Silvertown Quays
Newham
London

Archaeological Watching Brief Report

Oxford Archaeology

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ARCHAEOLOGICAL WATCHING BRIEF REPORT

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SUMMARY

In October and November 2003 Oxford Archaeology (OA) carried out an archaeological watching brief during the excavation of 124 geotechnical test pits at Silvertown Quays, Newham, London (NGR: TQ 4120 8025). The work was commissioned by Soil Mechanics in advance of redevelopment of the site for residential and recreational use. The watching brief revealed extensive areas of made ground relating to the construction, use and recent partial demolition of the Royal Victoria Docks and associated structures. Although there were no medieval or prehistoric cultural remains identified during the watching brief, undisturbed peat and alluvial deposits were encountered. These latter were deposited as a result of a complex sequence of marine transgressions and regressions from the early Holocene and possibly dating into the medieval period when the estuarine marshes were first reclaimed for agriculture.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 Between 13th October and 6th November 2003 Oxford Archaeology (OA) carried out an archaeological watching brief at Silvertown Quays, Newham, London (Fig.1). The work was commissioned by Soil Mechanics in respect of a proposal for redevelopment of the Silvertown Quays for residential dwellings and a recreational area.

1.1.2 A project specification was produced by Richard Hughes, archaeological consultant for Ove Arup in agreement with The Greater London Archaeology Advisory Service (GLAAS) requiring an archaeological watching brief to be undertaken during this phase of geotechnical investigations in order to monitor and record any archaeological remains exposed during the excavation of the geotechnical test pits.

1.1.3 OA prepared a Written Scheme of Investigation detailing how it would undertake the watching brief in line with the specification produced by Ove Arups. In addition to observations during the excavation of the test-pits this report includes data recovered by geotechnical boreholes.

1.2 Geology and topography

1.2.1 The site lies on the north bank of the River Thames and covers an area of approximately 16.3 hectares, of which 3.9 hectares is occupied by the Pontoon Dock. The site is bounded to the south by the North Woolwich Road, to the east by Connaught Bridge, to the west by Mills Road and to the north by the Royal Victoria Dock (NGR: TQ 4120 8025).

1.2.2 The majority of the site is currently unoccupied and most of the buildings present have been demolished leaving only hard standing. The remaining buildings will be incorporated into the redevelopment.

1.2.3 The site is low lying and level at a height between approximately 4.2 m and 6.8 m OD. The underlying geology is alluvial clays overlying gravel terraces.

1.3 Geoarchaeological background

1.3.1 In order to understand the potential for the survival and distribution of archaeological remains it is important to understand the changing nature of the Thames system over time. Deposition in the Thames Valley began in the late Anglian stage (circa 500,000 yr. BP) and continued intermittently throughout the Pleistocene (Gibbard 1994; Bridgland 1994; 1995; Bridgland *et al* 1995). Sediments, deposited in cold climate braided steam systems, exist as wedges of sand and gravel on the valley sides, subsequently eroded by fluvial incision during periods of lowered sea level to create terraces. The most recent episodes of gravel deposition formed the Shepperton gravels in the valley bottom.

1.3.2 The surface of the valley bottom gravels formed the 'template' on which alluvial and estuarine sedimentation occurred later, during the Holocene. In contrast to the relatively well known sequences of the Pleistocene, the nature of the Holocene sediments deposited during the last 12,000 years are not well understood and have only, with few exceptions, been described superficially (Bates 1999). The landscape during this period saw a number of changes, largely attributed to a rise in sea level caused by the continued shrinking of the polar ice caps and tectonic subsidence. The Holocene sediments form a wedge thickening downstream, from less than 2 m at Tower Bridge to a maximum thickness of 35 m east of the study area at Canvey Island (Marsland 1986).

1.3.3 Within the inner estuary Holocene sediments consist of complex sequences of minerogenic and organic clay, silts, sands and peats, deposited in a variety of environments representing variously alder carr, fen, reedswamp, inter-tidal saltmarsh and mudflats. The currently adopted stratigraphic sequence for the Lower Thames is based on work undertaken by Devoy (1979; 1980). Borehole stratigraphies were integrated with biostratigraphic studies to infer successive phases of marine transgressions (Thames 1-V) represented by clay/silt units and regressions (Tilbury 1-V) represented by peat units. Devoy constructed two age-altitude curves of relative sea level movement, one for Tilbury (outer estuary) and one for Crossness, Dartford and Broadness (inner estuary). The model suggests that transgressions occurred in the Palaeolithic/early Mesolithic periods, the late Mesolithic/early Neolithic periods, throughout the Bronze Age, in the middle Iron Age and at the beginning of the 4th century AD (Devoy 1980).

