

**LANGDON SCHOOL
SUSSEX ROAD
EAST HAM
LONDON BOROUGH OF
NEWHAM**

**ARCHAEOLOGICAL
EVALUATION**

MARCH 2011

LAN 11

REPORT: R11023

**An Archaeological Evaluation at Langdon School, Sussex Road, London Borough
of Newham, E6 2PS**

Site Code: LAN 11

Central National Grid Reference: TQ 4358 8350

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April 2011

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1 ABSTRACT

- 1.1 This report details the results and working methods of an archaeological evaluation undertaken by Pre-Construct Archaeology Ltd at the Langdon School, Sussex Road, East Ham, Newham. The central National Grid Reference for this site is TQ 4358 8350. The evaluation was undertaken between the 18th and 25th of February 2011. The commissioning client was Laing O'Rourke.
- 1.2 The archaeological programme consisted of three evaluation trenches. The evaluation aimed to determine the extent, condition, nature, character, quality and date of any archaeological remains present. The information derived from the evaluation will also be used to inform a strategy for any further mitigation.
- 1.3 The work was monitored by Dr Jane Sidell, the archaeological advisor for the London Borough of Newham.
- 1.4 Terrace gravel deposits were observed in one of the trenches, with their depth being established by probing in a second trench. The gravels were overlain by an alluvial clay sequence within all three trenches, with an additional layer of a peat observed within this sequence in the two trenches in the south of the site. The alluvium was sealed by 19th to 20th century made ground and landfill deposits.
- 1.5 With the exception of the peat deposits, of likely Middle Holocene date, no features of archaeological significance were observed during the evaluation.

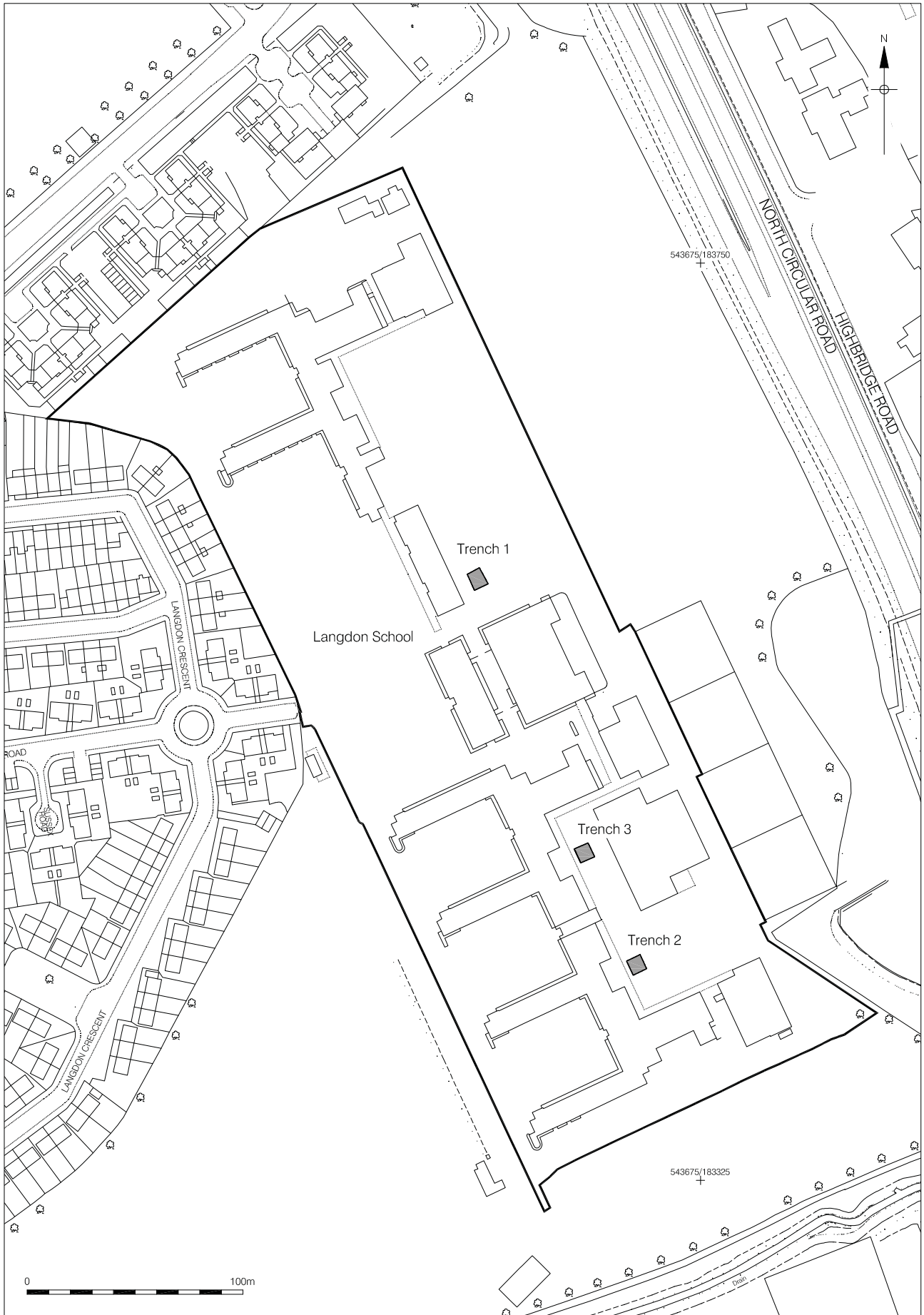
2 INTRODUCTION

- 2.1 An archaeological site investigation was undertaken by Pre-Construct Archaeology Ltd in advance of redevelopment at the Langdon School, Sussex Road, Newham (Figure 1). The archaeological evaluation involved the excavation and recording of three trial trenches which were undertaken to determine the archaeological potential of the site (Figure 2), prior to localised redevelopments.
- 2.2 The site is currently occupied by the Langdon School, which is the first development known to have occurred upon the site.
- 2.3 The evaluation revealed *in-situ* alluvium directly beneath deposits of 19th to 20th century made ground or landfill material. No anthropogenically generated archaeological features were observed, although deposits of peat were present within the alluvial sequence in the two trenches in the southern area of the site.
- 2.4 The commissioning client was Laing O'Rourke. The evaluation was supervised by Sarah Barrowman of Pre-Construct Archaeology Ltd. The project was managed for Pre-Construct Archaeology Ltd by Gary Brown, and was monitored by Dr Jane Sidell, the archaeological advisor for the London Borough of Newham.
- 2.5 The completed archive comprising written, drawn and photographic records will be deposited with the Museum of London LAARC under the unique site code LAN 11.



