THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

R.B.K.C. TOWN PLANNING
APPLICATION
COMPLETE
11 NOV 2008

The Royal Borough of Kensington and Chelsea
Department of Planning and Borough Development
The Town Hall, Hornton Street
London W8 7NX

Website: www.rbkc.gov.uk/planning
E-mail: planning@rbkc.gov.uk
Tel Planningline: 020 7361 3012

£85.00
C/N
203703

Application for approval of details reserved by condition.

Town and Country Planning Act 1990

Planning (Listed Buildings and Conservation Areas) Act 1990

Exa	HDC	HSS	RPD	Pol	Des	ARB	Rec
Reg	PIO	11 NOV 2008				RBKC Planning	APP
DC	DC	DC					
Ref	CLE	Sup	Obj	Supp	Obj	Cond	PDA

Publication of planning applications on council websites

Please note that with the exception of applicant contact details and Certificates of Ownership, the information provided on this application form and in supporting documents may be published on the council's website.

If you have provided any other information as part of your application which falls within the definition of personal data under the Data Protection Act which you do not wish to be published on the council's website, please contact the council's planning department.

Please complete using block capitals and black ink.
It is important that you read the accompanying guidance notes as incorrect completion will delay the processing of your application.

1. Applicant Name and Address

Title:		First name:			
Last name:					
Company (optional):	CIRCADIAN LTD				
Unit:		House number:		House suffix:	
House name:					
Address 1:					
Address 2:					
Address 3:					
Town:					
County:					
Country:					
Postcode:					

2. Agent Name and Address

Title:		First name:			
Last name:					
Company (optional):	DP9				
Unit:		House number:	100	House suffix:	
House name:					
Address 1:	PALL MALL				
Address 2:					
Address 3:					
Town:	LONDON				
County:					
Country:					
Postcode:	SW1Y 5NQ				

3. Site Address Details

Please provide the full postal address of the application site.

Unit: | House number: | House suffix:

House name:

Address 1:

Address 2:

Address 3:

Town:

County:

Postcode (optional):

Description of location or a grid reference.
(must be completed if postcode is not known):

Easting: | Northing:

Description:

LOTS ROAD POWER STATION, LOTS ROAD, LONDON

4. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application? ☐ Yes ☑ No

If Yes, please complete the following information about the advice you were given. (This will help the authority to deal with this application more efficiently).

Please tick if the full contact details are not known, and then complete as much as possible: ☐

Officer name:

Reference:

Date (DD/MM/YYYY):
(must be pre-application submission)

Details of pre-application advice received?

5. Description Of Your Proposal

Please provide a description of the approved development as shown on the decision letter, including the application reference number and date of decision in the sections below:

REFER TO COVERING LETTER

Reference number: PP/02/01324 Date of decision: 30.01.2006 (Date must be pre-application submission) (DD/MM/YYYY)

Please state the condition number(s) to which this application relates:

1.	25	6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

Has the development already started? ☐ Yes ☑ No

If Yes, please state when the development started (DD/MM/YYYY): (date must be pre-application submission)

Has the development been completed? ☐ Yes ☑ No

If Yes, please state when the development was completed (DD/MM/YYYY): (date must be pre-application submission)

6. Discharge Of Condition

Please provide a full description and/or list of the materials/details that are being submitted for approval:

REFER TO COVERING LETTER

7. Part Discharge Of Condition(s)

Are you seeking to discharge only part of a condition? ☑ Yes ☐ No

If Yes, please indicate which part of the condition your application relates to:

ENVIRONMENTAL ARCHAEOLOGICAL INVESTIGATIONS

8. Planning Application Requirements - Checklist

Please read the following checklist to make sure you have sent all the information in support of your proposal. Failure to submit all information required will result in your application being deemed invalid. It will not be considered valid until all information required by the Local Planning Authority has been submitted.

The original and 3 copies of a completed and dated application form: ☑

The original and 3 copies of other plans and drawings or information necessary to describe the subject of the application: ☑

9. Declaration

I/we hereby apply for planning permission/consent as described in this form and the accompanying plans/drawings and additional information.

Signed - Applicant: DP9

Or signed - Agent: DP9

Date (DD/MM/YYYY): 10/11/2008 (date cannot be pre-application)

10. Applicant Contact Details

Telephone numbers

Country code: | National number: | Extension number:

Country code: | Mobile number (optional):

Country code: | Fax number (optional):

Email address (optional):

11. Agent Contact Details

Telephone numbers

Country code: 020 | National number: 7004 1716 | Extension number:

Country code: | Mobile number (optional):

Country code: | Fax number (optional):

Email address (optional):

12. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land? ☐ Yes ☑ No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? *(Please select only one)* ☑ Agent ☐ Applicant ☐ Other (if different from the agent/applicant's details)

If Other has been selected, please provide:

Contact name: | Telephone number:

Email address:

Planning Consultants

10 November 2008

RB Kensington & Chelsea
Planning and Borough Development
The Town Hall
Hornton Street
London
W8 7NX
For the attention of Debrah Silver

100 Pall Mall
London SW1Y 5NQ

telephone 020 7004 1700
facsimile 020 7004 1790

www.dp9.co.uk

Exd	HDC	HSS	HPD	Pol	Des	ARB	Rec
Reg	PIO	11 NOV 2008				RBKC Planning	APP
DC Nth	DC Cen	DC Sth	Obj	Supp	No Obj	Rev	Other
						Cond	PDA

Dear Sirs

LOTS ROAD POWER STATION
Planning Permission Ref. PP/02/01324
Condition 25 – Archaeology

We refer to the partial discharge of the above condition pursuant to the above planning permission granted by your Council in your letter dated 15th February 2008.

The planning permission, granted by the Secretary of State on 30th January 2006 granted permission in RBKC for "demolition of parts of the former Power Station; provision of a total of 420 residential units by means of conversion of power station building to include residential units, retail, business, community, doctor's surgery and restaurants; the erection of a residential tower with ground floor gym; erection of two residential buildings (one to incorporate a nursery and business uses); car parking spaces; cycle parking, servicing and landscaping, and works to Chelsea Creek and Chelsea Basin, including the construction of 3 pedestrian bridges over the creek."

Condition 25 attached to the permission states that,

"No development shall take place until the applicant, or its agent or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the local planning authority".

Our clients, Circadian Ltd, have now completed further archaeological investigations and in order to fully satisfy the remaining element of the condition, we hereby enclose three copies of the following documents:

- Completed Approval of Details Application Form;
- 'Environmental Archaeological Investigations' report prepared by ArchaeoScape.
- A cheque in the sum of £85 made payable to 'RB Kensington & Chelsea' as the appropriate application fee.

We can confirm that a copy of the enclosed report has also been sent to English Heritage.

We look forward to hearing from you, but if you have any queries, please contact Julian Shirley at the above address.

Yours faithfully

DP9
Encs.

DS
10th

ENGLISH HERITAGE

Executive Director of Planning & Conservation,
Royal Borough of Kensington and Chelsea,
The Town Hall,
Hornton Street,
LONDON,
W8 7NX

Our ref: LAG 20/074 P4

Your ref: DCS/DCP/PP/02/01324

Telephone 020 7973 3732
Fax 020 7973 3792

Exd	HDC	HSS	HPD	Pol	Des	ARB	Rec
Reg	PIO	16 DEC 2008				RBKC Planning	APP
DC Nth	DC Cen	DC Sth	Obj	Supp	No Obj	Rev	Other
						Cond	PDA

MA 15/12/08

16th December 2008

For the attention of: Debra Silver

Dear Sir

RE: Lots Road Power Station
Receipt & Approval of Geoarchaeological Report and reminder to applicant to submit Historic Building Recording report

Thank-you for your consultation with regards to the archaeological condition on the above application.

Further to previous correspondence, I have received two copies of a report on the geo-archaeological evaluation undertaken on the above site (Archaeoscape, 2008). I confirm this accords with the previously approved Written Scheme of Investigation and is of a satisfactory standard.

Seven geo-archaeological borehole core samples were taken for further assessment and radiocarbon dating. Alluvial deposits containing peat horizons including evidence of former Bronze Age and Middle Iron Age floodplains were recorded. The geo-archaeologists suggest no further analysis is necessary however it is proposed the results be published as a short article in The London Archaeologist Magazine. On the understanding funding is confirmed for this, I advise no further below-ground archaeological work is necessary.

With regards to the discharge of the archaeological condition, I note the historic building recording report is still to be submitted. Once this is complete and the results assessed/approved, I will contact you again. The archaeological condition should not be fully discharged until all phases of archaeological field and post-excavation work are complete and the results assessed.

In the meantime, please do not hesitate to contact me should you need further information. *This response relates solely to archaeological issues.*

Yours sincerely,

Diane Walls

Diane Walls MA PgDip MIFA
Archaeology Advisor
Greater London Archaeology Advisory Service, London Region
diane.walls@english-heritage.org.uk

cc: Richard Meager — CgMs Ltd
cc: Bruce Coey — RBK&C
cc: Julian Shirley — DP9

ENGLISH HERITAGE

Executive Director of Planning & Conservation,
Royal Borough of Kensington and Chelsea,
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Archaeology Advisor
Greater London Archaeology Advisory Service, London Region
diane.walls@english-heritage.org.uk

cc: Richard Meager — CgMs Ltd
cc: Bruce Coey — RBK&C
cc: Julian Shirley — DP9

LOTS ROAD POWER STATION AND LAND AT THAMES AVENUE, LONDON, SW10: ENVIRONMENTAL ARCHAEOLOGICAL INVESTIGATIONS

N.P. Branch, C.P. Green, C.R. Batchelor, D. Young, S. Elias and N. Cameron

ArchaeoScape™,
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Egham Hill, Egham, Surrey, TW20 0EX

LOTS ROAD POWER STATION AND LAND AT THAMES AVENUE, LONDON, SW10: ENVIRONMENTAL ARCHAEOLOGICAL INVESTIGATIONS

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ArchaeoScape™, Department of Geography, Royal Holloway University of London, Egham Hill, Egham, Surrey, TW20 OEX, UK

INTRODUCTION

This report summarises the findings arising out of the environmental archaeological investigations undertaken by *ArchaeoScape™* in connection with the proposed development at the Lots Road Power Station and land at Thames Avenue, London, SW10 (National Grid Reference: TQ 264 769; Figure 1). The investigations were deemed necessary because there is a paucity of environmental archaeological data for southwest London. Recent environmental archaeological investigations at a small number of nearby sites, such as Battersea Power Station (Branch *et al.*, 2003) and Barn Elms, Point Pleasant and Strathville Road (Cowie and Eastmond, 1997a, b) have demonstrated that sedimentary sequences suitable for palaeoenvironmental reconstruction exist. Battersea Power Station, in particular, has provided evidence for a Late Devensian braided river system (end of the last glaciation; *ca.* 20,000-10,000 years ago) that developed into a meandering river, which progressively in-filled with alluvial sediment and peat. The latter represented approximately 7500 years of sediment accumulation, spanning four cultural periods (Mesolithic, Neolithic, Bronze Age and Iron Age). However, the dearth of information has prevented detailed sub-regional reconstructions of environmental change during the Holocene (last 10,000 years), and prohibited important regional comparisons being made (with, for example, Branch and Lowe, 1994; Thomas and Rackham, 1996; Sidell *et al.*, 2000; Branch and Green, 2004; Meager, 2007). Lots Road therefore provided an important opportunity to enhance our knowledge of environmental change in southwest London during the Holocene, and improve understanding of the impact of human activities on the natural environment. In order to achieve this goal, the following activities and methods were undertaken:

1. Recovery of continuous, undisturbed core samples from seven geoarchaeological boreholes using cable percussion (U4/U100) or window samples (Terrier rig) down to the surface of the floodplain gravel (Figure 2; Table 1).
2. Geo-referencing of each geoarchaeological borehole location using a Trimble Differential Global Positioning System (N, E and Elevation fixed to the Ordnance Survey national grid; accuracy ±1cm) (Table 1).
3. Recording of the lithostratigraphy of all the geoarchaeological borehole core samples and quantifying the organic matter content (boreholes <1> and <3>) to provide a

preliminary reconstruction of the sedimentary history. Boreholes <1> and <3> were selected for organic matter determinations because they contained organic-rich lithostratigraphic units (peat and organic detritus) indicative of more terrestrial conditions.