1.3.4 The 'Thames-Tilbury' model is regarded as the seminal work in this area (Haggart 1995) and has been widely applied by researchers outside the original study area in the absence of regional models. However, recent work (Haggert 1995 in Sidell *et al* 2000:16) has highlighted several problems, such as the need for two age/altitude curves, suggesting it cannot always be easily applied to the whole of the Thames Estuary, both in terms of lithology and age/altitude analysis (Sidell *et al* 2000:16). Recent work has been aimed at constructing regional models for estuary

development (Long *et al* 2000; Bates and Whittaker, in press), which begin to address the range of factors responsible for sequence accumulation.

1.3.5 In conclusion, former landsurfaces (peat and organic deposits) on the Thames floodplain have been buried, and protected, within a succession of alluvial deposits (minerogenic silts on top of the alluvium clays). The deposition of these sediments has occurred over a period of thousands of years. Evidence of early prehistoric activity could potentially be located at the base of the alluvium and cut into the underlying geology. Later prehistoric, Roman and medieval activity is likely to be located progressively higher up in the alluvial sequence, with possible medieval and post-medieval activity at the top of the alluvium.

1.4 Archaeological and historical background

1.4.1 The Museum of London Archaeology Service produced an Archaeological Desk Based Assessment of the development site for the London Borough of Newham (MoLAS 2000) and the Arup Group have produced a geotechnical desk study (Arup 2002). The following is a concise summary of this archaeological background.

1.4.2 The desk-based assessment (DBA) concluded that it is unlikely that 'in situ' remains of Palaeolithic date will be present on this site. However, re-deposited finds may be present within the underlying Shepperton gravels of later archaeological deposits.

1.4.3 There is reasonable potential for the deposits of Mesolithic date situated upon the gravel 'eyots' that formed the basis of the early topography of the Thames. These may include temporary occupation sites, flint working area and butchery sites. The desk-based assessment also concluded that there could be also limited potential for isolated waterlogged remains within the river channels.

1.4.4 Recent excavations in east London, principally by the former Newham Museum Service have produced evidence for Neolithic occupation in this area. Neolithic remains are most likely to be associated with the top of gravel 'eyots'. There is also the potential for the recovery of palaeo-environmental remains from the surrounding peat deposits including pollen and waterlogged organic remains. The Brookway site in Rainham produced flintwork and pottery while at Fort Street, Silvertown a trackway constructed of planks anchored with vertical posts was excavated. To the north of the site a buried soil horizon dating from the Neolithic and Bronze Age periods has been identified.

1.4.5 Evidence for Bronze Age activity within the area include a trackway approximately 100 m west of the site, a bronze palstave axe from the Royal Victoria Docks and several trackway sites at Beckton, Rainham and Bermondsey. A wattle enclosure fence was found at Rainham nearby and a large quantity of prehistoric metal work has been found during the dredging of the River Thames. It is also likely that any areas that may have been under water during this period could have been used to deposit 'votive' offerings such as the Bronze Age sword found during the construction of the Royal Albert Docks.

1.4.6 No direct evidence for Iron Age occupation of the site has been found although Rainham and Ilford to the east have produced hillforts and settlements dating to this period. Evidence for Roman activity includes a dug out canoe, discovered in an old stream channel during construction of the Royal Albert Docks to the east of the site and a potential Roman road running north-south through the area connecting Stratford to Ham Creek.

1.4.7 By the end of the Anglo-Saxon period much of the floodplain of East London was marshland due to the rising level of the Thames. In the early 12th century, the medieval site of Sudbury Manor was founded and is located to the north of the site. In the 14th and 15th centuries, after the Plaistow levels had been reclaimed by Stratford and Barking abbeys, this area was abandoned as the increasing level of the Thames caused severe flooding.