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Figure 1
 Site Location
 1:20,000 at A4



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Figure 2
 Detailed Site Location
 1:2,500 at A4

3 PLANNING BACKGROUND

3.1 National Policy: Planning Policy Statement (PPS5)

- 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 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 Archaeology in the London Borough of Newham

- 3.2.1 The study aims to satisfy the objectives of the London Borough of Newham, which fully recognises the importance of the buried heritage for which they are the custodians. The Borough's *Unitary Development Plan*, adopted 2001, contains policy statements in respect of protecting the buried archaeological resource.
- 3.2.2 The proposed development is subject to the Council's Archaeology Policy (note that PPS5 has replaced the referenced PPG16):

ARCHAEOLOGY

Archaeology: Investigation, Excavation and Protection

3.114 *Archaeological remains often provide the only evidence of the Borough's past. They are a finite and fragile resource very vulnerable to modern development and land use. The archaeology of the Borough is a community asset which should be preserved and the needs of development balanced and assessed against this. Early consideration of and consultation on archaeological issues will maximise preservation in accordance with PPG16. The destruction of such remains should be avoided if possible and either left in situ if the remains are of national or particular local interest, or excavated and recorded prior to development, where remains are of lesser importance. Site layouts designed to retain archaeological features intact will be considered favourably by the Council.*

3.115 *The Greater London Archaeology Advisory Service (GLAAS - part of English Heritage) provides impartial advice to Newham Council. Sites of potential archaeological importance, to which this policy relates, can be defined as any site within an Archaeological Priority Area (APA). APAs are defined by GLAAS as areas having particular interest or value (Please refer to Map EQ6), or as sites where it can reasonably be shown from existing sources of information (most notably the Greater London Sites and Monuments Record) that remains of archaeological importance may survive. For further information, please refer to SPG Note 'Archaeological Code of Practice'. An archaeological assessment (either a desk study or a preliminary field investigation) will normally be required for any development involving a site more than 0.4 acres within an APA. The Council will also require such an assessment for smaller sites within the APAs, and sites outside the APAs, where this is clearly justified by the archaeological sensitivity of the site. Developers should undertake early consultation with the Council, and recognised archaeological organisations such as GLAAS, to avoid uncertainty and later delays.*

POLICY EQ43: THE COUNCIL WILL PROMOTE THE CONSERVATION, PROTECTION AND ENHANCEMENT OF THE ARCHAEOLOGICAL HERITAGE OF THE BOROUGH. DEVELOPERS OF SITES OF POTENTIAL ARCHAEOLOGICAL IMPORTANCE WILL BE REQUIRED TO PRODUCE A WRITTEN REPORT, AS PART OF THE APPLICATION FOR PLANNING PERMISSION, ON THE RESULTS OF AN ARCHAEOLOGICAL ASSESSMENT OR FIELD EVALUATION CARRIED OUT BY A SUITABLY QUALIFIED ARCHAEOLOGICAL CONTRACTOR; AND WHEN REMAINS OF IMPORTANCE ARE IDENTIFIED, THE COUNCIL WILL SEEK PRESERVATION OF THE REMAINS IN SITU. ON OTHER IMPORTANT SITES, WHERE THE BALANCE OF OTHER FACTORS IS IN FAVOUR OF GRANTING PLANNING PERMISSION BY MEANS OF THE IMPOSITION OF CONDITIONS ON THE GRANT OF PLANNING PERMISSION, AND POSSIBLY BY LEGAL AGREEMENTS, THE COUNCIL WILL ENSURE THAT ADEQUATE PROVISION IS MADE FOR THE PROTECTION, EXCAVATION AND RECORDING OF REMAINS, AND THE SUBSEQUENT PUBLICATION OF THE RECORDS OF EXCAVATION, PROVIDING A WRITTEN ACCOUNT OF THE ARCHAEOLOGICAL EXPLORATION, INCLUDING RECORDS OF FINDS.

3.116 *The Council will promote co-operation between landowners, developers and archaeological organisations in accordance with the British Archaeologists' and Developers' Liaison Group Code.*

3.2.3 The site lies within an Archaeological Priority Zone, as defined in the London Borough of Newham's Unitary Development Plan. There are no Scheduled Ancient Monuments or Listed Buildings on the site.

3.3 Development Planning Permission

3.3.1 Planning permission for the site included the following archaeological condition:

No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme for investigation which has been submitted by the applicant and approved by the Local Planning Authority. The development shall only take place in accordance with the detailed scheme pursuant to this condition. The archaeological works shall be carried out by a suit ably qualified investigating body acceptable to the Local Planning Authority.

Reason: To provide opportunity for the recording of archaeological evidence and further research where necessary and with regard to Policy EQ43 of the London Borough of Newham Unitary Development Plan (adopted 2001, saved in accordance with the direction given by the Secretary of State for London on 27th September 2007), and Policy 4B.14 of the adopted London Plan, (adopted 2008, consolidated with alterations since 2004).

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

- 4.1.1 The British Geological Survey of England and Wales (Sheet 257 – Romford) indicates that the geological sequence of the area consists of made ground overlying alluvium, primarily sand, silt and clay with some gravel, which in turn seals London Clay. To the east lies the Barking gravel terrace and to the west lies the East Ham gravel terrace.
- 4.1.2 Borehole logs and trial pits previously conducted at the site revealed the Holocene floodplain as it comprised a sequence of made ground varying between 1.30m-2.30m overlying either 0.80m of peat or 1.50m of soft to firm grey silty-clay. Both of which capped approximately 2.00m of dense, grey sand and gravel with pebble inclusions which in turn sealed London Clay (Sadarangani 2002). More recent geotechnical works revealed made ground that was between 1.70m-3.50m thick, which overlay either silt or alluvium, with gravels encountered between 2.90m and 4.20m below ground level. Peat deposits were also identified within the alluvial sequence in the southern area of the site (RPS 2010).

4.2 Topography

- 4.2.1 The topography of the site is relatively flat, with a spot height of 2.67m OD by Trench 1, the northern-most trench, falling only gradually to 2.64m OD by the southern-most Trench 2.
- 4.2.2 The site is located approximately 300m west of the River Roding in between the Barking and East Ham gravel terraces. It is also situated c.500m north of the River Thames floodplain.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 5.1 The archaeological and historical background for the location of the site is laid out in full in the Desk-Based Assessment (Langthorne 2010). The following is a summary of the relevant parts of this document.
- 5.2 The Historic Environment Record demonstrates a fairly high degree of prehistoric activity within the vicinity of Langdon School. This encompassed Mesolithic activity within the marshland and Neolithic exploitation of the margin between the marshland and the gravel terrace. Bronze Age remains are particularly notable in the vicinity of the site especially the presence of trackways which indicates that there must have been occupation on the gravel terraces or their margins and associated exploitation of the flora and fauna of the marsh. The archaeological potential for the prehistoric periods is therefore considered to be moderate-high.
- 5.3 All evidence of Roman activity in the vicinity of the site has originated from the eastern side of the River Roding and the nearest Roman road was situated some distance to the north. As such, the archaeological potential for the Roman period is considered to be low.
- 5.4 A wide variety of Saxon and medieval activity has been encountered on the eastern side of the River Roding, principally associated with Barking Abbey. Waterfront structures, industrial activity and documentary evidence of a fish market have also been identified. However, considerably less medieval material has been found on the western side of the river where the study site is located due to this area being marshland which wasn't drained until the later medieval period. Due to the proximity of the abbey and the possibility of finding medieval drainage or field systems the archaeological potential for the Saxon and medieval periods is thus considered to be low-moderate.
- 5.5 Cartographic sources show the site to be situated in the East Ham Levels and as such could have been potentially used for agricultural or pasturing activities. By 1897 a drainage ditch crossed the site and between the 19th to 20th century land immediately to the south of the site and possibly the site itself was land-filled, presumably to raise the ground level rather than backfill a void. Following this the most significant change of use the site underwent was with the foundation of Langdon School itself in the mid 20th century. As such, the archaeological potential for the post-medieval period is considered moderate-high.

