesised that the peat and overlying alluvial deposits within the eastern sondages of Trench 3 are contemporary.

8.4 Natural Cut Features

8.4.1 Two potentially natural features were identified within Trench 3: a north-south aligned palaeochannel and a tree throw. Investigations to the north of the study site along Millmarsh Lane (MLM00) similarly identified a north-south aligned palaeochannel but also an undated north-south aligned ditch which ran parallel to the Lea Navigation, to the west. The basal level of the channel was recorded at c.13.70m OD at Millmarsh Lane whereas the channel within the study site was identified as extending from 13.75m OD with base at 13.15m OD. These

features are unlikely to be related and may therefore be interpreted as tributaries from the former course of the River Lea. The profile of the channel within Trench 3, consistent with an eastern meander, would support this.

8.5 Alluvium

8.5.1 Both trenches were sealed by alluvium from an uppermost elevation of 14.28m OD. Window samples and boreholes within the area identified similar deposits from the slightly higher elevation of 14.54m OD. These local variations are however more likely indicative of variable modern truncation as opposed to any broad trends in the distribution of these deposits. Previous work carried out along Millmarsh Lane in 2000 (MLM00) and 1993 (MML93) encountered alluvium between comparable elevations of c.14m OD and c.14.50m OD. These layers were analysed and found to be primarily waterlain with a series of horizons indicative of variable energy levels. The layers encountered within the evaluation support these findings, and alluvial bands were identified with inclusions of flint nodules, sealed or sealing well sorted silts with few inclusions, suggesting a combination of both high and low energy deposition. These findings are consistent with flood deposits deriving from the former course of the River Lea to the east.

8.6 Modern Levelling

8.6.1 The subject site was sealed by considerable depths of made ground, including redeposited alluvium utilised as levelling. These findings correspond well to previous works carried out within the subject site itself and investigations carried out along Millmarsh Lane to the immediate north. All investigations reported extensive levelling and modern horizontal truncation. Cartographic and documentary sources suggest that the study site formerly lay within or just beyond marsh lands used as common grazing until the 19th century. It seems likely that given the primarily wet conditions, extensive ground raising and ground consolidation took place prior to any development within the wider area.

8.6.2 The made ground within Trenches 2 and 3 showed extreme levels of contamination, with oil residues seeping from within the layers.

8.7 General

8.7.1 The evaluation did not reveal any evidence for human activity or occupation pre-dating the modern era. It can be supposed that the predisposition of the site to flooding episodes had rendered it unsuitable for human activity.

8.7.2 The results of previous geotechnical investigations at the site have been used to extrapolate Transects (Figures 5-8). These demonstrate the varying nature of the alluvial and geological stratigraphy on the site, and emphasise the topographic variations present atop the geology. Transect 1, aligned roughly SW-NE, suggests the presence of a high ridge of gravel in the vicinity of Trench 2, whilst Transect 2 shows no gravel but an erratic surface model of alluvial deposition. Transect 3, partially formed of the sections recorded from Trench 3, shows a peat deposit in a location commensurate with the projected alignment of the channel recorded to

the north of the site, and also suggests a thickening of alluvium at the sites' NW corner. The general picture formed is one of a varying natural profile to the geological strata with abraded channels running alongside and to the River Lea. The undulating topography has been levelled by a successive flooding episodes, resulting in a varied alluvial sequence on the site.

- 8.7.3 The severe levels of contamination recorded on site prevented the recovery of any environmental samples for assessment (Plate 3). However, the results from the evaluation have been closely related to those from the site to the north and can be confidently fitted into the sequences which were recorded during previous work there.
- 8.7.4 The site archive will be deposited with the London Archaeology Archive and Research Centre (LAARC) under the site code SWZ10.