4. Analysis of the pollen grains to provide a reconstruction of the vegetation history (geoarchaeological boreholes <1> and <3>). Boreholes <1> and <3> were selected for pollen analysis because they contained organic-rich lithostratigraphic units (peat) indicative of more terrestrial conditions, which were overlain and underlain by alluvial sediments.
5. Analysis of diatom frustules (geoarchaeological borehole <3>) to provide a reconstruction of the hydrological history e.g. water quality and depth. Borehole <3> was selected for diatom analysis because it contained a thick sequence of alluvial sediments overlying and underlying peat or detrital organic matter.
6. Analysis of macroscopic plant (waterlogged and charred seeds) and insect remains from selected bulk samples (geoarchaeological boreholes <1> and <3>) to provide a reconstruction of the vegetation history and general environmental context of the site. Geoarchaeological boreholes <1> and <3> were selected for analysis of plant and insect macrofossils because they contained organic-rich lithostratigraphic units (peat) indicative of more terrestrial conditions, which were overlain and underlain by alluvial sediments.
7. Radiocarbon dating of geoarchaeological boreholes <1> and <3> to provide a geochronological framework for the litho- and bio-stratigraphic records.

GEOLOGICAL CONTEXT

The site is *ca.* 0.25km from the modern course of the River Thames on the north side of the river. Chelsea Creek, the lower reach of a minor left bank tributary of the Thames, is close by to the west and south of the site. The bedrock beneath the site is shown by the British Geological Survey (BGS; 1:50,000 Sheet 270 South London 1998) to be the London Clay. The broad spread of Alluvium marking the confluence of Chelsea Creek with the Thames extends for a short distance into the southern corner of the Lots Road site. The remainder of the site is mapped by BGS as Kempton Park Terrace Gravel. Gibbard (1985) describes the alluvium adjacent to Chelsea Creek as 'grey to black organic silty clay, almost 4m thick.' He shows it (Figure 23 of Gibbard, 1985) abutting the Kempton Park Gravel to the east of Chelsea Creek with a steep contact lacking surface topographic expression and with the surface of the Alluvium and the adjacent Kempton Park Gravel at a level close to 3.0m OD. These natural deposits are overlain at Lots Road by up to 3m of Made Ground, bringing the modern ground surface to a level of about 6.0m OD. The alluvium is shown by Gibbard

(1985) to overlie *ca.* 6.0m of Late Devensian Late Glacial Shepperton Gravel with the base of the Alluvium at a level close to OD. The Kempton Park Gravel probably underlies much of the Lots Road site and rests directly on the bedrock London Clay. It is typically 4m to 7m in thickness and usually consists of current bedded sands and gravels, although organic horizons have been recorded within the gravel at a number of sites and have proved to be of Mid-Devensian age (Gibbard *et al.*, 1982).

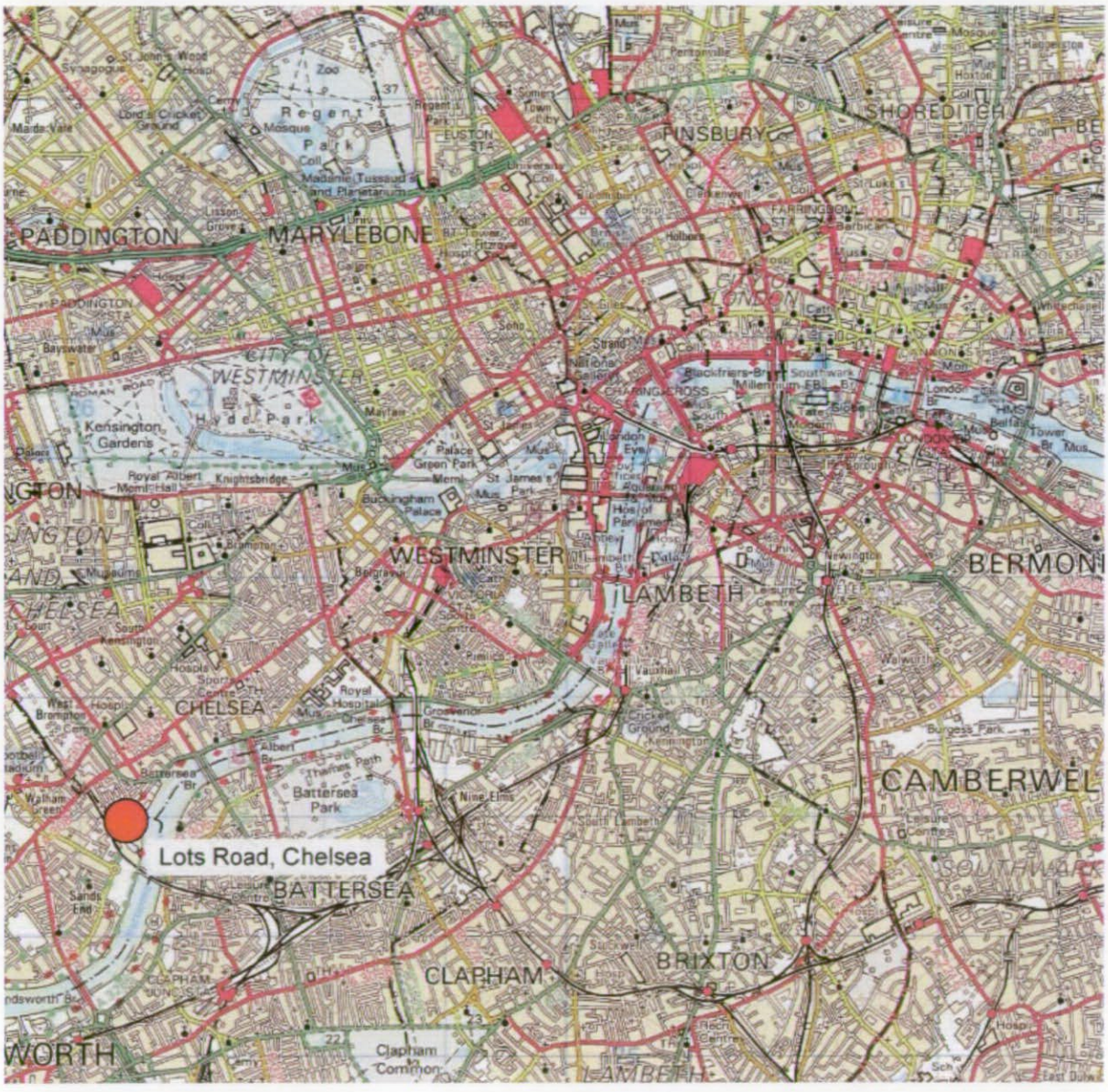

Figure 1: Location of the Lots Road Power Station and land at Thames Avenue, London (reproduced from Ordnance Survey digital map data ©Crown copyright 2007. All rights reserved. License number 0100031673)

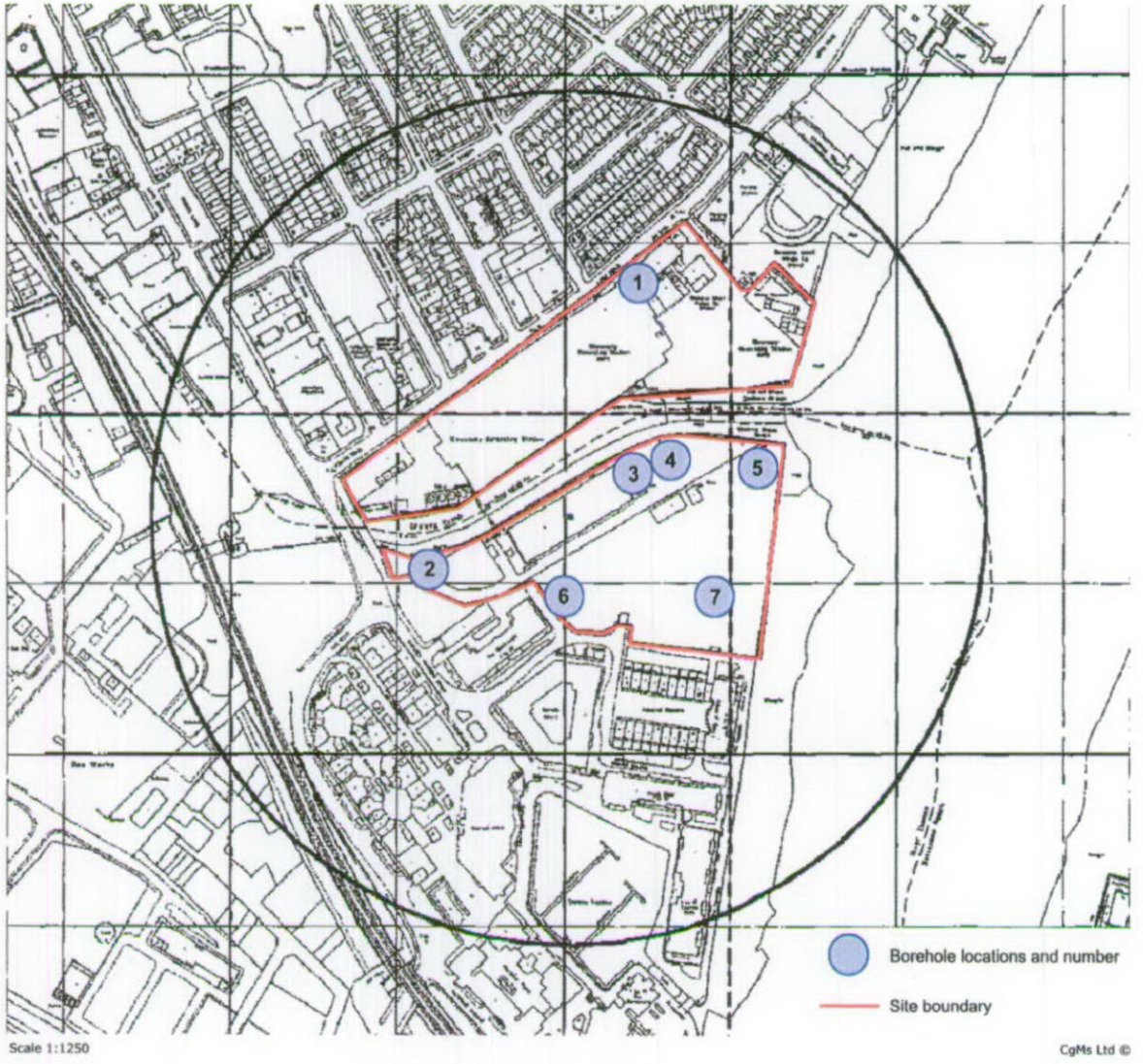

Figure 2: Location of the geoarchaeological boreholes, Lots Road Power Station and land at Thames Avenue, London (see Table 1)

Table 1: Details of the geoarchaeological boreholes taken at Lots Road Power Station and land at Thames Avenue, London

Geoarchaeological borehole number	Northing	Easting	Elevation (m OD)
<1>	526449.2	177086.1	6.286
<2>	526317.4	176918.4	6.343
<3>	526468.8	176981.6	6.145
<4>	526441.9	176976.5	6.208
<5>	526509.9	176963.9	5.907
<6>	526426.7	176902.0	7.784
<7>	526483.7	176918.5	7.523

METHODS

Field investigations

Continuous borehole core samples suitable for environmental archaeological laboratory analysis were recovered from seven boreholes (Table 1; Figure 2). The method employed varied according to the local conditions but involved either cable percussion or window sampling using a Terrier rig. The core samples were stored in plastic liners, wrapped in cling-film, labelled and returned to Royal Holloway for cold storage at 2^{0}C. The location of each of the geoarchaeological boreholes was determined by either on-site conditions, or the desire to gain a spatially representative set of borehole core samples (Figure 2).

Lithostratigraphic descriptions

The lithostratigraphy of all geoarchaeological borehole core samples (Figure 3; Tables 2, 4, 5, 7, 8, 9 and 10) was described in the laboratory using standard procedures for recording unconsolidated sediment, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts). 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, fine sand, silt and clay, and (4) recording the unit boundaries e.g. sharp or diffuse.