6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The methodology for the excavation of the trenches was outlined in the Written Scheme of Investigation (Brown 2011). It was agreed with the GLAAS officer for the London Borough of Newham that the Evaluation will be satisfied by the excavation of three trenches, each measuring a minimum 2m x 2m at base. Due to the need to use steps at 1.2m intervals the trenches were between 10m x 7m and 7 x 7m at the top. Two trenches were located at the site of the upper school extension, close to the existing structure but away from the concrete canopy, and the third was undertaken at the location of the new dining hall. In addition, a contingency was made for a fourth trench at the point of road widening/car parking at the north of the site and for a watching brief to be maintained during construction works at the lower school extension.
- 6.2 Trenches were positioned to provide an adequate representative sample of all areas where archaeological remains are potentially threatened so as to allow them to be studied, with attention given to features and remains of all periods (inclusive of evidence of past environments).
- 6.3 The aims and objectives of the evaluation as set out in the Written Scheme of Investigation (Brown 2011) were:
- To further understand and interpret the nature of prehistoric activity in the vicinity of the subject site. Excavations within the vicinity of the site indicate Mesolithic activity within the marshland and Neolithic exploitation of the margin between marshland and the gravel terrace. Bronze Age remains are particularly notable in the vicinity of the site especially the presence of trackways which indicates that there must have been occupation on the gravel terraces or their margins and associated exploitation of the flora and fauna of the marsh.
 - To determine whether there is evidence for Roman activity at the site despite its absence from the archaeological record within the areas considered in the recent DBA.
 - To determine whether the marshland was occupied and exploited throughout the medieval era. The site's proximity to Barking Abbey may have raised its potential from that of the majority of the marshlands.
 - To determine the extent, condition, nature, character, quality and date of any other archaeological remains present; and
 - To inform the strategy for any further mitigation.
- 6.4 The trenches were excavated with a mechanical excavator fitted with a flat-bladed ditching bucket in spits of between 100mm and 200mm, under the supervision of an archaeologist.

- 6.5 Within Trenches 2 and 3 the depth of the deposits and the influx of ground water made it impossible to reduce the base level of the trench to reveal the terrace gravel horizon, therefore a probe was used to try and establish the depths of the overlying deposits and the level of the top of the underlying gravels.
- 6.6 All deposits were recorded on *pro forma* context sheets. Plans were drawn at a scale of 1:20 and sections at 1:10 and 1:20. A photographic record was also kept of all the trenches in black and white and colour slide and digital format. Bulk and column samples were taken from relevant contexts. Artefacts encountered in features and horizons were collected.
- 6.7 Temporary benchmarks, established by a PCA surveyor using GPS, were used for levelling within the trenches. These benchmarks were at heights of 2.48m OD, 2.52m OD, and 2.65m OD.

7 TRENCH SUMMARY

7.1 Trench 1 (Figures 3 & 4)

Phase 1

7.1.1 The earliest deposit encountered within Trench 1 was a firm horizon of mid bluish-grey gravels [8]. This was encountered from -0.19m OD and formed the basal limit of excavation. These gravels were sealed by a stiff layer of light greyish-brown clay [7], which was 0.27m thick and recorded from 0.79m OD. This in turn was overlain by a further layer of firm clay [6] that was light bluish-grey, 0.34m thick, and encountered from 1.06m OD.

Phase 2

7.1.2 A sequence of 19th-20th century landfill deposits overlay the natural deposits in the trench. The earliest of these was composed of loose to firm mid brownish-grey silty-clay [5] and included frequent pottery, glass, CBM, was 0.88m thick and encountered from 1.89m OD. This was overlain by a layer of firm greyish-black silty-clay [4] with frequent charcoal that was 0.08m thick, and encountered from 1.91m OD. A further 0.19m thick landfill deposit of firm dark greyish-black silty-clay [3] overlay this from 1.93m OD.

7.1.3 The landfill layers were sealed by a firm layer of made ground [2] that was composed of mid greyish-brown silty-clay with frequent rubble inclusions. This was 0.58m thick and encountered from 2.54m OD. Above this and sealing the trench was the 0.18m thick layer of loose mid greyish-brown sandy-silt [1] that formed the existent topsoil of the trench's location from 2.67m OD.

7.2 Trench 2 (Figures 3 & 4)

Phase 1

7.2.1 The earliest deposit encountered within this trench was a firmly compacted dark reddish-brown layer of silty-peat [12]. This contained frequent organic remains, was 0.45m thick, and encountered from -0.09m OD. Probing work undertaken in the base of this trench to try and establish the depth of the terrace deposits reached -1.23m OD (the limit of what could be achieved), however this appeared to still within an underlying alluvial horizon.

7.2.2 The peat deposit at the base of the trench was overlain by a firm layer of mottled bluish-yellow clay [11]. This was 1.25m thick and was encountered from 0.89m OD.

Phase 2

7.2.3 These natural deposits were overlain by a layer of 19th-20th century made ground [10]. This was composed of loose mid greyish-brown sandy-silt, contained frequent glass shards, red and yellow brick pieces, and concrete fragments, and occasional charcoal flecks, and was encountered from 2.12m OD, being 1.25m thick. This was then covered by another layer composed of loose yellow and red brick crush [9] with occasional pieces of glass and slate, which was 0.26m thick and encountered at 2.54m OD. The trench was then sealed by the modern tarmac layer [+] that formed the surface area of the location from 2.64m OD.

7.3 Trench 3 (Figures 3 & 4)

Phase 1

7.3.1 The earliest deposit observed in this trench was an alluvial clay layer [18]. This was firm and light greenish-grey in colour, and encountered from -0.22m OD. Probing in this trench established that this deposit had a depth of 0.98m, giving a height for the underlying terrace gravels of -1.20m OD.

7.3.2 Overlying the basal alluvial clay was a layer of firmly compacted dark reddish-brown peat [17]. This was 0.30m thick and recorded from 0.10m OD. This was covered by a further horizon of alluvial clay [16], which was firmly compacted, mid greyish-blue, 0.69m thick, and encountered from 0.77m OD.

Phase 2

7.3.3 The sequence of natural deposits was sealed by layers of 19th-20th century made ground. The earliest of these [15] was composed of firmly compacted mid greyish-brown silty-sand, with frequent brick pieces and demolition rubble inclusions. This was 0.69m thick and observed from 1.45m OD. Above this was a layer of loose to compact demolition material [14] with red and yellow bricks, glass and occasional charcoal, which was 0.87m thick and encountered from 2.32m OD. Above this lay the final layer of made ground [13] that was composed of compact reddish-yellow crushed brick and mortar, mixed with silty-sand which was 0.22m thick and seen from 2.53m OD. The trench was sealed by the tarmac [+] that formed the existent surface area of the trench's location, from a height of 2.60m OD.

8 THE ARCHAEOLOGICAL SEQUENCE

8.1 Phase 1: Natural

- 8.1.1 The natural deposits across the evaluated area of the study site were comprised of terrace gravels that were overlain by a sequence of alluvial clay deposits. In the southern area of the site, in Trenches 2 and 3, an additional layer of peat was observed within the alluvial sequence.
- 8.1.2 Bulk and column samples were taken of the alluvial and peat sequences within Trenches 2 and 3 upon which an environmental assessment undertaken (see Appendix 4). The results of this work concluded that the peat deposits most likely represent the same formation of fen or fen carr peat in a floodplain depression or hollow, with a date suggested of the Middle Holocene (i.e. during one or more of the Late Mesolithic, Neolithic or Bronze Age cultural periods), based upon radiocarbon results recorded in this area of the Lower Thames Valley. The alluvial deposits were found to contain plant material typical of a floodplain environment. The combined results from both the alluvial and peat deposits indicate a wetland dominated by alder, birch, bramble and grasses, with hazel and oak which may also have grown on the wetland, but are more likely to have grown on the dryland with lime and heath, forming a local environment of mixed deciduous woodland.

8.2 Phase 2: 19th Century to Modern

- 8.2.1 Made ground deposits dating from the 19th-20th century to the present day were encountered in all of the evaluation trenches. In the two trenches in the southern area of the site, Trenches 2 and 3, this consisted of layer of made ground that predominately demolition rubble in composition. Within Trench 1, in the central area of the site, the majority of the made ground was composed of domestic landfill material dating to 19th-20th century, which was sealed by a layer of made ground.
- 8.2.2 Trenches 2 and 3 were sealed by the existent tarmac yard surface of the area. Trench 1 was sealed by the topsoil that covered the grassed area in which it was located.