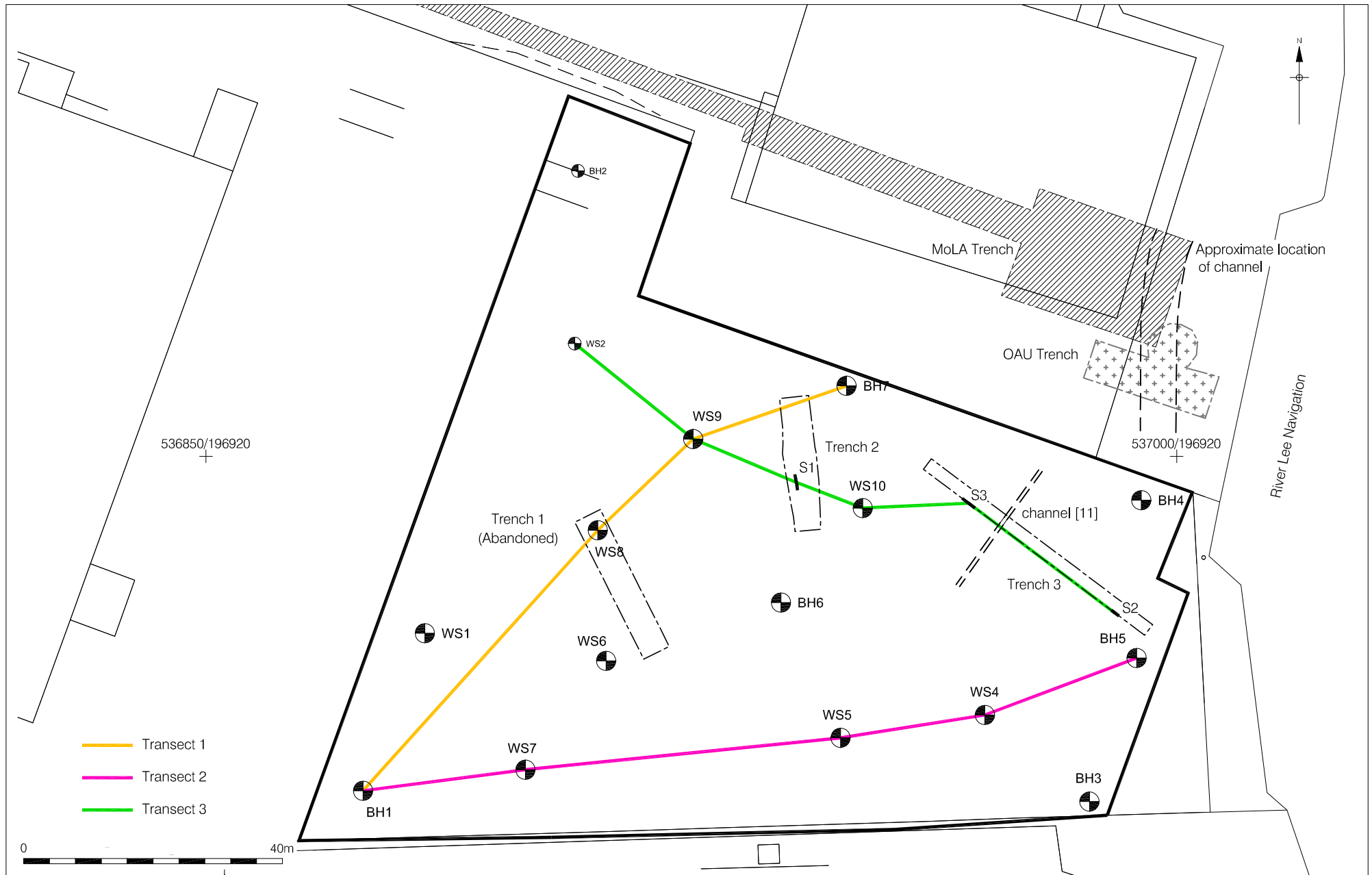
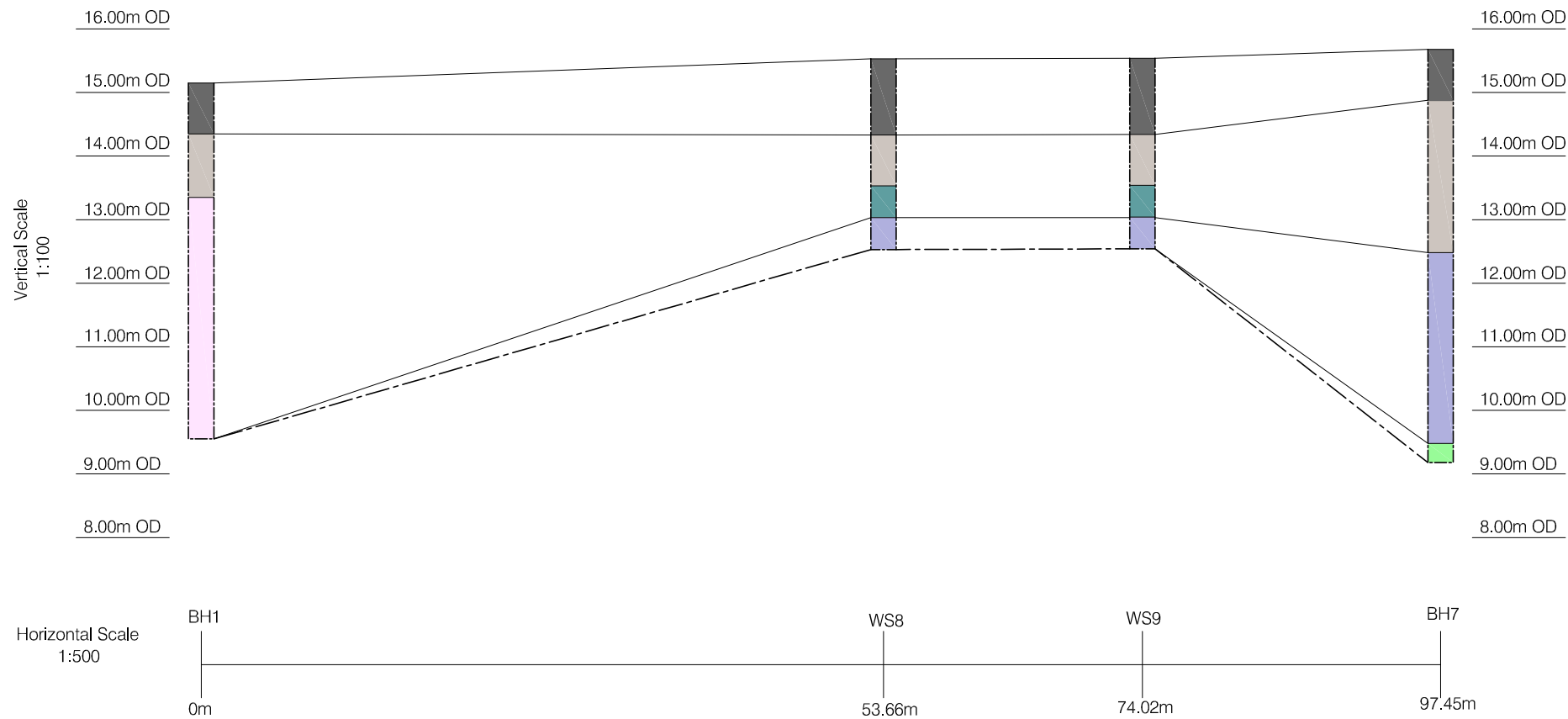