Organic matter determinations

Sub-samples were taken from two geoarchaeological borehole sequences (<1> and <3>) for determination of the organic matter content (Tables 3 and 6; Figures 4 and 5). These records were important for two reasons: (1) they identified lithostratigraphic units with a higher organic matter content that may be suitable for radiocarbon dating, and (2) they identified increases in organic matter possibly associated with more terrestrial conditions and/or the dumping of anthropogenic waste. The organic matter content was determined by standard

procedures involving: (1) drying the sub-sample at 110°C for 12 hours to remove excess moisture; (2) placing the sub-sample in a muffle furnace at 550°C for 2 hours to remove organic matter (thermal oxidation), and (2) re-weighing the sub-sample obtain the 'loss-on-ignition' value (see Bengtsson and Enell, 1986).

Radiocarbon dating

Four sub-samples were taken from geoarchaeological borehole <1> (1.13 to 1.07, 0.81 to 0.76, 0.48 to 0.42 and 0.13 to 0.19m OD) and two samples from geoarchaeological borehole <3> (1.50 to 1.47 and 0.63 to 0.61m OD). These were submitted for radiocarbon dating to Beta Analytic Inc, Florida (Table 11). The results have been calibrated using OxCal v4.0.1 Bronk Ramsey (1995, 2001 and 2007) and IntCal04 atmospheric curve (Reimer *et al.,* 2004).

Pollen analysis

Sub-samples were extracted from two geoarchaeological borehole sequences (<1> and <3>) for pollen analysis. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) deflocculation of the sample in 1% Sodium pyrophosphate; (3) sieving of the sample to remove coarse mineral and organic fractions (>125μ); (4) acetolysis; (5) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm^3); (6) 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 Royal Holloway (University of London) pollen type collection and the following sources of keys and photographs: Moore *et al* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The analysis procedure consisted of attempting a count of 300 total land pollen grains (trees, shrubs and herbs), and recording all aquatics and spores encountered within this pollen sum. Unfortunately, too few pollen grains and spores were encountered on the microscope slides, and instead the analysis consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of pollen grains and spores, and the principal pollen taxa (Tables 12 and 13).

Diatom analysis

Sub-samples were extracted from one of the geoarchaeological borehole sequences (<3>) for analysis 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).

Due to the low concentration and poor preservation of diatoms, the analysis procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of diatoms, and the principal diatom taxa (Tables 14 and 15). Diatom floras and taxonomic publications were consulted to assist with diatom identification; these include Hartley *et al.* (1996) and Krammer and Lange-Bertalot (1986-1991). Diatom species' salinity preferences are discussed using the halobian groups of Hustedt (1953, 1957: 199), these salinity groups are summarised as follows:

1. Mesohalobian: 0.2-30 g l-1
2. Oligohalobian - Halophilous: optimum in slightly brackish water
3. Oligohalobian: Indifferent: optimum in freshwater but tolerant of slightly brackish water
4. Halophobous: Exclusively freshwater
5. Unknown: Taxa of unknown salinity preference.

Bulk sample analysis (plant macrofossils and insect remains)

Bulk samples were taken from two of the geoarchaeological borehole sequences (<1> and <3>) for analysis of waterlogged and charred plant macrofossils, and insect remains. The bulk samples were wet-sieved using 300 micron and 1mm mesh sizes. The residues were scanned using a low power zoom-stereo microscope and identifications made using keys, photographs and reference collections at Royal Holloway. Plant nomenclature follows Stace (1997). Due to the low concentration and poor preservation of both plant and insect remains, quantification of the taxa recorded was deemed unnecessary (Tables 16, 17, 18 and 19).

RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHY (SEDIMENTARY SEQUENCE)

The ground surface from which the geoarchaeological boreholes were put down was uneven, between 5.91m OD (borehole <5>) and 7.78m OD (borehole <6>) (Figure 3; Tables 2, 4, 5, 7, 8, 9 and 10). Geoarchaeological borehole <1> was to the north of the present mouth of

Chelsea Creek; the remaining geoarchaeological boreholes were to the south of the creek (Figure 2). The ground surface was underlain by substantial but varying thicknesses of Made Ground. The highest level at which undisturbed natural/semi-natural alluvium was recognised was 4.57m OD in geoarchaeological borehole <4>. In the other geoarchaeological boreholes, natural/semi-natural alluvial sediments were encountered at levels between 3.52m OD (geoarchaeological borehole <7>) and 0.91m OD (geoarchaeological borehole <5>). No alluvium was present in geoarchaeological borehole <2>, at the western end of the site. Only Made Ground was recorded in geoarchaeological borehole <2> and this borehole is not considered further in this account.

The variation between geoarchaeological boreholes in terms of the surviving thickness of alluvial sediment is almost certainly the result of truncation in the course of groundwork associated with successive stages in the industrial development of the site. Sandy gravel was encountered beneath the fine-grained alluvium at -0.02m OD in geoarchaeological borehole <5> and at 0.80m OD in borehole <7>. Gravely silt was encountered in geoarchaeological borehole <3> at 0.49m OD and in borehole <4> at the higher level of 2.16m OD. Thus, in broad terms, the alluvial sequence beneath the Lots Road site consists of silts and sandy and clayey silts overlying sand and gravel. In the fine-grained alluvium, plant remains are common throughout and mollusc remains are common in the upper part of the sequence. Mollusc remains occur as complete gastropod shells and complete valves of bivalve species together with broken and finely divided shell remains. Plant debris is present as identifiable fragments and as finely divided and decomposed remains, which appear as black flecks in many of the silty horizons.

In the upper part of the fine-grained alluvial sequence, where mollusc remains were common, the sediment was calcareous, but in the lower part of the sequence in all the geoarchaeological boreholes, the sediment was non-calcareous. In geoarchaeological boreholes <1>, <3>, <6> and <7> thin peat horizons were present between 1.99m OD (borehole <6>) and 0.29m OD (borehole <1>). In geoarchaeological borehole <1>, located to the north of the Chelsea Creek, a very dark brown sandy peat was present from 0.29m to 1.13m OD (Figures 3 and 4; Table 3). A second peat unit was also present from 1.29 to 1.40m OD. These two peat units were separated by grey sandy silt containing common plant remains (1.13 to 1.29m OD). In geoarchaeological borehole <3>, located to the south of the Chelsea Creek, thin peat horizons were described within a dark grey silt (Unit 2: 0.49 to 1.15m OD) between 0.56 to 0.61m OD (Figures 3 and 5; Table 6). Directly above this unit further thin peat horizons (between 1.48 and 1.54m OD and 1.65 and 1.67m OD) were described within very dark grey silt (Unit 3; 1.15 to 1.75m OD).

In geoarchaeological borehole <5>, Made Ground was present down to 0.91m OD and only 0.30m of alluvial silt was present between this level and the underlying sand and gravel. The upper part of this silt (5-6m Unit 3) contained a variety of anthropogenic material, but the lower part (Unit 2) included plant-rich partings, probably equivalent to the peats seen in geoarchaeological boreholes <1> and <3>. In all the geoarchaeological boreholes, except borehole <1>, the fine-grained alluvial sediments contained anthropogenic material in the form of charcoal, coal and CBM. This material was recognised at various different levels in different geoarchaeological boreholes - towards the top of the sequences in boreholes <4> and <7>, but near the bottom in borehole <3>, borehole <5> and borehole <6>, down to as low as -0.02m OD in borehole <5>. Charcoal was present in silts underlying the peats in geoarchaeological boreholes <3> and <6>.

There was some indication of soil-forming processes within the fine-grained alluvium in geoarchaeological boreholes <3>, <4>, <6> and <7>. Worm granules occurred in geoarchaeological borehole <3> (4-5m Unit 5) and at two levels in borehole <4> (3-4m Unit 3 and 1-2m Unit 5). Evidence of rooting was present in geoarchaeological borehole <4> (4-5m Unit 1) and borehole <6> (550-590m Units 6 and 4). Mottling of the sediment was also present, in geoarchaeological boreholes <3> (3-4m Unit 8 at 2.65-2.52m OD), <4> (1-2m Unit 5 at 4.57-4.22m OD and 2-3m Unit 4 at 4.22-3.22m OD) and <7> (5.05-5.65 at 2.47-1.87m OD). There was however, no obvious or well-developed palaeosol that could be traced across the site as a whole.

In summary, the Lots Road site is underlain by sand and gravel, which in most places has a surface close to 0.00m OD, but probably rises more than a metre above this level in geoarchaeological borehole <4>. The sand and gravel is overlain by mainly silty, organic, alluvial sediment which may originally have been over 4m in thickness and which includes in its lower part, one or two thin, probably discontinuous, peat layers at levels between 0.29m (borehole <1>) and 1.99m OD (borehole <6>). There is some evidence of soil-forming processes affecting the alluvial sequence, notably in geoarchaeological borehole <4>, which may represent a slightly more terrestrial sequence associated with the slightly higher level of the underlying sand and gravel at this point. However, there are no indications in the geoarchaeological boreholes of any sustained periods of soil formation leading to the development of mature terrestrial soils. Charcoal, probably reflecting human occupation of the nearby landscape, is intermittently present throughout the fine-grained alluvial sequence, and coal and CBM are also present at various levels down to 0.61m OD (geoarchaeological borehole <5>).

The site has evidently been affected by on-site or nearby occupation throughout the period recorded in the fine-grained alluvial sediments. More recently, as a result of occupation and development of the site, the alluvial sequence has been more or less severely truncated in all the boreholes except geoarchaeological borehole <4>. The surviving evidence gives no indication of significant spatial patterns in the distribution of the alluvium, and it is worth noting that the alluvial sequences to north and south of Chelsea Creek, (borehole <1> and borehole <3>) and across the full extent of the site, to boreholes <6> and <7> in the south, appear to be similar, suggesting that the whole site has experienced a fairly uniform environmental history.

Table 2: Lithostratigraphic description of geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
2.29 to 2.14	4.00 to 4.15	9	Clayey made ground/coring spoil
2.14 to 1.83	4.15 to 4.46	8	Mortar-rich made ground
1.83 to 1.40	4.46 to 4.89	7	Sandy made ground, including piece of clay tobacco pipe stem and piece of green glazed pottery
1.40 to 1.29	4.89 to 5.00	6	Peat (*cut away as sub-sample*)
1.29 to 1.13	5.00 to 5.16	5	5Y4/1 grey; moderately sorted sandy silt; massive; common plant remains; well-marked transition to:
1.13 to 0.29	5.16 to 6.00	4	10YR2/2 very dark brown; slightly sandy peat; horizontal bedding defined by variable mineral content; well-marked transition to:
0.29 to 0.00	6.00 to 6.29	3	10YR2/2 very dark brown; peat; well-marked transition to:
0.00 to -0.23	6.29 to 6.52	2	7.5YR3/3 yellowish brown; sand; well-marked transition to:
-0.23 to -0.71	6.52 to 7.00	1	7.5YR3/6 olive grey; silty clay.