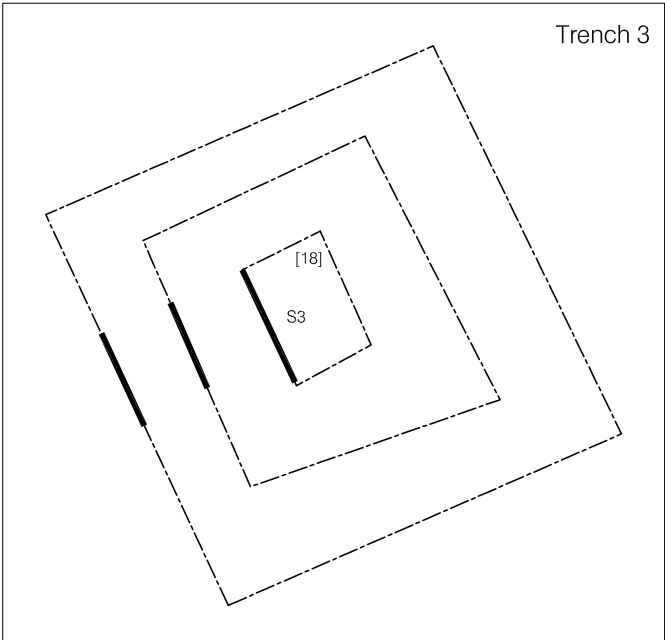
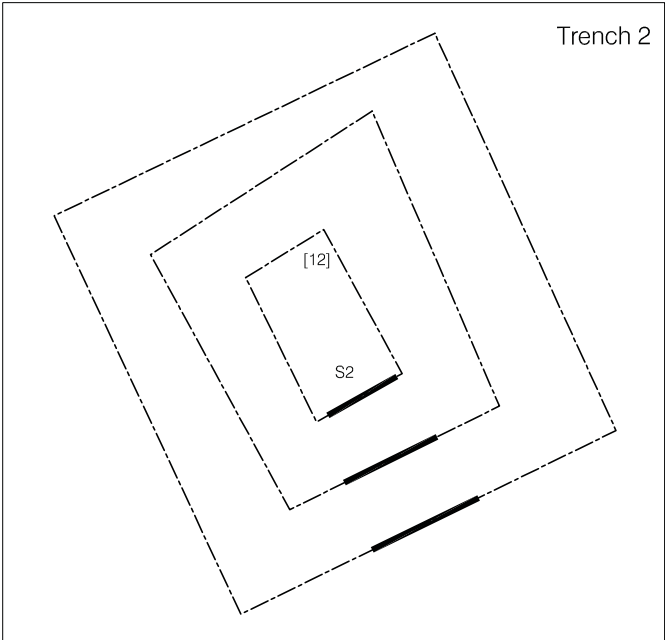
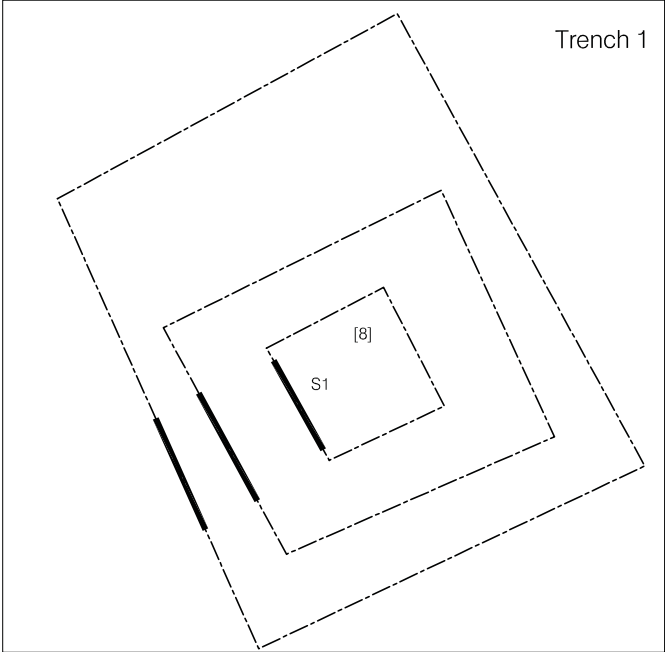
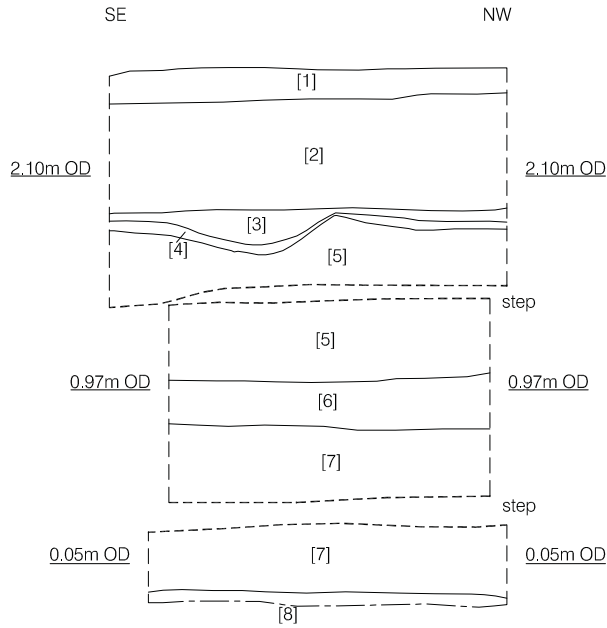
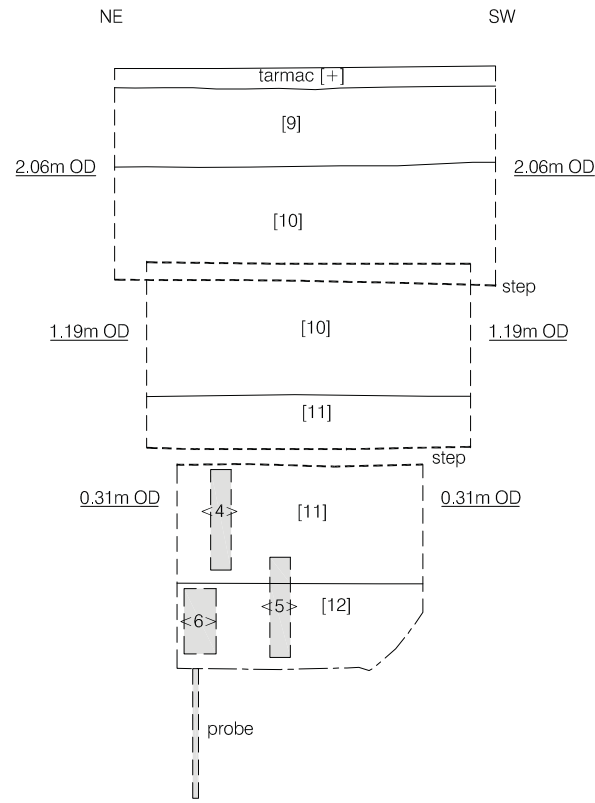