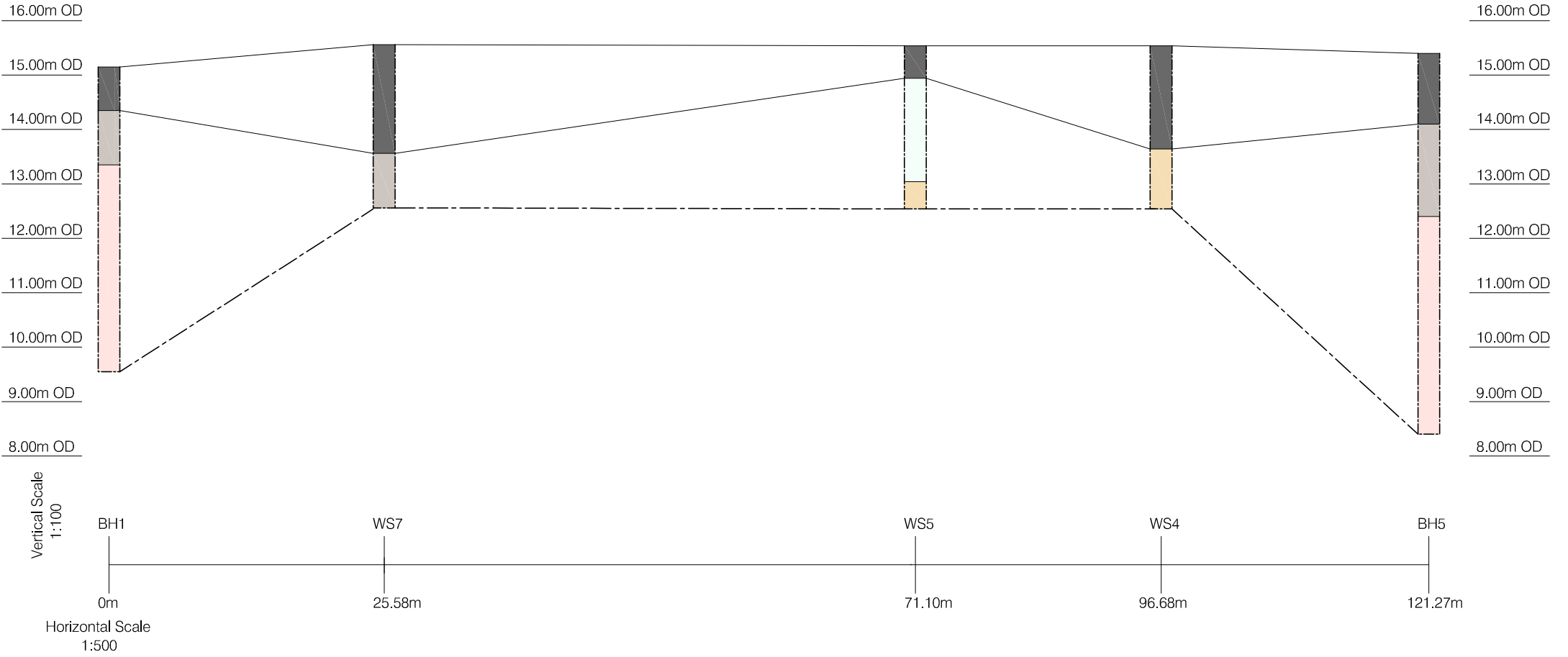