1.4.8 In the post-medieval period the site became a zone for industrial expansion as trade and commerce through Britain's shipping companies increased. The Chapman and Andre map of 1777 shows the area of the site to be uninhabited marshland, however, by the time of the Ordnance Survey map of 1893 great changes had occurred. The greatest was the construction of the Royal Victoria Dock, constructed between 1850 and 1855 in direct response to this growing commercial pressure. The present site itself was related to the Royal Victoria Dock and functioned as a graving dock, which would have been used to raise ships for cleaning, scraping, burning and covering in tar.

1.4.9 During the mid 19th century an increasing number of buildings were constructed on the site. These were likely to have been piled to support their substantial weight over what was predominantly alluvial drift geology. These buildings were noted in the 1862 and 1894 maps of the site as oil and petroleum stores, Iron Works, Joiners' and Fitters' shops, a Smith's shop, an Engine House and warehouses and in some areas of the site there are known to have been up to three phases of different buildings.

1.4.10 In 1905-07 the Premier and Millennium Mills were built and still partially exist today. These were shown on the 1914 map of the site and includes a significant complex of buildings, three cranes along the edge of the entrance to the Pontoon Dock (formerly named the Graving Dock) and a rail system.

1.4.11 Much of the area was badly damaged in 1917 when 50 tons of TNT ignited at the chemical works to the south. During the Second World War, London's docks were a strategic target and were regularly bombed by German aircraft. On one episode alone, bombing of the docks was continuous over a twenty-four hour period with hundreds of lives lost and buildings completely destroyed. Subsequent backfilling of bomb craters and reconstruction on site has meant that there are extensive areas of made ground, although the extensive excavations of the marshland to construct the Royal Victoria Docks in the 1850s would have had a substantial negative effect on the survival of any medieval or earlier remains.

2 PROJECT AIMS

2.1.1 To establish the presence or absence of archaeological remains within the development area. Particular attention will be paid to identifying and recording any *in-situ* remains from the prehistoric period. The presence of organic features surviving within the vicinity of the site would indicate that the potential for the survival of such remains within the development site is high.

2.1.2 To determine the extent, condition, nature, character, quality, date and depth below ground surface of any archaeological remains present.

2.1.3 To establish the ecofactual and environmental potential of archaeological deposits and features.

2.1.4 To establish the nature and extent of existing disturbance and intrusion on the site and assess the degree of archaeological survival of all buried deposits and surviving structures of archaeological significance.

3 METHODOLOGY

3.1.1 The work consisted of the monitoring and recording of 124 test pits located at specific surveyed points within the development area. (Fig. 2). Test pits were excavated using a mechanical excavator (JCB) fitted with a 0.8 m toothed bucket. The pits were excavated in spits down to the depth required by the Soil Mechanics Geologist.

3.1.2 Soil samples were intended to be taken during the watching brief but due to health and safety restrictions this was not possible. However, core samples taken by Soil Mechanics of individual testpits and boreholes for the potential for palaeo-environmental and lithostratigraphic analysis have been examined (see section 4.3).

3.1.3 All monitored pits were photographed using colour slide and black and white print film. A general photographic record of the work was also made.

3.1.4 The location and level of each test pit was surveyed in by Soil Mechanics.

3.1.5 Site procedures were undertaken in accordance with the established OA *Field Manual* (OAU 1992) and the *Archaeological Guidance Papers* issued by the Greater London Archaeology Advisory Service and English Heritage, in particular Guidance Paper 3, *Standards and Practices in Archaeological Fieldwork in London* and Guidance Paper 5, *Evaluations*.

4 RESULTS

4.1 Description of deposits

4.1.1 All the test pits encountered layers of made ground of varying depths. The depth of these test pits and the made ground encountered were such that only 52 out of the total of 124 test pits reached deposits of medieval and prehistoric potential (i.e. alluvium/peat). Nevertheless, borehole evidence (shown in figure 2) demonstrates that in those areas where only made ground was recorded within test-pits, alluvial and peat deposits often exist at a greater depth.

4.1.2 The made ground deposits are likely to be associated with the construction of the Royal Victoria Dock, although the nature of the finds within these deposits made it very difficult to distinguish between modern and 19th century infill.