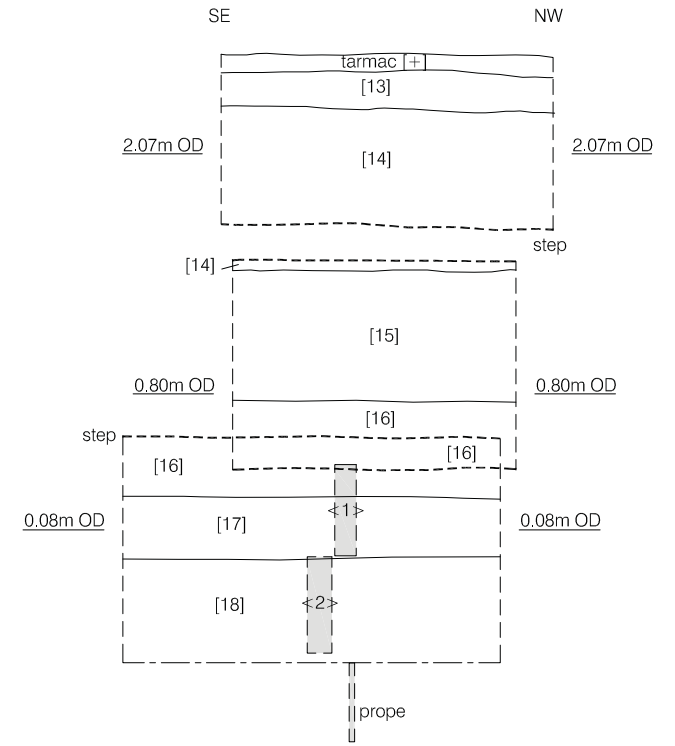
Figure 3
Trenches 1 - 3
1:125 at A4



Section 1
Trench 1
Northeast Facing



Section 2
Trench 2
Northwest Facing



Section 3
Trench 3
Northeast Facing



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Figure 4
Sections 1 - 3
1:40 at A4

9 INTERPRETATION AND CONCLUSIONS

- 9.1 The evaluation was proposed to achieve the following aims and objectives which can now be addressed:
- 9.2 *To further understand and interpret the nature of prehistoric activity in the vicinity of the subject site. Excavations within the vicinity of the site indicate Mesolithic activity within the marshland and Neolithic exploitation of the margin between marshland and the gravel terrace. Bronze Age remains are particularly notable in the vicinity of the site especially the presence of trackways which indicates that there must have been occupation on the gravel terraces or their margins and associated exploitation of the flora and fauna of the marsh.*
- 9.2.1 The peat deposits observed upon the site are likely to date to the Middle Holocene. Environmental evidence indicates that during this period, which covers the Late Mesolithic through to the Bronze Age, the site lay in an area of wetlands, though with some dryland areas, populated by mixed deciduous woodland, with a phase during which fen or fen carr peat was able to form within depressions or hollows upon the floodplain.
- 9.2.2 However, no anthropogenic evidence from any prehistoric period was encountered during the evaluation, therefore this evaluation has been unable to inform further on the prehistoric activity within the area.
- 9.3 *To determine whether there is evidence for Roman activity at the site despite its absence from the archaeological record within the areas considered in the recent DBA.*
- 9.3.1 The evaluation does support the conclusions set out in the DBA, in that Roman activity appears to have been focused away from the study site, with an absence of any Roman evidence seen within the evaluation trenches.
- 9.4 *To determine whether the marshland was occupied and exploited throughout the medieval era. The site's proximity to Barking Abbey may have raised its potential from that of the majority of the marshlands.*
- 9.4.1 No medieval evidence was encountered during the archaeological work. This goes to suggest that the evaluated areas remained within un-utilised marshland that was not subject to any land management or drainage efforts during this period.
- 9.5 *To determine the extent, condition, nature, character, quality and date of any other archaeological remains present.*

- 9.5.1 No anthropogenic evidence of archaeological interest was encountered from any period. This indicates that the site remained un-exploited wetland environment, associated with the River Roding, into the post-medieval period, when the site is shown cartographically to be within the East Ham Levels. A period of 19th to 20th century land-raising is reflected in the presence of made ground and landfill deposits, and the site remained undeveloped until the construction of the Langdon School in the 1950s.
- 9.5.2 The environmental evidence from the site was able to suggest that the former environs of the site was a wetland dominated by alder, birch, bramble and grasses, with also a likely dryland region supporting hazel, oak, lime and heath, forming a mixed deciduous woodland. The peat horizons observed likely represent a single formation of fen or fen carr peat in a floodplain depression or hollow, most probably dating to the Middle Holocene.
- 9.6 *To inform the strategy for any further mitigation.*
- 9.6.1 The results of the evaluation suggests that the true potential for all periods upon the study site may be lower than originally suggested by the DBA, though the potential for palaeo-environmental evidence can be concluded to be high due to the presence of peat horizons. There is still however a possibility that archaeological remains may be present within the stratigraphy of the site, such as trackways or other evidence associated with the exploitation of the former marshland.
- 9.6.2 Additionally, the environmental assessment revealed that archaeobotanical remains are generally well preserved in the organic sediments from the sequence from Trench 3. From this it has been recommended that further environmental archaeological analysis take place, including radiocarbon dating, pollen and plant macrofossils, and a detailed assessment of the diatom assemblages.

10 ACKNOWLEDGMENTS

- 10.1 Pre-Construct Archaeology Ltd would like to thank Laing O'Rourke for commissioning the work, with particular thanks to Andy Strathdee for his help. We also thank Dr Jane Sidell for monitoring the work on behalf of the London Borough of Newham.
- 10.2 The author would like to thank Gary Brown for his project management, Jenny Simonson for the illustrations, Chris Jarrett for the find analysis, the staff of QUEST for the environmental assessment, and Sophie White for logistics. Thanks are also extended to Mike Bazley, Oliver Brown, and John Joyce for their on-site work and assistance.

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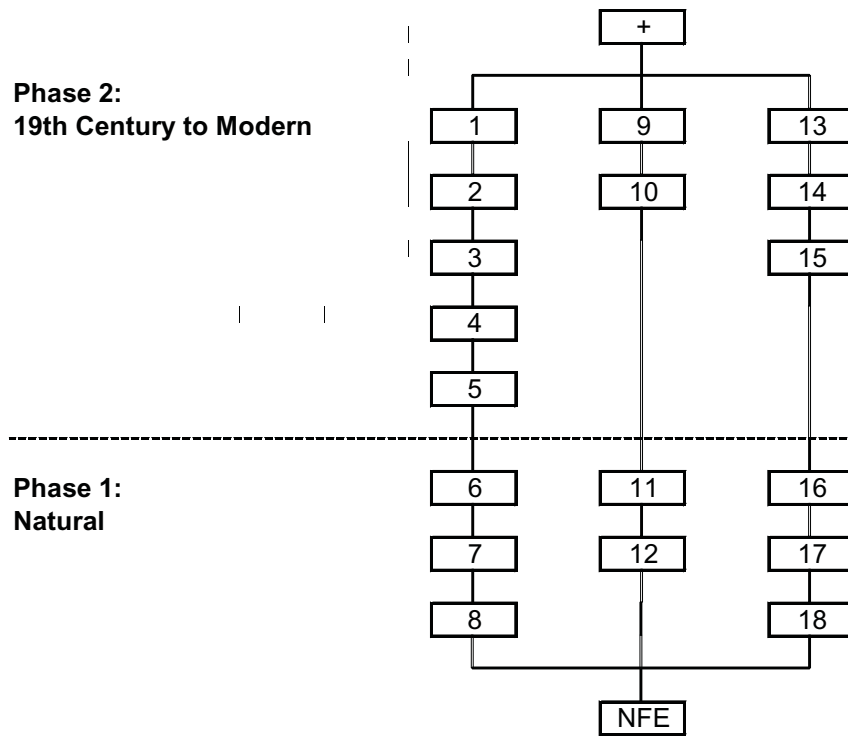
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APPENDIX 1: CONTEXT INDEX