Figure 5
Transect Location
1:800 at A4



- | | | | |
|---|-----------------------------|---|---------------------|
|  | Tarmac/Concrete/Made ground |  | Alluvium (gravelly) |
|  | Alluvium (silty) |  | Gravel |
|  | Alluvium (sandy) |  | London Clay |

Figure 6
Transect 1
1:100 and 1:500 at A4



- Tarmac/concrete/made ground
- Alluvium (sandy)
- Alluvium (clay)
- Alluvium (gravelly)
- Alluvium (silty)

Figure 7
Transect 2
1:100 and 1:500 at A4

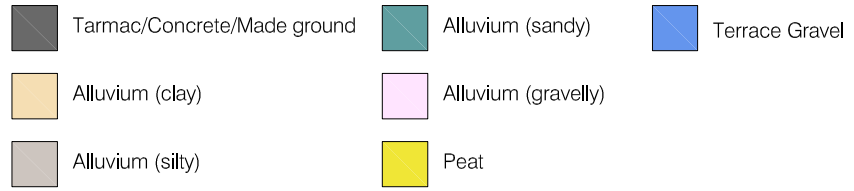
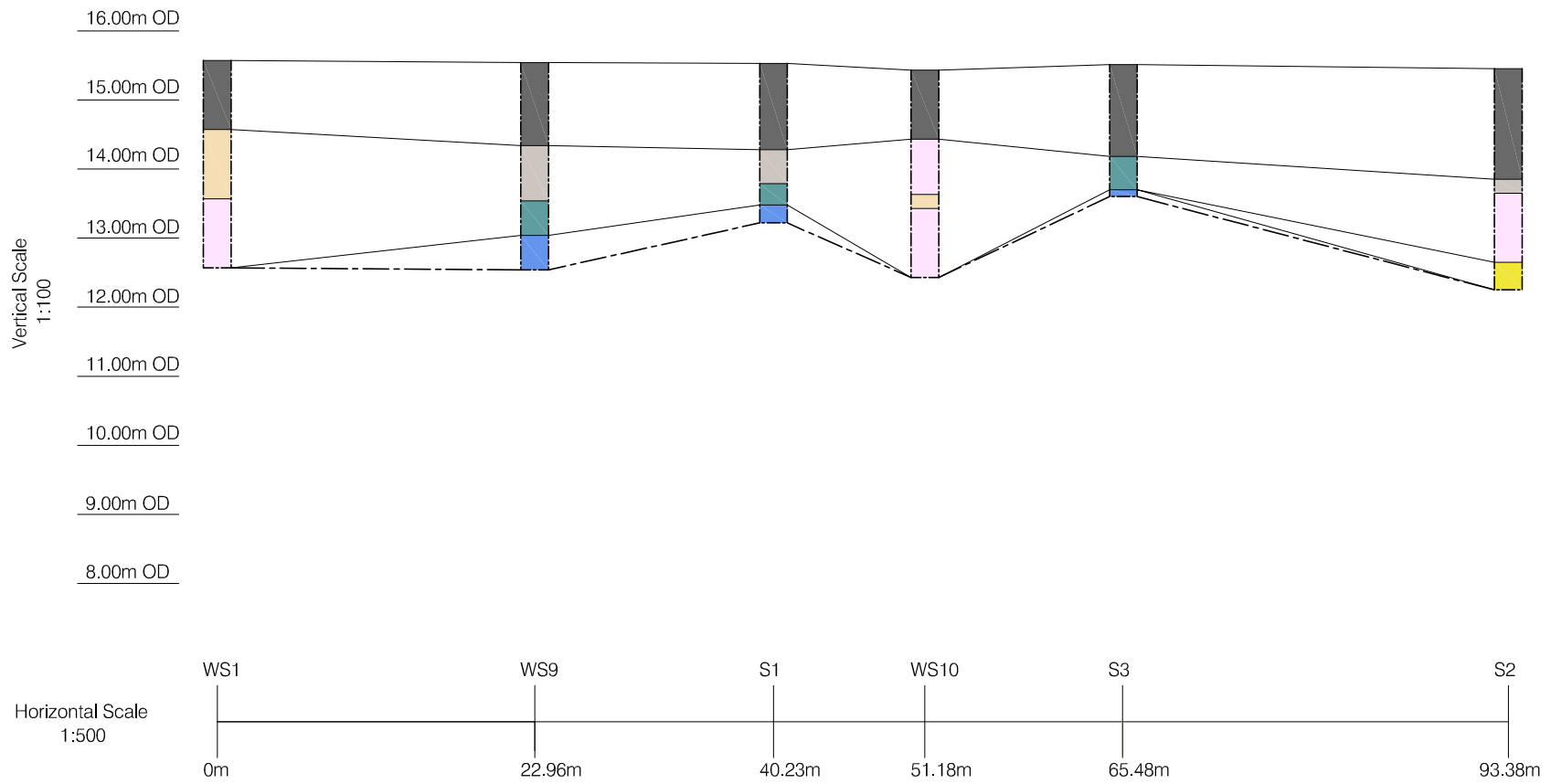