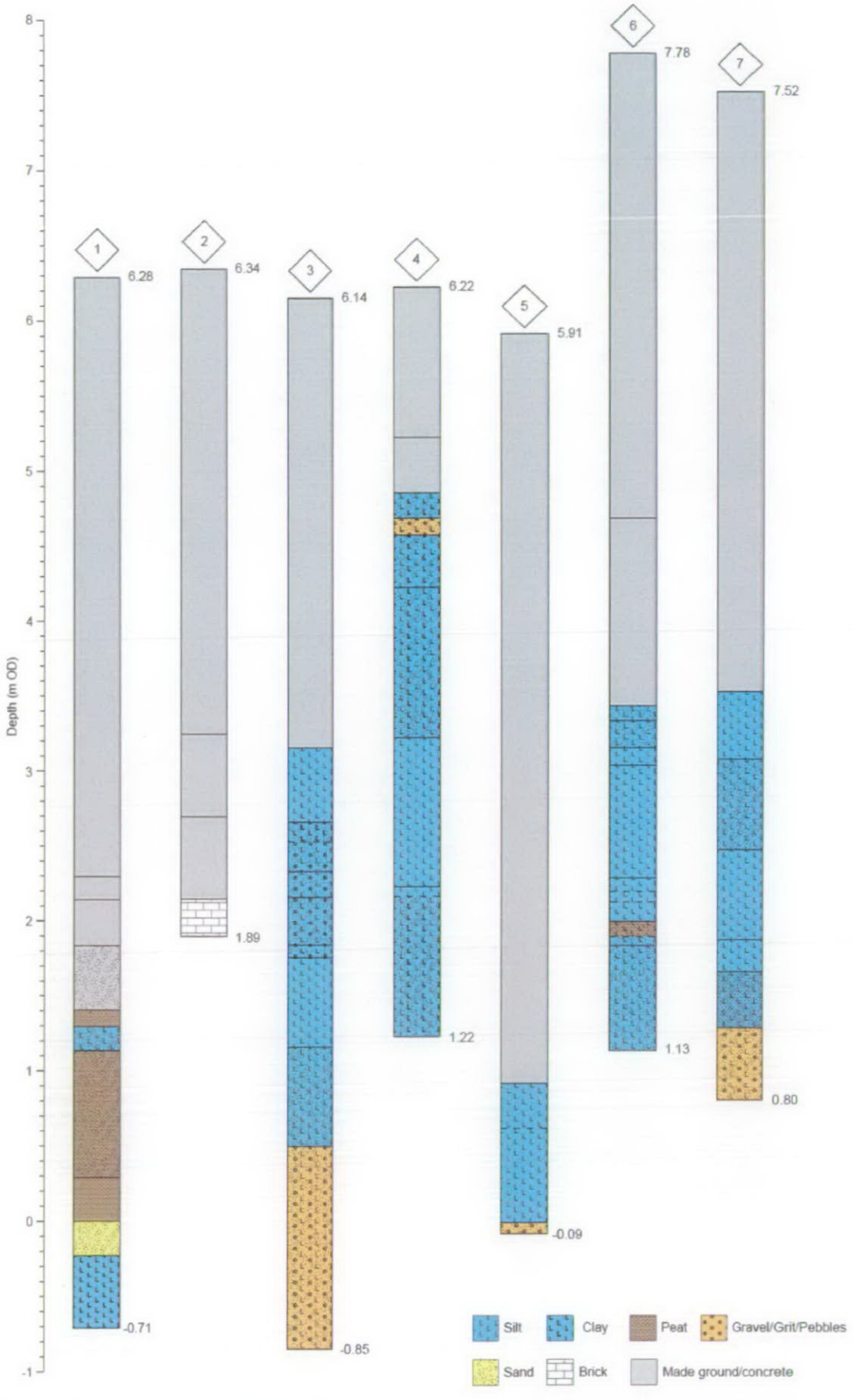

Figure 3: Lithostratigraphy of the geoarchaeological borehole samples from Lots Road Power Station and land at Thames Avenue, London

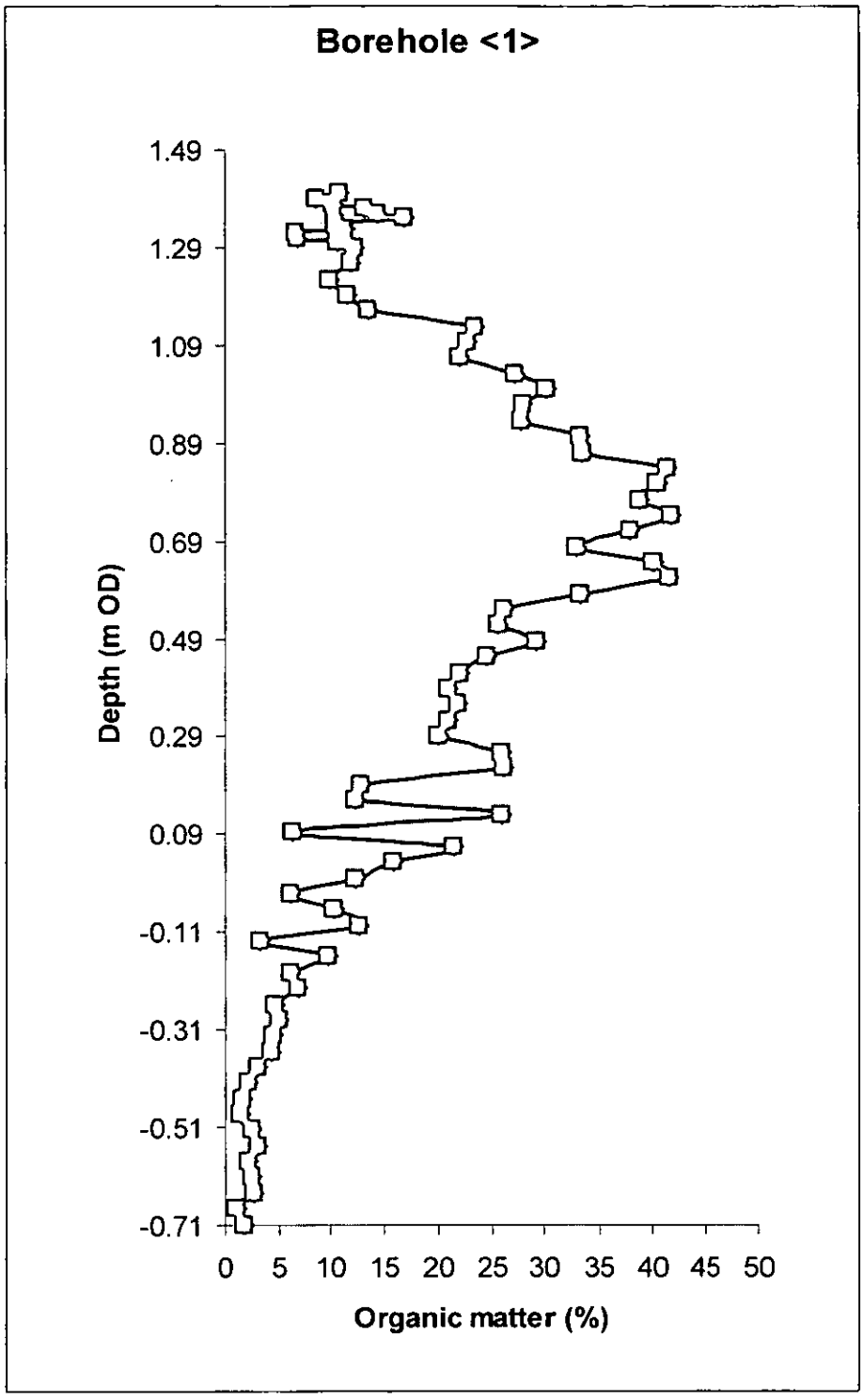

Figure 4: Organic matter determinations for geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Table 3: Organic matter determinations for geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)		Depth (m from surface)		Organic matter content (%)
From	To	From	To	
1.41	1.40	4.885	4.890	10.82
1.40	1.39	4.895	4.900	8.69
1.39	1.38	4.905	4.910	10.23
1.38	1.37	4.915	4.920	13.19
1.37	1.36	4.925	4.930	14.51
1.36	1.35	4.935	4.940	16.91
1.35	1.34	4.945	4.950	10.55
1.34	1.33	4.955	4.960	11.31
1.33	1.32	4.965	4.970	6.60
1.32	1.31	4.975	4.980	6.79
1.31	1.30	4.985	4.990	10.67
1.30	1.29	4.995	5.000	12.33
1.27	1.26	5.016	5.032	11.93
1.24	1.23	5.048	5.064	9.85
1.21	1.19	5.081	5.097	11.56
1.18	1.16	5.113	5.129	13.48
1.15	1.13	5.145	5.161	23.41
1.11	1.10	5.177	5.193	22.68
1.08	1.06	5.209	5.225	22.07
1.05	1.03	5.242	5.258	27.27
1.02	1.00	5.274	5.290	30.08
0.98	0.97	5.306	5.322	27.89
0.95	0.94	5.338	5.354	27.83
0.92	0.90	5.370	5.386	33.18
0.89	0.87	5.403	5.419	33.35
0.86	0.84	5.435	5.451	41.34
0.82	0.81	5.467	5.483	40.39
0.79	0.77	5.499	5.515	38.75
0.76	0.74	5.531	5.547	41.67
0.73	0.71	5.564	5.580	37.84
0.69	0.68	5.596	5.612	32.86
0.66	0.65	5.628	5.644	40.12
0.63	0.61	5.660	5.676	41.59
0.60	0.58	5.692	5.708	33.18
0.57	0.55	5.725	5.741	26.24
0.53	0.52	5.757	5.773	25.70
0.50	0.49	5.789	5.805	29.26
0.47	0.45	5.821	5.837	24.46
0.44	0.42	5.853	5.869	22.05
0.40	0.39	5.886	5.902	21.01
0.37	0.36	5.918	5.934	21.80
0.34	0.32	5.950	5.966	20.91
0.31	0.29	5.982	5.998	20.01
0.27	0.26	6.016	6.032	26.03
0.24	0.23	6.048	6.064	26.22
0.21	0.19	6.081	6.097	12.80
0.18	0.16	6.113	6.129	12.22
0.15	0.13	6.145	6.161	25.94
0.11	0.10	6.177	6.193	6.31

0.08	0.06	6.209	6.225	21.46
0.05	0.03	6.242	6.258	15.85
0.02	0.00	6.274	6.290	12.30
-0.02	-0.03	6.306	6.322	6.18
-0.05	-0.06	6.338	6.354	10.36
-0.08	-0.10	6.370	6.386	12.64
-0.11	-0.13	6.403	6.419	3.20
-0.14	-0.16	6.435	6.451	9.67
-0.18	-0.19	6.467	6.483	6.06
-0.21	-0.23	6.499	6.515	6.85
-0.24	-0.26	6.531	6.547	4.75
-0.27	-0.29	6.564	6.580	4.98
-0.31	-0.32	6.596	6.612	4.59
-0.34	-0.35	6.628	6.644	4.40
-0.37	-0.39	6.660	6.676	3.12
-0.40	-0.42	6.692	6.708	2.12
-0.43	-0.45	6.725	6.741	1.57
-0.47	-0.48	6.757	6.773	1.36
-0.50	-0.52	6.789	6.805	2.55
-0.53	-0.55	6.821	6.837	3.02
-0.56	-0.58	6.853	6.869	2.24
-0.60	-0.61	6.886	6.902	2.51
-0.63	-0.64	6.918	6.934	2.79
-0.66	-0.68	6.950	6.966	1.11
-0.69	-0.71	6.982	6.998	1.75

Table 4: Lithostratigraphic description of geoarchaeological borehole <2>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
3.24 to 2.69	3.10 to 3.65	3	Clayey made ground with large inclusion of mortar overlying brick rubble.
2.34 to 2.14	4.00 to 4.20	2	Clayey made ground with CBM
2.14 to 1.89	4.20 to 4.45	1	Loose rubble of brick fragments (up to 90mm)

Table 5: Lithostratigraphic description of geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
3.15 to 2.65	3.00 to 3.50	9	5Y3/1 very dark grey (with black flecks); very well sorted silt; massive; common decomposed plant remains (black flecks); scattered mollusc remains whole and broken shell increasing in frequency and increasingly well preserved downward; strong acid reaction; sharp contact with:
2.65 to 2.52	3.50 to 3.63	8	2.5N5 grey; with yellowish brown mottling; poorly sorted; massive; clayey sand; scattered plant remains; strong acid reaction; gradual transition to:
2.52 to 2.32	3.63 to 3.83	7	5Y3/1 very dark grey (with black flecks); poorly sorted; gritty and pebbly silty sand with sub-angular flint clasts (up to 15mm); massive; common plant remains; scattered broken mollusc

			shell; ?CBM (small (1mm) particle red sandy); strong acid reaction; well-marked transition to:
2.32 to 2.15	3.83 to 4.00	6	5Y3/2 dark olive grey; well sorted silty fine sand with sub-angular flint clasts (up to 25mm); massive; scattered plant remains; scattered broken mollusc shell; strong acid reaction.
2.15 to 1.83	4.00 to 4.32	5	5Y4/1 dark grey (with black flecks); well sorted slightly sandy silt with scattered flint clasts (up to 10mm); massive; common decomposed plant remains (black flecks); common mollusc remains broken and complete shells; worm granules; strong acid reaction; sharp contact with:
1.83 to 1.75	4.32 to 4.40	4	5Y5/1 grey; well sorted slightly silty fine sand; horizontal bed; sharp contact with:
1.75 to 1.15	4.40 to 5.00	3	5Y3/1 very dark grey; well sorted silt with partings of plant material and thin peat horizons at 1.67-1.65 and 1.54-1.48m OD; common plant remains.
1.15 to 0.49	5.00 to 5.66	2	5Y4/1 dark grey; well sorted silt becoming increasingly sandy downward with scattered sub-angular flint clasts (up to 25mm) and cluster of casts at 0.38-0.36m OD; massive; common plant remains with peaty horizon at 0.61 to 0.56m OD; charcoal (associated with cluster of flint clasts at 0.38-0.36m OD; well-marked transition to:
0.49 to 0.15	5.66 to 6.00	1	5Y4/1 dark grey; moderately sorted slightly gravelly silty sand with sub-angular flint clasts (up to 25mm); massive.