Context No.	Trench	Plan	Section / Elevation	Type	Description	Date	Phase
1	1	-	1	Layer	Existent Topsoil	Modern	2
2	1	-	1	Layer	Made Ground	19th-20th Century	2
3	1	-	1	Layer	Land Fill	19th-20th Century	2
4	1	-	1	Layer	Land Fill	19th-20th Century	2
5	1	-	1	Layer	Land Fill	19th-20th Century	2
6	1	-	1	Natural	Alluvial Clay	Unknown	1
7	1	Tr 1	1	Natural	Alluvial Clay	Unknown	1
8	1	Tr 1	1	Natural	Terrace Gravels	Unknown	1
9	2	-	2	Layer	Made Ground	19th-20th Century	2
10	2	-	2	Layer	Made Ground	19th-20th Century	2
11	2	-	2	Natural	Alluvial Clay	Unknown	1
12	2	Tr 2	2	Natural	Peat Horizon	Middle Holocene	1
13	3	-	3	Layer	Made Ground - Crushed	19th-20th Century	2
14	3	-	3	Layer	Made Ground - Demolition	19th-20th Century	2
15	3	-	3	Layer	Made Ground	19th-20th Century	2
16	3	-	3	Natural	Alluvial Clay	Unknown	1
17	3	Tr 3	3	Natural	Peat Horizon	Middle Holocene	1
18	3	Tr 3	3	Natural	Alluvial Clay	Unknown	1

APPENDIX 2: SITE MATRIX



APPENDIX 3: FINDS REPORT

Glass Assessment

Chris Jarrett

Introduction

A small sized assemblage of glass was collected from the site (1 box). There are eight intact bottles in a very good condition, some surviving with their stoppers and all were recovered from two land fill deposits. Therefore the glass items indicate they were from an offsite source and dumped as a result of local authority refuse collection. All the glass vessels date to the late 19th or 20th century. All the glass (and none is unstratified) was recorded in an ACCESS 2007 database, by glass colour, form, decoration, shard count and estimated number of vessels. The glass is discussed by its vessel types and distribution.

The Vessel Types

Only two forms are present as bottles and jars.

Bottles

Sauce bottle: colourless, soda-lime glass, with an external screw fitting rim finish, a deep neck, panelled sides and recessed base. Late 19th-20th century. Context [5].

Club sauce bottle: colourless, soda-lime glass with an external screw fitting rim finish above a deep, squared cordon and a deep neck, rounded shoulder and cylindrical body. Made in a two piece mould. Late 19th-20th century. Context [5].

Flat bottle: colourless, soda-lime glass, cordoned rim finish, octagonal in plan and embossed on the base '4'. Made in a two piece mould. Composite stopper made of rubber and cork. Late 19th-20th century. Context [5].

Oval poison bottle in pale blue soda-lime glass. Collared rim finish and short neck, the body is ribbed and on the front is embossed 'POISONOUS' on the shoulder and vertically 'NOT TO BE TAKEN', recessed base. Made in a two piece mould. Cork stopper. Late 19th-20th century. Context [3].

Oval bottle, clear soda-lime glass, short collared rim and neck. In plan the vessel is cylindrical with two rounded apexes on each side and a recessed base. The bottle has a heavily decomposed paper label with 'E & Q' still legible. Composite moulded lead alloy and cork sprinkler-type stopper. Late 19th-20th century, Context [5].

Jars

Three potted meat paste pots of different sizes and shapes in clear soda-lime glass and probably all for Shippam's products. The smallest is conical in shape with a collared rim finish, fluted body with an oval panel and a splayed base. The two other jars are of a small and medium size with collared rim finishes, a ridged top and grooved side and fluted body with an oval panel, but on the back is embossed diagonally 'SHIPPAM'S' in relief. Both jars have recessed bases and the smallest has embossed '653 358 RC No 6' and the largest '1750 POUNDED 26'. 20th century in date and all from context [3].

Distribution

The distribution of the glass is shown in Table 1:

Context	Trench	Phase	No. of vessels	Date
[3]	1	2	4	20 th century
[5]	1	2	4	Late 19 th -20 th century

Table 1. LAN11. Distribution of the glass showing the context, trench, phase, the number of vessels present and a deposition date.

The Significance And Potential Of The Assemblage And Recommendations For Further Work

The glass has no significance at a local, national or international level. The assemblage was derived from an offsite source and so do not relate to activities within the excavation area except to demonstrate the dumping of refuse. The glass forms are typical for reflecting late 19th and 20th-century consumer culture in London. The only potential of the glass is to date the contexts it was recovered from. There are no recommendations for further work.

APPENDIX 4: LANGDON SCHOOL, SUSSEX ROAD, LONDON BOROUGH OF NEWHAM E6 2PS (SITE CODE: LAN11): ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

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INTRODUCTION

This report summarises the findings arising out of the environmental archaeological assessment undertaken by Quaternary Scientific (QUEST) in connection with the proposed development at Langdon School, Sussex Road, East Ham (Site Code: LAN11). Excavations at the site by Pre-Construct Archaeology (PCA) Ltd. revealed a sequence of alluvial and peat deposits that overlay natural gravels, sealed by 19th-20th made ground deposits (Barrowman, 2011). An environmental archaeological assessment was carried out in order to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, the environmental archaeological assessment consisted of the following techniques:

1. Recording the lithostratigraphy of the column samples to provide a preliminary reconstruction of the sedimentary history of the site
2. Assessment of the preservation and concentration of pollen grains and spores to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities e.g. woodland clearance and cultivation
3. Assessment of the preservation and concentration of diatom frustules to identify their potential to provide a preliminary reconstruction of the hydrological history e.g. water quality and depth
4. Assessment of the preservation and concentration of macroscopic plant, insect and Mollusca remains from bulk samples to provide a preliminary reconstruction of the vegetation history and general environmental context of the site.

METHODS

Lithostratigraphic descriptions

The lithostratigraphy of the column samples was described in the laboratory using standard

procedures for recording unconsolidated sediment and organic sediments, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts) (Troels-Smith, 1955). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel (*Grana glareosa*; Gg), fine sand (*Grana arenosa*; Ga), silt (*Argilla granosa*; Ag) and clay (*Argilla steatoides*); (4) recording the degree of peat humification and (5) recording the unit boundaries e.g. sharp or diffuse. The results of the descriptions are presented in Tables 1 to 4.

Pollen assessment

Six sub-samples (three from column <1>, one from column <4> and two from column <5> were extracted for an assessment of pollen content. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) adding two tablets of the exotic clubmoss *Lycopodium clavatum* to provide a measure of pollen concentration in each sample; (3) deflocculation of the sample in 1% Sodium pyrophosphate; (4) sieving of the sample to remove coarse mineral and organic fractions (>125 μ); (5) acetolysis; (6) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm³); (7) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the University of Reading pollen type collection and the following sources of keys and photographs: Moore *et al.* (1991); Reille (1992). The assessment procedure consisted of scanning the prepared slides, and recording the concentration and preservation of pollen grains and spores, and the principal taxa on four transects (10% of the slide) (Table 5).

Diatom assessment

Four sub-samples (one from each column sample) were extracted for the assessment of diatoms. The diatom extraction involved the following procedures (Battarbee *et al.*, 2001):

1. Treatment of the sub-sample (0.2g) with Hydrogen peroxide (30%) to remove organic material and Hydrochloric acid (50%) to remove remaining carbonates
2. Centrifuging the sub-sample at 1200 for 5 minutes and washing with distilled water (4 washes)

3. Removal of clay from the sub-samples in the last wash by adding a few drops of Ammonia (1%)
4. Two slides prepared, each of a different concentration of the cleaned solution, were fixed in mounting medium of suitable refractive index for diatoms (Naphrax)

Duplicate slides each having two coverslips were made from each sample and fixed in Naphrax for diatom microscopy. The coverslip with the most suitable concentration of the sample preparation was selected for diatom evaluation. A large area of this coverslip was scanned for diatoms at magnifications of x400 and x1000 under phase contrast illumination using a Leica microscope. The results of the diatom assessment are displayed in Table 6.