Figure 8
Transect 3
1:100 and 1:500 at A4

9 ACKNOWLEDGEMENTS

- 9.1 Pre-Construct Archaeology Ltd would like to thank Suzanne Gailey of CgMs Consulting for commissioning the work on behalf of Legal and General Partners Services Limited, and Kim Stabler of English Heritage for monitoring the evaluation on behalf of the London Borough of Enfield.
- 9.2 The author would like to thank Chris Mayo for his project management and editing, Mark Roughley for the illustrations and Matthew Edmonds and Phil Frickers for their on-site assistance with the fieldwork. The author would also like to thank Pete Boyer for his on-site supervision and Lisa Lonsdale for technical and logistical support.

10 BIBLIOGRAPHY

- Baker, T, F, T, and Pugh, R (eds.) 1976, A History of the County of Middlesex: Volume 5: Hendon, Kingsbury, Great Stanmore, Little Stanmore, Edmonton Enfield, Monken Hadley, South Mimms, Tottenham, London, pp. 207-229.
- Bowsher, D. 1994, 'Delta Cable Works, Millmarsh Lane, London Borough of Enfield: Archaeological Watching Brief', unpublished report for MoLAS
- Dearne, M. J. 2008, 'Roman Enfield: a redistributive role for roadside settlements?' in Clark, J, et al, Londinium and Beyond: Essays on Roman London and its hinterland for Harvey Sheldon, pp90-95
- Gidman, J. 2010, 'Specification for an Archaeological Evaluation, Car Park, 57 Stockingswater Lane, Enfield', Unpublished report for CgMs Consulting
- Jackson, R. 2006, 'Ground Investigation Report, Makro Car Park, Stockingswater Lane, Enfield', Unpublished document
- Kelly, A. 2005 'Draft: Phase I and II Environmental site Investigation, Makro Car Park, 57 Stockingswater Lane, Enfield', Unpublished document for Environ
- Oxford Archaeological Unit 2001, 'Delta Works, Millmarsh Lane, Enfield, London: Archaeological Evaluation Report', unpublished report