4.1.3 In the remainder of the test pits the deposits exposed below the made ground were almost exclusively alluvial in nature interspersed with layers of peat, which had the potential to contain evidence of at least Iron Age through to Mesolithic remains.

4.1.4 Following identification of the various disturbed and *in situ* deposits across the site, it is possible to illustrate this variation. The test pits and boreholes have therefore been divided into three categories (Fig. 2):

- a) Test pits and boreholes containing solely made ground, distributed in a broad band around the Royal Victoria Dock. These have a fair potential to contain remains associated with the construction of the docks and later phases. Medieval and earlier archaeology may have been disturbed, although gravel deposits were not encountered

- b) Test pits and boreholes containing both made ground and alluvial deposits, but unclear whether the alluvial deposits are *in situ* or redeposited, suggesting potential for both post-medieval and earlier archaeology.

- c) Test pits and boreholes containing *in situ* alluvial and peat deposits suggesting good potential for survival of medieval and prehistoric remains and palaeo-environmental information. These were concentrated in the south-west quadrant of the site with the remainder occurring along the western and north-western limits of the development area.

Type A

4.1.5 These contain substantial deposits of upcast material, typically a mixture of sands, gravels and clays interspersed with numerous fragments of brick, stone, coal and ash varying in depth from 0.7 m up to over 2.5 m. This was usually capped with a layer of demolition rubble/building debris between 0.4 m to 0.6 m deep overlying which was the present day road and yard surfaces.

Type B

4.1.6 These contain deposits of clay, (usually containing evidence of hydrocarbon contamination) and fragments of abraded brick and coal, ranging in depth from between 0.5 m and 2.5 m. The nature of the deposits and the inability to closely examine the section within the test pits for safety reasons meant that it was impossible to determine whether they were deposited *in situ* or possibly redeposited. These were overlain by layers of mixed sands, gravels and clay varying in depth from 0.7 m to 2.8 m, again probably representing upcast material. These deposits were then sealed by the existing hard standing.

Type C

4.1.7 The base of the section of these pits occasionally exposed up to 0.2 m of a grey subangular flint gravel, part of the underlying natural terrace gravel. This was sealed by bands of grey alluvial clay containing a percentage of coarse sand measuring between 0.5 m and 2.3 m in depth. These were then overlain by layers of dark grey alluvial clay with occasional lenses of a fibrous brown peat, these layers ranged from between 0.6 m and 2.0 m in depth. In a number of the test pits this was then sealed by a layer of black organic clayey peat up to 1.5 m in depth (TP A1-3, A5, C8, C17-18, C28, C31 and D2). As in the *Type b* pits the lower deposits were overlain by substantial layers of made ground consisting of upcast material up to 3.0 m in depth, capped by the present day surfaces.

4.2 Finds

4.2.1 The only finds encountered came exclusively from made ground observed during the test pitting. These included modern glass, brick, mortar and rusted metal objects of 19th and early 20th century date. The finds were noted but were not retained. No artifacts were observed within the alluvial or peat deposits as excavated or from an examination of the cores.

4.3 Palaeo-environmental remains

4.3.1 No samples specifically for palaeo-environmental analysis were taken during the archaeological watching brief on the test pits due to very poor ground conditions and safety restrictions. However, OA examining 108 samples, taken by Soil Mechanics, at their storage facilities in Wokingham between 1st and 2nd March 2004. The samples derive from boreholes and testpits excavated during the geotechnical ground investigation carried out by Soil Mechanics at Silvertown Quays. The purpose of the visit was to ascertain how many samples have been retained by Soil Mechanics and assess their suitability for palaeo-environmental analysis. Brief lithological descriptions were also made.

4.3.2 The samples examined are listed in Table 1. All derive essentially from Holocene alluvial deposits preserved beneath the extensive deposits of made-ground at the site. Samples were retained for possible further study from 15 boreholes and 4 test pits. The sample type varied greatly in terms of depth resolution and consisted of:

- Disturbed samples - usually covering 0.05m of sediment from the borehole 'cutting shoe' (approx.100-200g)
- SPT samples = covering 0.5-1.0m of sediment (approx. 100-200g)
- Extruded Piston samples = disturbed core samples
- U100 cores - intact 10cm diameter cores through 0.45m sediment
- Bulk samples - usually through 0.50m of sediment (5-10Litres).