Macrofossil assessment

Two bulk samples were processed for the recovery of macrofossil remains including waterlogged plant macrofossils, waterlogged wood, insects and Mollusca. The extraction process involved the following procedures: (1) measuring the sample volume by water displacement and (2) processing the sample by wet sieving using 300µm and 1mm mesh sizes. Each sample was scanned under a stereozoom microscope at x7-45 magnifications, and sorted into the different macrofossil classes. The concentration and preservation of remains was estimated for each class of macrofossil (Table 7).

Preliminary identifications of the waterlogged seeds have been made using modern comparative material and reference atlases (e.g. Cappers *et al.* 2006). Nomenclature used follows Stace (2005). The quantities of waterlogged seeds and wood were recorded for each sample, with identifications of the main seed taxa (Table 8). The concentration and state of preservation of the zooarchaeological remains (insects and Mollusca) were made under a low powered stereo-microscope and each noted in Table 7.

RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS

Column samples <1> and <2> form a sequence in Trench 3 through (at the base) ca. 50cm of bluey grey silty clay alluvium with common detrital part material (context (18)), overlain by ca. 26cm of silty peat (context (17)). A sharp contact separates this from a grey silty clay with common detrital plant material (context (16)), similar in texture to the alluvium in context (18).

Column samples <4> and <5> form a sequence in Trench 2 through (at the base) silty clay

alluvium with common detrital plant material (context (12)), overlain by ca. 10cm of peat with traces of silt, forming the lower part of context (11). This is overlain by orangey grey silty clay alluvium (context (11)).

Given the similarity of the OD heights of the organic units in both sequences it is likely that they represent the same formation of fen or fen carr peat in a floodplain depression or hollow, while the mineral rich nature of the peat indicates that frequent influxes of mineral sediment occurred during their formation. The organic units are underlain and overlain by fine grained sediments containing common detrital plant material typical of a floodplain environment.

Table 1: Lithostratigraphic description of column <1>, Trench 3, Langdon School, Sussex Road, London Borough of Newham

Depth (m from top of column)	Context	Description
0.00 to 0.24	(16)	Ag2 As2 Sh+ Dh+; bluey grey silty clay with traces of disintegrated organic matter and detrital herbaceous material. Sharp contact in to:
0.24 to 0.50	(17)	Sh3 Ag1 Th+ Tl+; black silty peat with traces of herbaceous material and wood

Table 2: Lithostratigraphic description of column <2>, Trench 3, Langdon School, Sussex Road, London Borough of Newham

Depth (m from top of column)	Context	Description
0.00 to 0.50	(18)	As2 Ag2 Dl+ Sh+ Dh+; bluey grey silty clay with traces of detrital wood, detrital herbaceous material and disintegrated organic matter.

Table 3: Lithostratigraphic description of column <4>, Trench 2, Langdon School, Sussex Road, London Borough of Newham

Depth (m from top of column)	Context	Description
0.00 to 0.50	(11)	As3 Ag1; orangey grey silty clay; colour changes to dark grey

		at 0.40
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Table 4: Lithostratigraphic description of column <5>, Trench 2, Langdon School, Sussex Road, London Borough of Newham

Depth (m from top of column)	Context	Description
0.00 to 0.10	(11)	Sh4 Ag+ Tl+; black peat with traces of silt and wood. Diffuse contact into:
0.10 to 0.50	(12)	As2 Ag2 Sh+ Dl+; dark grey silty clay with traces of disintegrated organic matter and detrital wood.

RESULTS AND INTERPRETATION OF THE POLLEN ASSESSMENT

Six sub-samples (three from column <1>, one from column <4> and two from column <5>) were extracted for an assessment of pollen content. The results are displayed in Table 5.

The results of the pollen assessment indicate that pollen was preserved in moderate to high concentrations through column <1> (context (17)). The assemblage in these samples is dominated by tree and shrub taxa including *Alnus* (alder), *Tilia* (lime) and *Corylus* type (e.g. hazel) and the herbaceous taxon Poaceae (grass family). This assemblage is indicative of a dryland dominated by lime. Alder dominated the wetland, probably with an understorey of hazel and grasses.

Pollen was preserved in very low quantities in context (11) in samples <4> and <5>; it is thus not possible to construct an environmental interpretation from this assemblage.

Pollen was preserved in high concentrations in context (12) (sample <5>). The assemblage was dominated by *Alnus* (alder), with other tree and shrub taxa including *Quercus* (oak), *Betula* (birch), *Corylus* type (e.g. hazel) and *Erica* spp. (heath). The herbaceous taxon Poaceae (grass family) was also present. This assemblage is indicative of a mixed deciduous woodland on the dryland surface that included oak. Alder dominated the wetland, while birch, hazel and heath may have been growing on both the dryland and on the wetland with an understorey of herbs including grasses.

Table 5: Results of the pollen assessment of columns <1>, <4> and <5>, Langdon School, Sussex Road, London Borough of Newham

Column sample	Context number	Depth (m from top of column)		Main pollen taxa			Concentration 0 - 5	Preservation 0- 5	Microcharcoal 0 - 5
		From	To	Latin name	Common name	Number			
<1>	(17)	0.24	0.25	<i>Alnus</i>	alder	9	5	4	0
				<i>Corylus</i> type	e.g. hazel	4			
				Poaceae	grass family	3			
				<i>Lycopodium clavatum</i>	clubmoss spike	18			
<1>	(17)	0.32	0.33	<i>Tilia</i>	lime	2	4	4	1
				cf. <i>Alnus</i>	cf. alder	1			
				Poaceae	grass family	10			
				<i>Lycopodium clavatum</i>	clubmoss spike	19			
<1>	(17)	0.40	0.41	<i>Tilia</i>	lime	2	2	3	1
				<i>Alnus</i>	alder	1			
				Poaceae	grass family	2			
				<i>Lycopodium clavatum</i>	clubmoss spike	12			
<4>	(11)	0.24	0.25	Lactuceae	dandelion family	1	1	3	2
				Poaceae	grass family	1			
				<i>Lycopodium clavatum</i>	clubmoss spike	23			
<5>	(11)	0.08	0.09	cf. <i>Alnus</i>	cf. alder	1	1	2	0
				cf. Poaceae	cf. grass family	1			
				<i>Lycopodium clavatum</i>	clubmoss spike	1			
<5>	(12)	0.24	0.25	<i>Alnus</i>	alder	12	5	4	1

				<i>Quercus</i>	oak	3			
				<i>Betula</i>	birch	1			
				<i>Corylus</i> type	e.g. hazel	2			
				<i>Erica</i> spp.	heath	1			
				Poaceae	grass family	2			
				<i>Lycopodium clavatum</i>	clubmoss spike	10			

Key: Concentration: 0 = 0 grains; 1 = 1-75 grains, 2 = 76-150 grains, 3 = 151-225 grains, 4 = 226-300, 5 = 300+ grains per slide

Preservation: 0 = none, 1 = very poor, 2 = poor, 3 = moderate, 4 = good, 5 = excellent

Charcoal: 0 = none, 1 = negligible, 2 = occasional, 3 = moderate, 4 = frequent, 5 = abundant

RESULTS AND INTERPRETATION OF THE DIATOM ASSESSMENT

Four sub-samples were taken from the column samples for the assessment of diatoms. The results are displayed in Table 6.

Diatoms were present in two of the samples (contexts (12) and (16) in low to moderate concentrations. Diatoms were not present in the samples from contexts (18) or (11). In general, the diatom assemblages that were present were poorly preserved, and diversity in the assemblage was low.

Table 6: Results of the diatom assessment of columns <1>, <2>, <4> and <5>, Langdon School, Sussex Road, London Borough of Newham

Column sample	Context number	Depth (m from top of column)		Diatom concentration	Quality of preservation	Diversity
		From	To			
<1>	(16)	0.20	0.21	2	1	1
<2>	(18)	0.24	0.25	0	0	0
<4>	(11)	0.24	0.25	0	0	0
<5>	(12)	0.24	0.25	1	1	1

Key: Concentration = 0 (none) to 5 (high); Preservation = 0 (none) to 5 (good); diversity = 0 (none) to 5 (high)

RESULTS AND INTERPRETATION OF THE MACROFOSSIL ASSESSMENT

Two bulk samples (sample <3> (context (16)) and <6> (context (12))) were processed for the recovery of macrofossil remains including waterlogged plant macrofossils, waterlogged wood, insects and Mollusca (Table 7).