11 APPENDIX 1: CONTEXT INDEX

Site Code	Context No.	Plan	Section / Elevation	Type	Description	Date	Phase	Photos No.
SWZ-10	1	Trench 2	1	Layer	Grey Alluvium	Modern	4	1/2 (14-19); D2 (3-4)
SWZ-10	2	-	1	Layer	Yellow Alluvium	Alluvium	3	1/2 (14-19); D2 (3-4)
SWZ-10	3	Trench 2	1	Layer	Natural Gravel	Natural	1	1/2 (11-19); D2 (2-4)
SWZ-10	4	Trench 3	2	Layer	Grey Alluvium	Alluvium	3	D1
SWZ-10	5	-	2	Layer	Grey silty clay	Alluvium	3	D1
SWZ-10	6	Trench 3	2	Layer	Peat	Natural	1	D1
SWZ-10	7	-	1	Layer	Sandy silt	Alluvium	3	1/2 (14-19); D2 (3-4)
SWZ-10	8	Trench 3	3	Layer	Levelling	Modern	4	1/2 (5-7)
SWZ-10	9	Trench 3	3	Layer	Alluvium	Alluvium	3	1/2 (5-7)
SWZ-10	10	Trench 3	-	Fill	Fill of [11]	Natural (Cut Features)	2	1/2 (8-10)
SWZ-10	11	Trench 3	-	Cut	Natural Channel	Natural (Cut Features)	2	1/2 (8-10)
SWZ-10	12	Trench 3	-	Fill	Fill of [13]?	Natural (Cut Features)	2	1/2 (5-7)
SWZ-10	13	Trench 3	-	Cut	Possible cut (unexcavated)	Natural (Cut Features)	2	1/2 (5-7)
SWZ-10	14	Trench 3	3	Layer	Natural Gravel	Natural	1	1/2 (2-7)

13 APPENDIX 3: OASIS REPORT FORM

OASIS ID: preconst1-82698

Project details

Project name	An Archaeological Evaluation at 57 Stockingswater Lane, Enfield
Short description of the project	Two of three planned evaluation trenches were excavated; one abandoned due to extensive concrete and modern obstructions. Natural gravels were exposed in the bases of both trenches, and natural deposits of Peat recorded to the east of the study site. Natural gravels were truncated to the east by a north-south aligned fluvially cut channel, interpreted as a former tributary of the River Lea, and a potential tree throw. Layers of alluvium sealed all features and were overlain in turn by considerable deposits of 20th century made ground. No archaeological features were recorded.
Project dates	Start: 23-08-2010 End: 01-09-2010
Previous/future work	No / Not known
Any associated project reference codes	SWZ 10 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Other 15 - Other
Monument type	WATERCHANNEL Uncertain
Significant Finds	NONE None
Methods & techniques	'Sample Trenches'
Development type	Car park (flat)
Development type	Urban commercial (e.g. offices, shops, banks, etc.)
Development type	Warehouse
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	GREATER LONDON ENFIELD ENFIELD 57 Stockingswater Lane, Enfield
Postcode	EN3 7
Study area	4500.00 Square metres
Site coordinates	TQ 3692 9691 51.6537980816 -0.02050076780780 51 39 13 N 000 01 13 W Point
Height OD / Depth	Min: 13.65m Max: 13.78m

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd.
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	CgMs Consulting
Project director/manager	Chris Mayo

Project supervisor	Amelia Fairman
Type of sponsor/funding body	Private company
Name of sponsor/funding body	Legal and General Partners Services Limited

Project archives

Physical Archive Exists?	No
Digital Archive recipient	LAARC
Digital Contents	'Stratigraphic'
Digital Media available	'Images raster / digital photography','Images vector','Spreadsheets','Text'
Paper Archive recipient	LAARC
Paper Contents	'Stratigraphic'
Paper Media available	'Context sheet','Matrices','Miscellaneous Material','Notebook - Excavation','Research',' General Notes','Photograph','Plan','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An archaeological evaluation at 57 Stockingswater Lane, London Borough of Enfield, EN3
Author(s)/Editor(s)	Fairman, A
Date	2010
Issuer or publisher	Pre-Construct Archaeology Limited
Place of issue or publication	London
Description	A4 folio

Entered by	Chris Mayo (cmayo@pre-construct.com)
Entered on	20 September 2010

PCA

PRE-CONSTRUCT ARCHAEOLOGY LIMITED

UNIT 54

BROCKLEY CROSS BUSINESS CENTRE

96 ENDWELL ROAD

BROCKLEY

LONDON SE4 2PD

TEL: 020 7732 3925 020 7639 9091

FAX: 020 7639 9588

EMAIL: info@pre-construct.com

PRE-CONSTRUCT ARCHAEOLOGY LIMITED (NORTHERN OFFICE)

UNIT 19A

TURSDALE BUSINESS PARK

DURHAM DH6 5PG

TEL: 0191 377 1111

FAX: 0191 377 0101

EMAIL: info.north@pre-construct.com