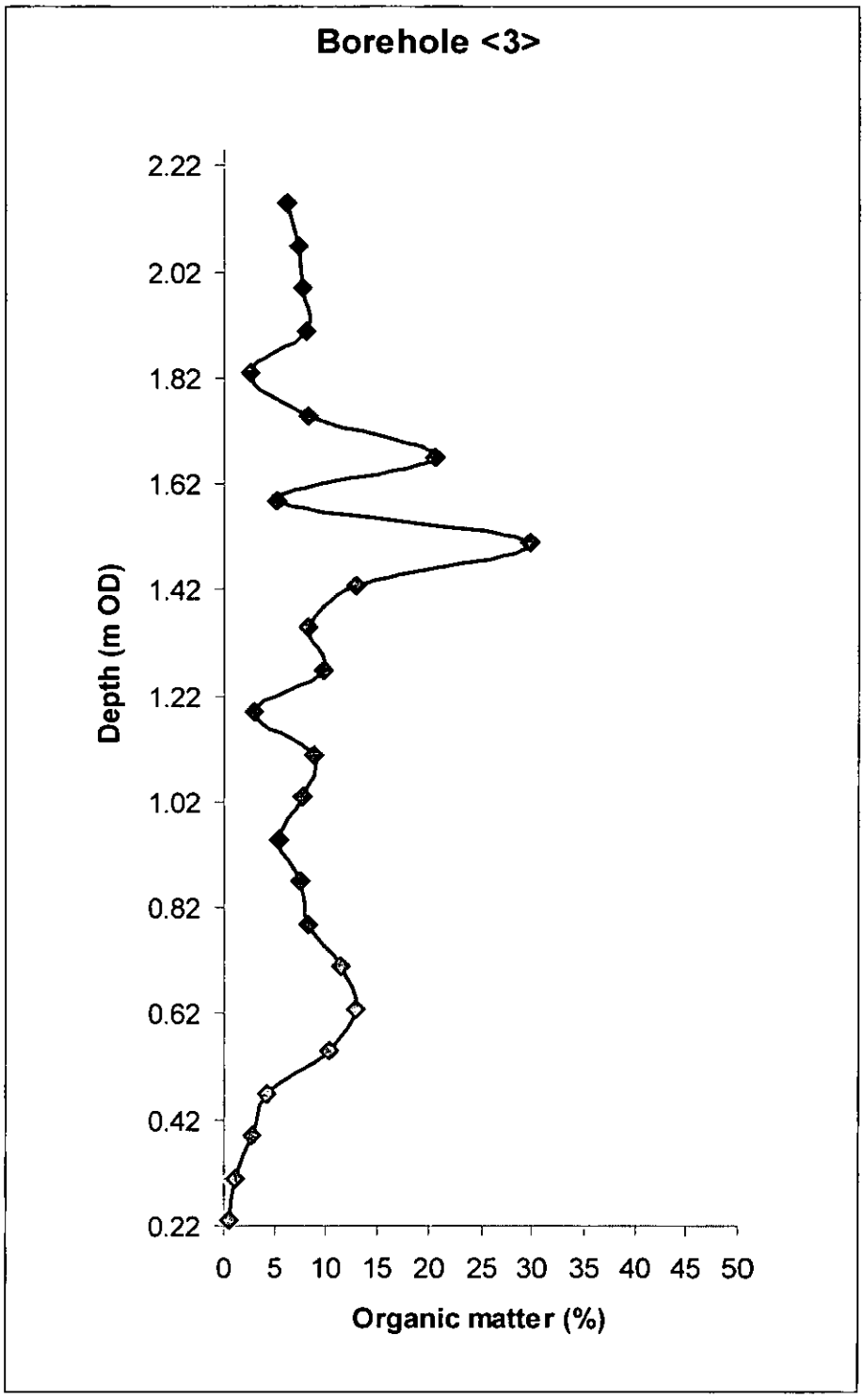

Figure 5: Organic matter determinations for geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Table 6: Organic matter determinations for geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)		Depth (m from surface)		Organic matter content (%)
From	To	From	To	
2.15	2.14	4.00	4.01	6.19
2.07	2.06	4.08	4.09	7.27
1.99	1.98	4.16	4.17	7.72
1.91	1.90	4.24	4.25	8.05
1.83	1.82	4.32	4.33	2.58
1.75	1.74	4.4	4.41	8.25
1.67	1.66	4.48	4.49	20.64
1.59	1.58	4.56	4.57	5.31
1.51	1.50	4.64	4.65	29.70
1.43	1.42	4.72	4.73	13.01
1.35	1.34	4.8	4.81	8.25
1.27	1.26	4.88	4.89	9.79
1.19	1.18	4.96	4.97	3.02
1.11	1.10	5.04	5.05	8.77
1.03	1.02	5.12	5.13	7.71
0.95	0.94	5.2	5.21	5.40
0.87	0.86	5.28	5.29	7.52
0.79	0.78	5.36	5.37	8.18
0.71	0.70	5.44	5.45	11.51
0.63	0.62	5.52	5.53	12.84
0.55	0.54	5.6	5.61	10.31
0.47	0.46	5.68	5.69	4.39
0.39	0.38	5.76	5.77	2.73
0.31	0.30	5.84	5.85	1.20
0.23	0.22	5.92	5.93	0.57

Table 7: Lithostratigraphic description of geoarchaeological borehole <4>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
6.22 to 5.22	0.00 to 1.00	9	Made ground with building stone, brick and mortar
5.22 to 4.85	1.00 to 1.37	8	Black gritty made ground with piece of electric cable.
4.85 to 4.68	1.37 to 1.54	7	10YR5/8 yellowish brown; moderately sorted silty/clayey sand; massive; scattered whole and broken mollusc shell; moderate acid reaction (made ground); sharp contact with:
4.69 to 4.57	1.54 to 1.65	6	Black; stony clayey sand with CBM (made ground).
4.57 to 4.22	1.65 to 2.00	5	2.5Y4/4 olive brown with 2.5YR3/1 dark red mottles; well sorted sandy clayey silt with scattered sub-angular flint clasts (up to 20mm); massive; worm granules; small fish vertebra; charcoal; strong acid reaction.
4.22 to 3.22	2.00 to 3.00	4	2.5Y4/4 olive brown and 2.5YR3/6 dark red; well sorted sandy silty clay/clayey silt; massive; very scattered broken mollusc shell; strong acid reaction.
3.22 to 2.22	3.00 to 4.00	3	2.5Y4/4 olive brown with 2.5YR3/6 dark red; very well sorted silt; massive; very scattered plant remains; worm granules; scattered broken mollusc shell; weak acid reaction.
2.22 to 2.16	4.00 to 4.06	2	2.5Y4/4 olive brown with 2.5YR3/6 dark red mottles; very well sorted silt; massive; very scattered plant remains; scattered broken mollusc shell; weak acid reaction; gradual transition to:
2.16 to 1.22	4.06 to 5.00	1	2.5Y4/4 olive brown; well sorted slightly clayey silty sand with sub-angular flint clasts (up to 30mm); weakly defined horizontal bedding; scattered root remains; scattered plant remains.

Table 8: Lithostratigraphic description of geoarchaeological borehole <5>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
5.91 to 0.91	0.00 to 5.00	4	Made Ground
0.91 to 0.61	5.00 to 5.29	3	very well sorted silt; massive; common plant remains; common mollusc remains whole and broken shell; small particles of coal; piece of CBM at 0.59 to 0.57m OD; moderate acid reaction; gradual transition to:
0.61 to -0.02	5.29 to 5.92	2	2.5YN5 grey; well sorted silt with layer of sub-angular flint clasts at 0.35 to 0.32m OD; massive with sub-horizontal plant-rich layers; common plant remains; no acid reaction; sharp contact with:
-0.02 to -0.09	5.92 to 6.00	1	2.5Y4/4 olive brown; sandy gravel.

Table 9: Lithostratigraphic description of geoarchaeological borehole <6>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
4.68 to 3.43	3.10 to 4.30	11	Made ground - loose earthy rubble with concrete, CBM, mortar and clayey sandy rubble with flint gravel, CBM
3.43 to 3.33	4.30 to 4.40	10	5Y6/1 grey to 5Y4/1 dark grey (with black flecks); moderately sorted sandy silt; massive; scattered plant remains; strong acid reaction; sharp contact with:
3.33 to 3.15	4.40 to 4.58	9	2.5Y4/2 dark greyish brown; moderately sorted very slightly silty medium to fine sand; massive; scattered decomposed plant remains (black flecks); very scattered small particles of ?CBM; sharp contact with:
3.15 to 3.03	4.58 to 4.70	8	5Y3/1 very dark grey (with black flecks); very well sorted silt; massive; common plant remains, mainly decomposed (black flecks); strong acid reaction.
2.88 to 2.28	4.90 to 5.50	7	5Y3/1 very dark grey (with black flecks); very well sorted silt; massive; common intact and decomposed plant remains (black flecks); scattered mollusc remains whole and broken shell; strong acid reaction.
2.28 to 2.19	5.50 to 5.59	6	2.5YN4 grey; very well sorted silt; massive; root channels with common root remains; scattered plant remains; no acid reaction; gradual transition to:
2.19 to 2.12	5.59 to 5.66	5	10YR3/2 very dark greyish brown; very well sorted silt; massive with faint horizontal banding reflecting plant debris content; common plant remains; no acid reaction; gradual transition to:
2.12 to 1.99	5.66 to 5.79	4	10YR4/2 dark greyish brown; very well sorted silt; faint horizontal banding reflecting plant debris content; very scattered root channels and root remains; common plant remains; no acid reaction; well-marked transition to:
1.99 to 1.89	5.79 to 5.89	3	5YR3/2 dark reddish brown; peaty silt and fairly well humified slightly sandy peat; horizontally bedded, main peat development at 1.96 to 1.93m OD; iron oxide spherules; no acid reaction, gradual transition to:
1.89 to 1.83	5.89 to 5.95	2	10YR3/2 very dark greyish brown; very well sorted silt with scattered medium to coarse sand grains; massive; common plant remains; no acid reaction.
1.58 to 1.13	6.20 to 6.65	1	2.5Y4/2 dark greyish brown; moderately sorted silty fine to medium sand; massive; common plant remains; charcoal (up to 10mm); no acid reaction.

Table 10: Lithostratigraphic description of geoarchaeological borehole <7>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth from surface (m)	Unit number	Description
3.52 to 3.07	4.00 to 4.45	7	5Y3/2 very dark grey (with black flecks) weathering to 10YR4/3 dark brown on partings in the uppermost 250mm; very well sorted silt; massive; common decomposed plant remains (black flecks); scattered small pieces of broken mollusc shell; small particles of charcoal; vivianite; strong acid reaction.
2.92 to 2.47	4.60 to 5.05	6	5Y3/2 very dark grey (with black flecks) weathering to 10YR4/4 dark yellowish brown on partings; moderately sorted sandy silt; massive; scattered decomposed plant remains (black flecks); scattered small particles of mollusc shell; charcoal; finely divided CBM; small particles of ?coal; strong acid reaction.
2.47 to 1.87	5.05 to 5.65	5	5Y4/2 olive grey with 2.5Y4/4 olive brown mottles; very well sorted silt; massive; scattered small plant remains; scattered small broken pieces of mollusc shell; weak acid reaction.
1.72 to 1.66	5.80 to 5.86	4	5Y4/2 olive grey; very well sorted silt; massive; scattered plant remains increasingly common downwards; scattered small broken pieces of mollusc shell; weak acid reaction; well-marked transition to:
1.66 to 1.28	5.86 to 6.25	3	7.5YR3/2 dark brown; very slightly sandy/silty moderately humified peat.
1.02 to 0.80	6.50 to 6.72	2	5Y4/2 olive grey; moderately sorted slightly silty slightly gravelly sand with sub-angular flint clasts (up to 25mm); massive; no acid reaction; well-marked transition to:
0.80 to 0.57	6.72 to 6.95	1	5Y4/4 olive; slightly silty sandy gravel; massive; no acid reaction.