4.3.3 The alluvial deposits examined are typical of those previously investigated by OA and other workers on the Thames floodplain in East London. They vary between minerogenic silt clays, organic silt clays and peats. The deposits are clearly waterlogged and it is very likely pollen will be preserved to varying degrees throughout the sequences. Preservation of plant remains and insects may be quite variable and is often quite low in the minerogenic clays and silt, and variable in the peat. The peat did show some variation in the degree of humification through the sequences, occurring as a black very well humified peat with few visible plant remains in some deposits, and as reddish brown woody peat in others. In addition the organic silt-clays often preserve plant remains and insects well, and there is some potential for the preservation of ostracods and formainifera in the minerogenic deposits

4.3.4 The distribution of samples across the site and through the sequence however was quite limited, with only parts of sequences having suitable samples retained. The reason for this is that the primary purpose of the sampling was for soil testing rather than palaeo-environmental work. In addition, the samples covering more than 10cm in depth of sediment (Bulk samples, SPT samples) are really not ideal for environmental work, especially pollen, which is usually sampled over an interval of 1-2cm. The U100 cores and 'cutting shoe' samples are the most useful albeit small. All but one of the U100 cores however had been partially extruded for soil testing by Soil Mechanics leaving anywhere between 5-30cm of sediment remaining in the core. The remaining core sediment was extruded during the visit and after examination was repacked in such a way that it could be adequately stored if needed for future environmental work.

Table 1. Samples examined for environmental/geoarchaeological potential

BH/TP	Disturbed samples		U100		Piston samples	Bulk samples	
No.	Sample no.	depth	Sample no.	depth	sample/depth	Sample no.	depth
2C	D11/12	3.50	U10 (35cm)	3.10-3.45		B18	4.50-5.00
	D14/17	4.50	U19 (10cm)	5.35-5.45		B28	6.50-7.00
	D20/22	5.50	U23 (40cm)	6.05-6.45		B34	7.50-8.00
	D24/25/27	6.50	U29 (14cm)	7.31-7.45			
	D30/D31	7.50					
3C	D5/6	6.20	U3E (28cm)	5.5-5.95		B7	6.20-6.70
	D10	7.2	U9 (35cm)	6.70-7.15		B13	7.40-7.90
	D11/12	7.4					
5C	D17	6.50	U22E (40cm)	7.25-7.65		B21	7.20-6.70
	D19/20	6.70	U27 (35cm)	8.60-8.95		B26	7.80-8.40
	D24/25	7.90					
	D28/29	9.00					
6V	D9	5.35	U8E (45cm)	4.90-5.35	P6 4.20-4.4		4.2
					P7 4.40-4.90		4.4
6AV					P10 4.20-4.70		
					P11 4.70-5.20		
					P12 5.20-6.20		
					P13 6.20-7.20		
					P14 7.20-8.10		
					P15 8.10-8.55		
7LC	D10	4.00-4.45	U11E broken up	4.50-4.95		B19	6.50-7.00
	D12	4.95	U15E broken up	5.50-5.95			
	D16	5.95	U20E broken up	6.50-7.00			
	D21	7.45					
9T			U24F (8cm)	8.87-8.95		B23	8.00-8.50
10T	D2	6.45	U11 (22cm)	7.23-7.45		B15	8.50-9.00
	D5	8.45	U13 (30cm)	8.15-8.45			
11T	D25	7.45	U26 (36cm)	8.09-8.45			
	D27	8.45					
BH/TP	**Disturbed samples**		**U100**		**Piston samples**	**Bulk samples**	
No.	Sample no.	depth	Sample no.	depth	sample/depth	Sample no.	depth
C13	D21	5.50-5.95	U19E (40cm)	5.05-5.45			
	D22	5.50-5.60	U23 (18cm)	6.27-6.45			
	D28	9.00					
15LC	D10	3.45	U13E (12cm)	4.33-4.45			
	D11	3.50-3.95	U21E (17cm)	6.27-6.45			
	D15	4.50-4.95					
	D18	5.45					
	D19	5.50-5.95					
	D23	6.61-6.95					
16LC			U7 (12cm)	3.83-3.95		B	4.50-5.00
						B	6.50-6.95
17V						B	4.00-4.70
18LC	D7	2.50-2.95	U3 (15cm)	1.80-1.95	P1 2.00-2.80		
					P2 3.00-3.80		
21LC	D7	3.30					
	D9	4.0				B5	2.00
M2H	D3	1.50					
	D4	1.8				B4	1.90
	D7	1.90				B6	3.05
M19M	D5	2.55				B8	4.30
	D7	3.60				B5	1.80
M28M	D7	2.40				B9	4.00
						B2	1.20
M32M	D3	1.60				B4	2.10
	D5	2.60					