The results of an initial assessment indicated that neither sample contained Mollusca, bone, insects, magnetic particles or artefacts. Sample <6> (context (12)) contained charcoal 2-4mm in diameter. Both samples contained moderate to high quantities of waterlogged wood and waterlogged seeds.

Table 7: Results of the macrofossil assessment of the bulk samples, Langdon School, Sussex Road, London Borough of Newham

Sample number	Context number	Volume sampled (l)	Volume processed (l)	Volume remaining	Fraction (e.g. flot, residue, >300µm)	Charred					Waterlogged		Mollusca		Bone			Insects	Magnetic particles	Artefacts	
						Charcoal (>4mm)	Charcoal (2-4mm)	Charcoal (<2mm)	Seeds	Chaff	Wood	Seeds	Whole	Fragments	Large	Small	Fragments				
<3>	(17)	20.0	1.0	19.0	>1mm	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-
					>300µm	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
<6>	(12)	20.0	1.0	19.0	>1mm	-	1	-	-	-	4	3	-	-	-	-	-	-	-	-	-
					>300µm	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-

Key: 0 = Estimated Minimum Number of Specimens (MNS) = 0; 1 = 1 to 25; 2 = 26 to 50; 3 = 51 to 75; 4 = 76 to 100; 5 = 101+

RESULTS OF THE WATERLOGGED PLANT MACROFOSSIL ASSESSMENT (SEEDS)

The results of the macrofossil rapid assessment indicated that waterlogged plant macrofossils (seeds) were present in both samples (Table 7), and thus these underwent a more detailed assessment. The results of the waterlogged plant macrofossil (seeds) assessment are displayed in Table 8.

In sample <3> (context 17) the assemblage was dominated by tree taxa including *Alnus glutinosa* (alder) and *Betula* sp. (birch). Herbaceous taxa were present in the form of *Ranunculus* sp. (e.g. creeping buttercup). This assemblage is indicative of an alder carr environment dominated by alder and birch, with a herbaceous understorey including creeping buttercup.

The assemblage in sample <6> (context 12) is dominated by the shrub *Rubus* sp. (e.g. bramble), with *Alnus glutinosa* (alder) also common. Herbaceous taxa included *Ranunculus* sp. (e.g. creeping buttercup) and *Polygonum* sp. (knotweed/smartweed). This assemblage is indicative of an alder carr environment dominated by bramble and alder, with a herbaceous understorey including creeping buttercup and knotweed or smartweed.

Table 8: Results of the waterlogged macrofossil (seeds) assessment, Langdon School, Sussex Road, London Borough of Newham

Sample number	Context number	Main taxa	Common name	Number
<3>	(17)	<i>Alnus glutinosa</i> catkin	alder	9
		<i>Alnus glutinosa</i> fruit	alder	1
		<i>Betula</i> sp.	birch	4
		<i>Ranunculus</i> sp.	e.g. creeping buttercup	1
<6>	(12)	<i>Alnus glutinosa</i> catkin	alder	4
		<i>Rubus</i> sp.	e.g. bramble	27
		<i>Ranunculus</i> sp.	e.g. creeping buttercup	1
		<i>Polygonum</i> sp.	knotweed/smartweed	1

DISCUSSION AND CONCLUSIONS

The aim of the environmental archaeological assessment was to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs, and specifically to: (1) identify evidence of change or continuity through time and (2) to detect evidence of human activity. An assessment of four column samples and two bulk samples was carried out.

The results of the lithostratigraphic descriptions indicate that the organic sediments within the sequences from Trenches 2 and 3 most likely represent the same formation of fen or fen carr peat in a floodplain depression or hollow. The organic units are underlain and overlain by fine grained sediments containing common detrital plant material typical of a floodplain environment. As a result of radiocarbon dating elsewhere in this area of the Lower Thames Valley, it is likely that the peat horizon dates to the Middle Holocene (i.e. during one or more of the Late Mesolithic, Neolithic or Bronze Age cultural periods).

The results of the archaeobotanical assessment indicate that pollen was generally well preserved within contexts (17) and (12), but poorly preserved within context (11). Waterlogged plant macrofossils were recorded in contexts (12) and (16). Combined the assemblage indicates a wetland dominated by alder, birch, bramble and grasses. Hazel and oak may also have grown on the wetland, but are more likely to have grown on the dryland with lime and heath, forming a mixed deciduous woodland.

Diatoms were present in two of the samples (contexts (12) and (16) in low to moderate concentrations, but were not present in the samples from contexts (18) or (11). In general, the diatom assemblages that were present were poorly preserved, and diversity in the assemblage was low.

RECOMMENDATIONS

The results of the environmental archaeological assessment have revealed that archaeobotanical (pollen, wood and waterlogged seeds) remains are generally well preserved in the organic sediments from the sequence from Trench 3, and thus further environmental archaeological analysis including radiocarbon dating, pollen and plant macrofossils is recommended. A detailed assessment of the diatom assemblages is also recommended.

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APPENDIX 5: OASIS REPORT FORM

OASIS ID: preconst1-97825

Project details

Project name	An Archaeological Evaluation at Langdon School, Sussex Road, London Borough of Newham
Short description of the project	An archaeological evaluation was undertaken by Pre-Construct Archaeology Ltd at the Langdon School between the 18th and 25th of February 2011. Three trenches were excavated and revealed a sequence of terrace gravel deposits overlain by an alluvial clay sequence, with an additional layer of a peat observed within this sequence in the two trenches in the south of the site. The alluvium was sealed by 19th to 20th century made ground and landfill deposits. No archaeological features were encountered.
Project dates	Start: 19-02-2011 End: 25-02-2011
Previous/future work	No / Not known
Any associated project reference codes	LAN 11 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Other 15 - Other
Monument type	PEAT Late Prehistoric
Significant Finds	NONE None
Methods & techniques	'Environmental Sampling','Test Pits'
Development type	Public building (e.g. school, church, hospital, medical centre, law courts etc.)
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	GREATER LONDON NEWHAM EAST HAM Langdon School
Postcode	E6 2PS
Study area	6.89 Hectares

Site coordinates TQ 4358 8350 51.5316240912 0.07023111853280 51 31 53 N
000 04 12 E Point

Height OD / Depth Min: -1.23m Max: -0.19m

Project creators

Name of Organisation Pre-Construct Archaeology Ltd

Project brief originator Pre-Construct Archaeology Ltd

Project design originator Gary Brown

Project director/manager Gary Brown

Project supervisor Sarah Barrowman

Type of sponsor/funding body Developer

Name of sponsor/funding body Laing O'Rourke

Project archives

Physical Archive recipient LAARC

Physical Archive ID LAN 11

Physical Contents 'Glass'

Digital Archive recipient LAARC

Digital Archive ID LAN 11

Digital Contents 'Survey'

Digital Media available 'Images raster / digital photography','Text'

Paper Archive recipient LAARC

Paper Archive ID LAN 11

Paper Contents 'none'

Paper Media available 'Context sheet','Map','Photograph','Plan','Report','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation at Langdon School, Sussex Road, London Borough of Newham, E6 2PS
Author(s)/Editor(s)	Barrowman, S.
Date	2011
Issuer or publisher	Pre-Construct Archaeology Ltd
Place of issue or publication	London
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Entered by	Sarah Barrowman (sbarrowman@pre-construct.com)
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