RESULTS AND INTERPRETATION OF THE RADIOCARBON DATING

The results of the radiocarbon dating are presented in Table 11. The δ13C (‰) values are consistent with that expected for organic sediment, and there is no evidence for mineral or biogenic carbon contamination. The samples for radiocarbon dating were selected from locations within geoarchaeological boreholes <1> and <3> having higher organic matter content associated with the peat units (Figure 4 and Table 3; Figure 5 and Table 6). The results indicate that peat accumulation in geoarchaeological borehole <1> commenced during the Late Bronze Age (910 to 790 cal BC) and continued into the middle Iron Age (400 to 350 cal BC / 300 to 210 cal BC). In geoarchaeological borehole <3>, peat accumulation occurred during the Anglo-Saxon period (420 to 610 cal AD and 430 to 640 cal AD).

Table 11: Results of the radiocarbon dating, Lots Road Power Station and land at Thames Avenue, London

Laboratory Code / Method	Material	Location	Depth (m OD)	Depth (m from surface)	Un-calibrated Radiocarbon Years Before Present (yrs BP)	Calibrated age BC / AD (BP) (2-sigma, 95.4% probability)	δ13C (‰)
Beta-245063 Standard AMS date	Peat	<1>	1.13 to 1.07	5.16 to 5.22	2280 ± 40 BP	400 to 350 cal BC (2350 to 2300 cal BP) AND 300 to 210 cal BC (2260 to 2160 cal BP)	-28.4
Beta-245064 Standard AMS date	Peat	<1>	0.81 to 0.74	5.48 to 5.55	2590 ± 40 BP	810 to 760 cal BC (2760 to 2710 cal BP) AND 680 to 670 cal BC (2630 to 2620 cal BP)	-28.3
Beta-245065 Standard AMS date	Peat	<1>	0.48 to 0.42	5.81 to 5.87	2640 ± 40 BP	840 to 780 cal BC (2790 to 2730 cal BP)	-29.2
Beta-245066 Standard AMS date	Peat	<1>	0.19 to 0.13	6.10 to 6.16	2680 ± 40 BP	910 to 790 cal BC (2860 to 2740 cal	-28.0

						BP)	
Beta-245786 Standard AMS date	Peat	<3>	1.50 to 1.47	4.65 to 4.68	1510 ± 40 BP	430 to 640 cal AD (1520 to 1320 cal BP)	-27.1
Beta-245787 Standard AMS date	Peat	<3>	0.63 to 0.61	5.52 to 5.54	1530 ± 40 BP	420 to 610 cal AD (1520 to 1340 cal BP)	-27.5

RESULTS AND INTERPRETATION OF THE POLLEN ANALYSIS

Sub-samples were extracted from two of the borehole sequences (<1B> and <3>) for pollen analysis (Tables 12 and 13). Unfortunately, pollen concentration and preservation were extremely poor throughout both sequences. This may be due to a number of factors, notably depositional and post-depositional changes in sediment and water chemistry (e.g. an increase in pH to more alkaline conditions), oxidation of the sediment surface and physical destruction due to the coarse particle size of the sedimentary units. At Lots Road, all of these factors may apply, with oxidation of the peat units suggested by the high levels of humification. Those taxa present in both boreholes indicate the presence of dryland woodland (e.g. *Quercus*) and shrubland (e.g. *Corylus*), wetland woodland (e.g. *Alnus*) and shrubland (e.g. *Salix*), and rough grassland / disturbed ground (e.g. *Plantago lanceolata*). There is no direct evidence for human activities, such as cereal pollen, which may indicate localised cultivation. Unfortunately, pollen grains and spores are too insufficient in number in both boreholes to provide a meaningful reconstruction of changes in the former vegetation cover through time.

Table 12: Pollen-stratigraphic analysis of geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD) From	To	Depth (m from surface) From	To	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (excellent)
1.41	1.40	4.89	4.89	Caryophyllaceae *Quercus* Poaceae	Campion family Oak Grass family	1	1
1.38	1.37	4.92	4.92	*Taraxacum* type	e.g. Dandelion	1	1
1.35	1.34	4.95	4.95	*Corylus* type	e.g. Hazel	1	1
1.32	1.31	4.98	4.98	*Cirsium* type	e.g. Thistle	1	1
1.27	1.26	5.02	5.03	Caryophyllaceae *Chenopodium* type	Campion family e.g. Fat hen	1	1
1.21	1.19	5.08	5.10	/	/	0	0
1.18	1.16	5.11	5.13	Caryophyllaceae	Campion family	1	1
1.15	1.13	5.14	5.16	Poaceae *Salix*	Grass family Willow	1	1
1.11	1.10	5.18	5.19	/	/	0	0
1.08	1.06	5.21	5.23	/	/	0	0
1.05	1.03	5.24	5.26	/	/	0	0
1.02	1.00	5.27	5.29	/	/	0	0
0.98	0.97	5.31	5.32	/	/	0	0
0.95	0.94	5.34	5.35	/	/	0	0
0.92	0.90	5.37	5.39	/	/	0	0
0.89	0.87	5.40	5.42	Poaceae *Quercus* *Pteridium*	Grass family Oak Bracken fern	1	1
0.86	0.84	5.43	5.45	Cyperaceae	Sedge family	0	0
0.82	0.81	5.47	5.48	/	/	0	0
0.79	0.77	5.50	5.52	/	/	0	0
0.76	0.74	5.53	5.55	/	/	0	0
0.74	0.73	5.55	5.56	/	/	0	0
0.73	0.71	5.56	5.58	*Quercus*	Oak	1	1
0.69	0.68	5.60	5.61	Poaceae	Grass family	1	1

				Taraxacum type *Polypodium vulgare* *Dryopteris* type	e.g. Dandelion Polypody fern e.g. Buckler fern		
0.66	0.65	5.63	5.64	/	/	0	0
0.63	0.61	5.66	5.68	Cyperaceae	Sedge family	1	1
0.53	0.52	5.76	5.77	/	/	0	0
0.50	0.49	5.79	5.81	*Plantago lanceolata*	Ribwort plantain	1	1
0.47	0.45	5.82	5.84	Poaceae	Grass	1	1
0.44	0.42	5.85	5.87	/	/	0	0
0.40	0.39	5.89	5.90	*Alnus* *Polypodium vulgare*	Alder Polypody fern	1	1
0.37	0.36	5.92	5.93	Poaceae	Grass family	1	1
0.34	0.32	5.95	5.97	*Quercus*	Oak	1	1
0.21	0.19	6.08	6.10	/	/	0	0
-0.31	-0.32	6.60	6.61	/	/	0	0
-0.56	-0.58	6.85	6.87	/	/	0	0
-0.69	-0.71	6.98	7.00	/	/	0	0

Table 13: Pollen-stratigraphic analysis of geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD) From	To	Depth (m from surface) From	To	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (excellent)
2.11	2.10	4.04	4.05	*Corylus* type *Salix*	e.g. Hazel Willow	1	1
2.03	2.02	4.12	4.13	*Salix* Cyperaceae	Willow Sedge family	1	1
1.95	1.94	4.20	4.21	*Alnus*	Alder	1	1
1.87	1.86	4.28	4.29	/	/	0	0
1.79	1.78	4.36	4.37	*Dryopteris* type	e.g. Buckler fern	1	1
1.71	1.70	4.44	4.45	/	/	0	0
1.63	1.62	4.52	4.53	Poaceae	Grass family	1	1
1.55	1.54	4.60	4.61	/	/	0	0
1.51	1.50	4.64	4.65	*Pediastrum* Poaceae	Algae Grass family	1	1
1.47	1.46	4.68	4.69	*Alnus*	Alder	1	1
1.43	1.42	4.72	4.73	*Pinus* Poaceae *Chenopodium* type	Pine Grass family e.g. Fat hen	1	1
1.39	1.38	4.76	4.77	*Alnus* Cyperaceae Poaceae	Alder Sedge family Grass family	1	1
1.31	1.30	4.84	4.85	*Juniperus* Poaceae	Juniper Grass family	1	1
1.23	1.22	4.92	4.93	*Corylus* type Cyperaceae Poaceae	e.g. Hazel Sedge family Grass family	1	1
1.15	1.14	5.00	5.01	/	/	0	0
1.07	1.06	5.08	5.09	Poaceae	Grass family	1	1
0.99	0.98	5.16	5.17	*Pinus*	Pine	1	1
		5.22	5.23	/	/	0	0
0.91	0.90	5.24	5.25	*Salix*	Willow	0	0
0.83	0.82	5.32	5.33	/	/	0	0

0.75	0.74	5.40	5.41	*Pinus* *Quercus*	Pine Oak	1	1
0.67	0.66	5.48	5.49	Cyperaceae	Sedge family	1	1
0.63	0.62	5.52	5.53	/	/	0	0
0.59	0.58	5.56	5.57	/	/	0	0
0.55	0.54	5.60	5.61	/	/	0	0
0.51	0.50	5.64	5.65	Cyperaceae Poaceae *Corylus* type	Sedge family Grass family e.g. Hazel	1	1
0.43	0.42	5.72	5.73	*Alnus* *Quercus* Poaceae	Alder Oak Grass family	1	1
0.35	0.34	5.80	5.81	/	/	0	0
0.27	0.26	5.88	5.89	/	/	0	0
0.19	0.18	5.96	5.97	/	/	0	0

RESULTS AND INTERPRETATION OF THE DIATOM ANALYSIS

Sub-samples were taken from geoarchaeological borehole <3> for analysis of the diatom content. The quality of diatom preservation was variable with the majority of the slides having no or very poor diatom preservation (Tables 14 and 15). Diatoms were present in six of the levels sampled although in low or very low quantities, and with the quality of preservation poor or very poor. On some slides, for example at 0.43 to 0.42m OD, many diatom valves were represented by only small fragments, which show evidence of silica dissolution. With the exception of the slide prepared from the uppermost sample (2.03 to 2.02m OD), where species diversity was moderately high, the number of diatom taxa on each slide is low or very low.

Five of the slides evaluated contain brackish water, estuarine diatoms that indicate tidal environments. The mesohalobous planktonic diatom *Cyclotella striata* is present or common in three samples and was tentatively identified from a dissolved central area fragment at 0.43 to 0.42m OD. However, there are also a number of benthic brackish water species present e.g. *Nitzschia punctata, Nitzschia navicularis* and *Navicula gregaria*. Marine, polyhalobous and polyhalobous to mesohalobous, diatom species are also present on these five slides in addition to the mesohalobous species (no polyhalobous diatoms were recorded at 1.79 to 1.78m OD). Most of the polyhalobous species are planktonic and are allochthonous, outer estuary, or coastal species e.g. *Paralia sulcata, Rhaphoneis* spp., *Cymatosira belgica.* The benthic marine diatom *Nitzschia panduriformis* is present at 2.03 to 2.02m OD. Species recorded from the polyhalobous to mesohalobous salinity group includes the planktonic species *Actinoptychus undulatus* (1.07 to 1.06m OD) and attached or benthic species *Cocconeis scutellum* (1.15 to 1.14m OD) and *Navicula flanatica* (2.03 to 2.02m OD). Again, these diatoms are indicators of tidal conditions.

As is common in many estuarine deposits, freshwater diatoms are mixed with brackish water and allochthonous marine species. In some samples halophilous and oligohalobous indifferent taxa are the most common components of the assemblage (1.79 to 1.78m OD) and in this sample, although one mesohalobe is present, there is no direct indication of connection to the estuary (*Navicula gregaria* is most common in freshwaters with elevated non-marine salt levels and particularly those with high nutrient levels). At 1.79 to 1.78m OD, there are no polyhalobous diatoms or mesohalobous taxa that are confined to environments influenced by marine salinity. The presence of some oligohalobous indifferent *Fragilaria* species that are tolerant of a relatively wide salinity range also reflects the variation in salinity e.g. *Fragilaria construens* var. *venter, Fragilaria pinnata*. For example, *Fragilaria pinnata* was common in the basal sample at 0.43 to 0.42m OD.