5 DISCUSSION

5.1.1 This section reviews the success of the watching brief in addressing the original fieldwork aims, and the potential for further fieldwork and analysis to provide additional information

5.1.2 Substantial deposits of made ground exist throughout the site, particularly towards the central and western extent of the site. In 72 of the 124 test pits the base of made ground was not encountered and no *in situ* alluvial deposits were exposed.

5.1.3 Where identified the demolition/made ground deposits were largely undifferentiated and difficult to relate to specific episodes in the history of the docks. In places, specifically to the SE and SW deposits probably relate to the twentieth century in-filling within the finger docks. Elsewhere gravel and clay deposits may relate to the original arisings and make -up for the dock construction (although many of these deposits could be secondary or tertiary re-deposition). Across many areas the large amounts of concrete and other building materials speak of various phases of demolition.

5.1.4 Very little in the way of substantive structural remains was encountered in any of the test-pits except where these were located specifically to investigate the existence of earlier dock walls. In general these were simple braced concrete structures although they did confirm in places the line of the in-filled finger docks.

5.1.5 A concrete structure revealed in test-pit MM4 may be associated with the demolished Millennium Mills and other building remains were identified close by in Test-pits TPA4, M15H, and TPA7. To the south in the area of the former timber yards large timbers were recorded TPB7A).

5.1.6 The watching brief however cannot be considered to be wholly reliable in terms of the date, nature and distribution of archaeological remains identified. Archaeological visibility was severely restricted by the limited depth of the testpits and extent of made-ground in some areas. The method of excavation, employing a toothed bucket fitted to the mechanical excavator, together with limited access due to safety restrictions and high groundwater levels, greatly inhibited examination of deeper deposits. Subsequently, there is a possibility that archaeological remains, such as piles used to construct many of the 19th century buildings or the cranes shown in the 1914 map of the site, may still survive in or deeply buried beneath deposits of made ground.

5.1.7 Undisturbed alluvial and peat deposits were exposed in several of the testpits (TPA1, TPA2, TPA3, TPA5, TPC8, TPC17, TPC18, TPC28, TPC31, and TPD2). Additional data from the borehole survey however indicates these deposits to be much more extensive across the site, preserved beneath deep deposits of made ground (Table 1). Initial examination of the borehole logs and the samples retained by Soil Mechanics suggests some variability within the sequences both in terms of lithology and elevation. The deposits consist of intercalating minerogenic silt-clays, organic silt-

clays and peat. In some places, major peat units are present measuring up to 3.50m in thickness.

5.1.8 It is likely that part of these sequences, particularly the peat units, date to the prehistoric period, although it is unwise at this stage to make comparisons with the Thames-Tilbury model based on stratigraphy and elevation alone in the absence of radiocarbon dating (Section 1.3.4). Work undertaken very close by at the WSUV site (Wilkinson et al 2000) however identified organic channel deposits overlying the Pleistocene gravel radiocarbon dated to the Early Holocene, and later peat accumulations from the Early Neolithic and through the Bronze Age. The sequence was generally capped by minerogenic silt clays of Iron Age, Roman and historic date.

5.1.9 No cultural remains dating to the prehistoric period were identified during the watching brief on the testpits. This however should not be considered to be wholly reliable due to the limitations of the watching brief. The peat deposits may represent periods of drier conditions at the site and should be considered a significant horizon for identifying evidence for past human activity at a time when the floodplain may have been more accessible to local communities. Marginal locations, for example the edge of the gravel terrace, marshy ground or the edge of a channel, are considered to be a focus for past human activity due to the abundance of natural resources. Many of the prehistoric remains identified on the Thames marshes in the past take the form of wooden structures or track ways, preserved in waterlogged conditions, leading from the higher dry ground of the gravel terrace onto the floodplain. Although these discoveries are by no means common place they often occur on the surface or within peat deposits possibly connecting islands of higher drier ground within the floodplain. Such islands may now lie deeply buried by later deposition of alluvial deposits. Archaeological deposits that may be present, deeply buried have the potential for excellent preservation due to waterlogged conditions.