Table 14: Diatom analysis for geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)		Depth (m from surface)		Concentration 0 (none) to 4 (abundant)	Preservation 0 (none) to 4 (excellent)	Weight (g)	Assemblage type
2.11	2.10	4.04	4.05	0	0	1.04	
2.03	2.02	4.12	4.13	1	1	1.04	Brackish
1.95	1.94	4.20	4.21	0	0	0.9	
1.87	1.86	4.28	4.29	0	0	0.93	
1.79	1.78	4.36	4.37	1	1	1.01	Halophilous and Freshwater
1.71	1.70	4.44	4.45	0	0	0.86	
1.63	1.62	4.52	4.53	0	0	0.81	
1.55	1.54	4.60	4.61	0	0	1.04	
1.47	1.46	4.68	4.69	0	0	1.05	
1.39	1.38	4.76	4.77	0	0	0.89	
1.31	1.30	4.84	4.85	0	0	1.08	
1.23	1.22	4.92	4.93	1	1	0.94	Brackish, Marine and Freshwater
1.15	1.14	5.00	5.01	1	1	0.98	Brackish and Freshwater
1.07	1.06	5.08	5.09	1	1	1.09	Brackish, Marine and Freshwater
0.99	0.98	5.16	5.17	0	0	1.05	
0.91	0.90	5.24	5.25	0	0	1.07	
0.83	0.82	5.32	5.33	0	0	0.86	
0.75	0.74	5.40	5.41	0	0	0.88	
0.67	0.66	5.48	5.49	0	0	0.7	
0.59	0.58	5.56	5.57	0	0	0.93	
0.51	0.50	5.64	5.65	0	0	0.78	
0.43	0.42	5.72	5.73	1-2	1-2	0.94	Brackish, Marine and Freshwater
0.35	0.34	5.80	5.81	0	0	0.93	
0.27	0.26	5.88	5.89	0	0	0.85	
0.19	0.18	5.96	5.97	0	0	0.72	

Table 15: Diatom ecological information, Lots Road Power Station and land at Thames Avenue, London

Borehole number	3	3	3	3	3	3
Depth (m OD)	2.03 to 2.02	1.79 to 1.78	1.23 to 1.22	1.15 to 1.14	1.07 to 1.06	0.43 to 0.42
Depth (m from surface)	4.12 to 4.13	4.36 to 4.37	4.92 to 4.93	5.00 to 5.01	5.08 to 5.09	5.72 to 5.73
Species and salinity group						
Polyhalobous						
Cymatosira belgica	+					
Nitzschia panduriformis	+					
Paralia sulcata	++		+	+	+	
Rhaphoneis amphiceros			+			
Rhaphoneis minutissima			+			+
Rhaphoneis surirella	+					
Polyhalobous to Mesohalobous						
Actinoptychus undulatus					+	
Cocconies scutellum				+		
Navicula flanatica	+					
Mesohalobous						
Cyclotella striata	++		+		+	cf.
Navicula gregaria		+				
Nitzschia granulata	+			+		
Nitzschia navicularis	+			+		
Mesohalobous to Halophilous						
Cyclotella meneghiniana	+	+	+		cf.	
Oligohalobous Halophilous						
Navicula cincta	+					
Halophilous to Indifferent						
Melosira varians	+					
Oligohalobous Indifferent						
Achnanthes lanceolata		+				
Amphora pediculus					+	
Cocconeis placentula & var. *euglypta*				+		
Cymbella ventricosa	+					
Epithemia sp.				+		
Fragilaria construens var. *venter*		+				
Fragilaria pinnata		+				++
Gomphonema angustatum var. productum	+					
Gomphonema parvulum						+
Navicula seminulum					+	
Opephora martyii	+					
Synedra ulna	+					
Unknown Salinity Group						
Cocconeis sp.		+				+
Coscinodiscus/Thalassiosira sp.					+	
Cyclotella sp.		+				
Diploneis sp.	+					+
Fragilaria sp.			+			
Gyrosigma sp.	+		+			
Navicula sp.	+					+
Nitzschia sp.	+					+

Borehole number	3	3	3	3	3	3
Depth (m OD)	2.03 to 2.02	1.79 to 1.78	1.23 to 1.22	1.15 to 1.14	1.07 to 1.06	0.43 to 0.42
Depth (m from surface)	4.12 to 4.13	4.36 to 4.37	4.92 to 4.93	5.00 to 5.01	5.08 to 5.09	5.72 to 5.73
Species and salinity group						
Unknown Naviculaceae			+	+		+
Unknown diatom fragments					+	+
Unknown centric		+	+	+		+

Key: + present, ++ common

RESULTS AND INTERPRETATION OF THE PLANT MACROFOSSIL ANALYSIS

Geoarchaeological borehole <1> (Table 16)

The preservation and concentration of plant macrofossils, including waterlogged and charred remains, was generally very poor, with less than 25 individual specimens per sample. For this reason, full quantification of the taxa has not been deemed necessary. Those seed taxa recorded indicate a damp environment with species of the sedge and carrot families (*Carex* sp. and Apiaceae) present throughout, as well as rush (*Juncus* sp) and species of the buttercup family (*Ranunculus* sp.). These taxa were probably growing on the floodplain within a grassland community, forming meadow and/or areas of pasture. Drier ground conditions may have supported rough grassland and/or plant communities indicative of disturbed ground, suggested by the presence of fat hen (*Chenopodium album*). The occasional remains of waterlogged wood (not identified) confirm the presence of damp conditions. The presence of charcoal at 1.29m OD was not surprising, given the level of ground disturbance, and probably indicates human deposition of industrial waste on the floodplain surface. The occurrence of charcoal at depths below -0.11m OD was surprising, however, and was probably carried down and embedded in the lower sedimentary units during the geoarchaeological borehole fieldwork.

Geoarchaeological borehole <3> (Table 17)

The preservation and concentration of plant macrofossils, including waterlogged and charred remains, was generally very poor, with less than 25 individual specimens per sample. For this reason, full quantification of the taxa was not deemed necessary. Those seed taxa recorded indicate a damp environment with species of the sedge and carrot families (*Carex* sp. and Apiaceae) present throughout, as well as rush (*Juncus* sp) and species of the buttercup family (*Ranunculus* sp.). These taxa were probably growing on the floodplain within a grassland community, forming meadow and/or areas of pasture. Drier ground conditions may have supported rough grassland and/or plant communities indicative of disturbed

ground, suggested by the presence of fat hen (*Chenopodium album*), species of the Caryophyllaceae (e.g. *Stellaria media* – common chickweed), nettle (*Urtica dioica*) and brambles (*Rubus fruticosus*). The occasional remains of waterlogged wood (not identified) confirm the presence of damp conditions. The presence of charcoal at 0.75m OD was not surprising, given the level of ground disturbance, and probably indicates human deposition of industrial waste on the floodplain surface.

Table 16: Plant macrofossil analysis for geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth (m from surface)	Volume (L)	Fraction	Waterlogged		Charred		Main taxa
				Wood	Seeds	Wood	Seeds	
1.41 to 1.39	4.88 to 4.90	0.05	>300µm	-	-	-	-	/
1.39 to 1.29	4.90 to 5.00	0.1	>300µm	3	1	2	-	Caryophyllaceae; *Chenopodium album; Carex* sp.
1.29 to 1.19	5.00 to 5.10	0.05	>300µm	-	1	-	-	*Carex* sp.
1.19 to 1.08	5.10 to 5.21	0.05	>300µm	2	1	-	-	/
1.08 to 0.98	5.21 to 5.31	0.05	>300µm	1	1	-	-	*Carex* sp.; Apiaceae; *Juncus* sp.; *Ranunculus* sp.
0.98 to 0.89	5.31 to 5.40	0.05	>300µm	1	1	-	-	*Carex* sp.; *Ranunculus* sp.; Apiaceae
0.89 to 0.79	5.40 to 5.50	0.1	>300µm	1	1	-	-	*Carex* sp.; *Ranunculus* sp.; *Chenopodium album*
0.79 to 0.69	5.50 to 5.60	0.02	>300µm	-	1	-	-	*Carex* sp.; Apiaceae
0.69 to 0.58	5.60 to 5.71	0.1	>300µm	3	1	-	-	*Carex* sp.; Apiaceae
0.58 to 0.49	5.71 to 5.81	0.05	>300µm	1	1	-	-	*Carex* sp.; Apiaceae
0.49 to 0.39	5.81 to 5.90	0.02	>300µm	1	1	-	-	Apiaceae; *Carex* sp.; *Ranunculus* sp.
0.39 to 0.29	5.90 to 6.00	0.05	>300µm	-	-	-	-	/
0.29 to 0.19	6.00 to 6.10	0.05	>300µm	1	1	-	-	Apiaceae; *Carex* sp.; *Juncus* sp.
0.19 to 0.08	6.10 to 6.21	0.05	>300µm	-	-	-	-	/
0.08 to -0.02	6.21 to 6.31	0.05	>300µm	-	1	2	-	*Carex* sp.; *Rubus* sp.; *Ranunculus* sp.; Apiaceae
-0.02 to -0.11	6.31 to 6.40	0.05	>300µm	-	-	-	-	/
-0.11 to -0.21	6.40 to 6.50	0.1	>300µm	1	-	1	-	/
-0.21 to -0.31	6.50 to 6.60	0.1	>300µm	1	1	1	-	Apiaceae; *Carex* sp.
-0.31 to -0.42	6.60 to 6.71	0.1	>300µm	1	-	1	-	/
-0.42 to -0.52	6.71 to 6.81	0.05	>300µm	3	-	2	-	/
-0.52 to -0.61	6.81 to 6.90	0.02	>300µm	2	-	-	-	/
-0.61 to -0.71	6.90 to 6.97	0.02	>300µm	1	-	-	-	/

Key:

1 =	1 to 25	2 =	26 to 50	3 =	51 to 75	4 =	76 to 100	5 =	100+

Table 17: Plant macrofossil analysis for geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth (m from surface)	Volume (L)	Fraction	Waterlogged		Charred		Main taxa
				Wood	Seeds	Wood	Seeds	
2.15 to 2.05	4.00 to 4.10	0.1	>300µm	2	-	-	-	/
2.05 to 1.95	4.10 to 4.20	0.1	>300µm	2	1	-	1	Charred: *Hordeum* caryopsis Waterlogged: Apiaceae c.f. *Urtica dioica*
1.95 to 1.85	4.20 to 4.30	0.1	>300µm	-	1	-	-	*Rubus* sp. *Carex* sp.
1.85 to 1.75	4.30 to 4.40	0.15	>300µm	-	-	-	-	/
1.75 to 1.65	4.40 to 4.50	0.15	>300µm	-	-	-	-	/
1.65 to 1.55	4.50 to 4.60	0.1	>300µm	-	-	-	-	/
1.55 to 1.45	4.60 to 4.70	0.1	>300µm	-	-	-	-	/
1.45 to 1.35	4.70 to 4.80	0.15	>300µm	-	-	-	-	/
1.35 to 1.25	4.80 to 4.90	0.125	>300µm	-	1	-	-	Caryophyllaceae *Carex* sp. *Chenopodium album*
1.25 to 1.15	4.90 to 5.00	0.2	>300µm	-	1	-	-	*Carex* sp.; Apiaceae; *Ranunculus* sp.; *Juncus* sp.
1.15 to 1.05	5.00 to 5.10	1.75	>300µm	-	1	-	-	*Carex* sp.
1.05 to 0.95	5.10 to 5.20	0.2	>300µm	-	-	1	-	/
0.95 to 0.85	5.20 to 5.30	0.15	>300µm	1	-	-	-	/
0.85 to 0.75	5.30 to 5.40	0.15	>300µm	1	1	1	-	*Carex* sp.
0.75 to 0.65	5.40 to 5.50	0.2	>300µm	1	1	-	-	*Carex* sp.; *Chenopodium album*
0.65 to 0.55	5.50 to 5.60	0.2	>300µm	-	-	-	-	/
0.55 to 0.45	5.60 to 5.70	0.2	>300µm	1	-	1	-	/
0.45 to 0.35	5.70 to 5.80	0.25	>300µm	-	-	-	-	/
0.35 to 0.25	5.80 to 5.90	0.2	>300µm	-	-	1	-	/
0.25 to 0.15	5.90 to 6.00	0.1	>300µm	-	-	-	-	/

Key:

1 =	1 to 25	2 =	26 to 50	3 =	51 to 75	4 =	76 to 100	5 =	100+

RESULTS AND INTERPRETATION OF THE INSECT ANALYSIS

Geoarchaeological borehole <1> (Table 18)

Unfortunately, insect remains were poorly preserved throughout the sedimentary sequence in geoarchaeological borehole <1>. Between 0.69 to 0.58, 0.49 to 0.39 and 0.29 to 0.19m OD, insect remains were recorded, and all indicate the presence of well-vegetated standing water. In addition, from 0.98 to 0.89, 0.69 to 0.58 and 0.49 to 0.39m OD, the insect taxa indicate the presence of animal dung.