5.1.10 In terms of palaeoenvironmental data, the peat and alluvial deposits have the potential to contain information on local and regional environmental change in the Holocene, in terms of vegetation and fauna, climate/sea-level change. It would be expected that preservation of pollen, diatoms, plant macro-remains, insects, ostracods would be sufficiently preserved to allow such reconstruction The limited distribution of samples however retrieved during this investigation have potential to give only an indication of preservations levels within various units and a very broad indication of environmental conditions. The organic deposits would however provide material for a precise chronological framework to be built in terms of absolute dating.

5.1.11 Further work to investigate the archaeological and environmental potential of this site could include the production of a site-wide three-dimensional deposit model based on current borehole/testpit data, possibly coupled with limited radiocarbon dating. The results could be used as a framework within which the Pleistocene/Holocene topography and the natural and human environment of the development area could be understood.

6 CONCLUSIONS

6.1.1 The distribution of the pits containing disturbed deposits around the Royal Victoria Dock and the Pontoon Dock suggests that evidence of the construction of the docks in the 1850s survives in the form of made ground deposits, although as yet it is difficult to differentiate this from deposits representing later demolition and infilling episodes. The only areas that can be confirmed as having modern infilling undertaken are the finger docks, of which the latest of these filling episodes was in 1995. Although 72 pits did not reach natural deposits, the results from the borehole information indicate that peat and alluvium is very extensive across most of the site.

6.1.2 While the construction of the docks in the mid 19th century may have removed remains dating from the medieval to prehistoric periods, this cannot be confirmed until the gravel terraces are encountered. The top of these represents the lowest point at which archaeological features and deposits, except Paleolithic material, could occur.

6.1.3 The pits located in the south-eastern area of the site (*Type c*), which contained extensive alluvial and peat deposits, indicate good archaeological potential for the survival of evidence for past human settlement and activity, dating from the prehistoric and historic periods.

6.1.4 By plotting the test pit and borehole results onto a plan of the area, the distribution of less disturbed areas can be identified and areas with a likelihood for greater archaeological potential highlighted and prioritized for further archaeological work.

6.1.5 Ground extending for approximately 100 m to the south, west and east of the Victoria and Pontoon Docks and the north-east quadrant of the development area can be considered to have potential to contain disturbed post-medieval remains associated with the construction of the docks due to the depth of made ground, although subsequent development and damage to the docks during later periods would suggest that this evidence will be only encountered at the lowest level of the made ground.

6.1.6 With regard to further work, a selection of samples already collected as part of the geotechnical coring could be assessed for preservation levels of pollen, plant remains, ostracods etc. However, the limited distribution of suitable samples would not provide a great deal of additional information in terms of environmental change through the sequences to allow their significance to be fully established. Limited radiocarbon dating could be undertaken to establish a general chronology for the major sediment units such as the top and bottom of various peat units. Some of the samples examined, particularly from the peat deposits did contain round wood fragments that could be dated. Alternatively the sediment itself could be dated. This may help to establish the potential of the deposits to provide an environmental sequence. Boreholes 15LC, 5C, 2C, 10T contained the thickest sequences of *in situ* deposits with the best selection of samples. If the sequences cover a significant period of time, or if any parts of the sequence were unusually early, they could be considered to be significant and may warrant further investigation.