Geoarchaeological borehole <3> (Table 19)

Unfortunately, insect remains were also poorly preserved throughout the sedimentary sequence in geoarchaeological borehole <3>. Only from 1.75 to 1.65 and 0.55 to 0.45m OD were insect remains recorded, and these indicate the presence of well-vegetated standing water.

Table 18: Insect analysis for geoarchaeological borehole <1>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth (m from surface)	Volume (L)	Taxa and ecology
1.41 to 1.39	4.88 to 4.90	0.05	-
1.39 to 1.29	4.90 to 5.00	0.1	-
1.29 to 1.19	5.00 to 5.10	0.05	-
1.19 to 1.08	5.10 to 5.21	0.05	-
1.08 to 0.98	5.21 to 5.31	0.05	-
0.98 to 0.89	5.31 to 5.40	0.05	*Onthophagus* sp. (Dung beetle)
0.89 to 0.79	5.40 to 5.50	0.1	*Pterostichus* sp. (Ground beetle - most species live in mesic habitats) *Harpalus* sp. (Ground beetle - most species live in dry upland habitats) Aleocharinae gen et sp. indet. (Rove beetle group - most species in damp habitats)
0.79 to 0.69	5.50 to 5.60	0.02	-
0.69 to 0.58	5.60 to 5.71	0.1	*Donacia* sp. (Aquatic leaf beetle - most species live in reed swamps) *Aphodius* sp. (Dung beetle)
0.58 to 0.49	5.71 to 5.81	0.05	-
0.49 to 0.39	5.81 to 5.90	0.02	*Helophorus* sp. (Water scavenger beetle - most species in shallow ponds) *Aphodius* sp. (Dung beetle)
0.39 to 0.29	5.90 to 6.00	0.05	-
0.29 to 0.19	6.00 to 6.10	0.05	*Coelostoma orbiculare* (Water scavenger beetle associated with vegetation-clogged standing water)
0.19 to 0.08	6.10 to 6.21	0.05	-
0.08 to -0.02	6.21 to 6.31	0.05	-
-0.02 to -0.11	6.31 to 6.40	0.05	-

-0.11 to -0.21	6.40 to 6.50	0.1	-
-0.21 to -0.31	6.50 to 6.60	0.1	-
-0.31 to -0.42	6.60 to 6.71	0.1	-
-0.42 to -0.52	6.71 to 6.81	0.05	-
-0.52 to -0.61	6.81 to 6.90	0.02	-
-0.61 to -0.71	6.90 to 6.97	0.02	-

Table 19: Insect analysis for geoarchaeological borehole <3>, Lots Road Power Station and land at Thames Avenue, London

Depth (m OD)	Depth (m from surface)	Volume (L)	Taxa and ecology
2.15 to 2.05	4.00 to 4.10	0.1	-
2.05 to 1.95	4.10 to 4.20	0.1	-
1.95 to 1.85	4.20 to 4.30	0.1	-
1.85 to 1.75	4.30 to 4.40	0.15	-
1.75 to 1.65	4.40 to 4.50	0.15	*Coelostoma orbiculare* (Water scavenger beetle associated with vegetation-clogged standing water)
1.65 to 1.55	4.50 to 4.60	0.1	-
1.55 to 1.45	4.60 to 4.70	0.1	-
1.45 to 1.35	4.70 to 4.80	0.15	-
1.35 to 1.25	4.80 to 4.90	0.125	-
1.25 to 1.15	4.90 to 5.00	0.2	-
1.15 to 1.05	5.00 to 5.10	1.75	-
1.05 to 0.95	5.10 to 5.20	0.2	-
0.95 to 0.85	5.20 to 5.30	0.15	-
0.85 to 0.75	5.30 to 5.40	0.15	-
0.75 to 0.65	5.40 to 5.50	0.2	-
0.65 to 0.55	5.50 to 5.60	0.2	-
0.55 to 0.45	5.60 to 5.70	0.2	*Donacia* sp. (Aquatic leaf beetle - most species live in reed swamps)
0.45 to 0.35	5.70 to 5.80	0.25	-
0.35 to 0.25	5.80 to 5.90	0.2	-
0.25 to 0.15	5.90 to 6.00	0.1	-

DISCUSSION AND CONCLUSIONS

The environmental archaeological investigations at Lots Road and land at Thames Avenue have revealed considerable variation in the thickness of alluvial deposits due to truncation associated with successive stages of industrial development. However, both on the north and south sides of Chelsea Creek, the alluvial sediments comprise silts and sandy and clayey silts, sometimes organic-rich, overlying sand and gravel. The fine-grained alluvial sediments were deposited from suspension within a slow moving (low energy) waterbody, and probably on the margins (floodplain) of a river channel(s), during intermittent flood events. Intercalated with the alluvium, thin peat horizons were recorded in geoarchaeological boreholes <1>, <3>, <6> and <7>, with the thickest sequence present in borehole <1>, on the north side of Chelsea Creek.

The peat in geoarchaeological borehole <1> would have formed within a backswamp on the margins of the main river channel(s), and was probably localised rather than forming an extensive peat unit across the entire site. This interpretation is perhaps supported by the absence of contemporaneous peat formation on the south side of Chelsea Creek. Peat formation in geoarchaeological borehole <1> commenced at approximately 910-790 cal BC (2860-2740 cal yr BP; 0.13-0.19m OD) and lasted until 400-350 / 300-210 cal BC (2350-2300 / 2260-2160 cal yr BP; 1.07-1.13m OD), spanning the Late Bronze Age to middle Iron Age. It is difficult to ascertain the precise reason for peat formation during this time, although a rise in ground water levels may have caused localised waterlogging and initiated peat formation in natural, topographic depressions. This interpretation is perhaps supported by the presence of fine-grained mineral matter in the peat, and the broadly contemporaneous alluvial sedimentation on the south side of Chelsea Creek (inferred from the OD heights), which suggests continued flooding of the river margin. It remains unclear whether the postulated higher water levels and flooding were due to localised factors, such as human activity in the river catchment (e.g. woodland clearance, accelerated erosion and increased floodplain sedimentation rates), or a regional phenomenon, such as an increase in the height of relative sea level. The latter seems possible given the evidence for sea level rise in the lower reaches of the Thames valley at this time (Devoy, 1979, 1982; Haggart, 1995; Thomas and Rackham, 1996; Sidell *et al.*, 2000; Sidell, 2003).

In contrast, peat formation did not commence in geoarchaeological borehole <3> until approximately 420-610 AD (1520-1340 cal yr BP; 0.61-0.63m OD) and lasted only a relatively short period until 430-640 AD (1520-1320 cal yr BP; 1.50-1.47m OD), during the Anglo-Saxon period. This phase of rapid peat accumulation occurred during an extended period of alluvial sedimentation, which was consistent across the site (inferred from the OD heights). The tidal nature of the alluvial sediments is indicated by the presence of allochthonous marine diatoms and mesohalobous, estuarine diatoms. However, at 1.78m OD, a change in the nature of the environment is suggested by the diatom assemblage, which is comprised mainly of freshwater and halophilous diatoms, and the mesohalobous species present is common in freshwaters. However, oligohalobous indifferent and halophilous non-planktonic diatoms reflect the wide salinity range of the depositional environment at Lots Road.

Unfortunately, due to the poor preservation and low concentration of bioarchaeological remains, namely pollen, plant macrofossils, insects and diatoms, little can be stated about the nature of the vegetation cover and general environmental conditions of the site, other than stated above. The pollen, plant macrofossils and insects all indicate the presence of

damp ground including standing water, which is suggested by the presence of alder and willow, and rushes and sedges, and aquatic beetles, and is consistent with the sedimentary records. The nearby dry ground may have supported oak woodland and hazel shrubland, and there is evidence of disturbed ground conditions (ribwort plantain). However, because of the poor preservation, there is no direct evidence from the proxy records for human impact on the natural environment from the Late Bronze Age to the Anglo Saxon period, and possibly later. The presence of dung beetles above 0.39m OD (geoarchaeological borehole <1>) does provide evidence for herbivore activity, which may indicate possible grazing by domesticated animals on the floodplain surface during the Late Bronze Age, but this interpretation is rather speculative. This is disappointing because other studies in the middle and lower Thames valley have provided unequivocal evidence for human interference in natural vegetation succession caused by woodland clearance (e.g. lime), cultivation and animal husbandry (e.g. Thomas and Rackham, 1996; Sidell *et al.*, 2000).

Due to the poor preservation of sub-fossil biological remains, no further analysis of the sedimentary sequences at Lots Road is recommended. Further analysis would not permit an accurate reconstruction of the environmental history or a precise assessment of the timing and nature of human impact on the natural environment. However, it is recommended that the results of the geoarchaeological (sedimentary) study and the radiocarbon dating be submitted to a local journal, namely *London Archaeologist*, for publication because they provide an interesting record of the sedimentary history in this part of London and in an area where little is known about the environmental history.

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Planning and Borough Development
Kensington Town Hall, Hornton Street, LONDON, W8 7NX

Executive Director Planning and Borough Development
Mr David Prout

THE ROYAL BOROUGH OF
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AND CHELSEA

DP9 Planning Consultants,
100 Pall Mall
London
SW1Y 5NQ

My Ref: DPS/DC/CON/02 /01324/ad
/Q27

UPRN:
Please ask for: South Area Team

Dear Sir/Madam,

Date: 19/12/2008

TOWN AND COUNTRY PLANNING ACT 1990
TOWN AND COUNTRY PLANNING
(GENERAL DEVELOPMENT PROCEDURE) ORDER 1995
DISCHARGE OF CONDITION(S)

The Borough Council hereby discharges the condition(s) referred to in the under-mentioned schedule and in accordance with the plans submitted.

SCHEDULE

DEVELOPMENT:	Partial discharge of condition 25 of planning permission dated 30.01.2006 which relates to details of programme of archaeological work
SITE ADDRESS:	**Lots Road Power Station and Chelsea Creek, London, SW10**
RBK&C Drawing Nos:	CON/02/01324/ad
Applicant's Drawing Nos:	Lots Road Power Station and Land at Thames Avenue, London, SW10: Environmental Archaeological Investigations prepared by ArchaeoScape (2008)
Application Dated:	10/11/2008
Application Completed:	11/11/2008
Informative:	To fully discharge this condition, the applicant is required to submit a Historic Building Recording Report to the Council (and English Heritage) and receive written approval from the Executive Director, Planning and Borough Development.

Yours faithfully,

David Prout
Executive Director, Planning and Borough Development
Direct Line 020 7361-2699
Email: Planning@rbkc.gov.uk
Fax 020 7361-3463
Web: www.rbkc.gov.uk/planning

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Date 20/11/2008

My Ref /CON/02/01324

Please ask for: Ms D. Silver

Dear Sir/Madam

TOWN AND COUNTRY PLANNING ACT 1990
Application for Discharge of Condition at: Lots Road Power Station and Chelsea Creek, London, SW10
Proposal: Details of programme of archaeological work submitted in compliance with condition 25 of planning permission dated 30.01.2006

Dated: 10/11/2008 Complete: 11/11/2008 Decision due by: 06/01/2009
Fee Received: £85.00

I acknowledge receipt of your application for discharge of conditions. The name and telephone number of the officer dealing with your application are printed at the top of this letter. Should further information or clarification on any points be required, the case officer will contact you directly.

You are reminded that it may be unlawful to begin the development that is the subject of this application prior to the issue of a written permission from the Council formally discharging the conditions, and you are strongly advised against so doing.

Yours faithfully

David Prout

DAVID PROUT
Executive Director, Planning and Borough Development