6.1.7 The watching brief archive will be deposited with the Museum of London.

APPENDICES

APPENDIX 1 CONTEXT INVENTORY

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
TPA1		1	Friable brown sandy clay. Frequent flint gravel. Concrete and brick inclusions	0 - 1.00	Made ground
		2	Grey concrete	1.00 - 1.20	Surface
		3	Course sand	1.20 - 1.40	Made ground
		4	Firm brown clayey peat. Occasional wood fragments	1.40 - 2.90	Peat
		5	Soft grey clay	2.90 - 4.00	Alluvium
TPA2	5.01	11	Concrete	0 - 0.20	Surface
		12	Mid brownish grey gravelly sand	0.20 - 0.85	Made ground
		13	Tenacious brown clay. Frequent flint gravel. Some ash	0.85 - 1.10	Made ground
		14	Firm brown clayey peat. Occasional wood fragments	1.10 - 2.70	Peat
		15	Soft grey clay	2.70 - 4.30	Alluvium
TPA3	5.11	21	Concrete	0 - 0.20	Surface
		22	Orangey black gravelly sand. Brick and coal inclusions	0.20 - 0.85	Made ground
		23	Black gravelly sand. Occasional pieces of coal and wood	0.85 - 1.70	Made ground
		24	Black clayey peat	1.70 - 1.75	Peat
TPA4	5.21	31	Tarmac	0 - 0.15	Tarmac
		32	Brown gravelly sand. Occasional concrete, tarmac and brick inclusions	0.15 - 0.60	Made ground
		33	Soft gravelly clay	0.60 - 1.60	Made ground
		34	Soft light grey silty clay. Lenses of brown fibrous peat	1.60 - 3.50	Alluvium
TPA5	5.14	41	Concrete	0 - 0.20	Surface
		42	Orangey grey gravelly sand. Brick and concrete inclusions	0.20 - 0.70	Made ground
		43	Dark grey gravelly clay. Coal and clinker inclusions	0.70 - 2.00	Made ground
		44	Dark grey clay. Chalk, glass and brick inclusions	2.00 - 2.80	Made ground
		45	Firm black gravelly clay. Coal, clinker and brick inclusions	2.80 - 4.00	Made ground
		46	Soft dark brown clayey peat	4.00 - 4.40	Alluvium
TPA6	4.92	51	Greyish brown gravelly sand. Brick and slate inclusions	0 - 0.50	Made ground
		52	Black sand. Occasional gravel. Brick, coal and clinker inclusions	0.50 - 1.00	Made ground
		53	Soft greyish brown clay. Occasional pieces of coal	1.00 - 3.00	Made ground
		54	Soft dark grey clay	3.00 - 3.50	Alluvium
TPA7	4.89	61	Concrete	0 - 0.10	Surface
		62	Yellowish brown gravelly sand. Concrete, tarmac, tile, coal and glass inclusions	0.10 - 1.60	Made ground
		63	Concrete seen in base of testv pit		Surface
TPA7A		71	Brown gravelly sand. Occasional brick, concrete, tile, metal and glass inclusions	0 -0.80	Made ground
		72	Black sandy gravel. Metal, wood and plastic inclusions	0.80 - 1.20	Made ground
TPA8	5.23	81	Greyish brown gravelly sand. Brick, concrete, glass and tile inclusions	0 - 0.60	Made ground
		82	Soft dark brown clay. Brick and concrete inclusions	0.60 - 1.20	Made ground
		83	Orange gravelly sand	1.20 - 2.50	Made ground
TPB1	5.35	91	Concrete	0 - 0.20	Surface
		92	Brown gravelly sand. Concrete inclusions	0.20 - 0.30	Made ground
		93	Black gravelly sand. Brick, coal, slate and granite inclusions	0.30 - 1.70	Made ground
		94	Brown gravelly sand. Brick, concrete and slate inclusions	1.70 - 2.20	Made ground
		95	Brown sandy gravel. Slate, concrete and glass inclusions	2.20 - 3.00	Made ground
TPB2	5.29	101	Brown gravelly sand. Brick, concrete and slate inclusions	0 - 0.70	Made ground
		102	Dark brown gravelly sand. Brick, concrete and tile inclusions	0.70 - 2.70	Made ground
		103	Brown and black clay with occasional gravel. Brick, concrete and wood inclusions	2.70 - 3.20	Made ground
		104	Yellowish brown sandy gravel. Brick and concrete inclusions	3.20 - 3.30	Made ground
		105	Black gravelly ashy sand. Coal, clinker, brick and concrete inclusions	3.30 - 4.10	Made ground

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		106	Soft black and red gravelly clay. Brick, concrete, glass and tile inclusions. Modern glazed teapot and medicine pots also observed	4.10 0 4.50	Made ground
TPB3	5.04	111	Grey sandy gravel. Brick, concrete, slate and metal inclusions	0 - 0.30	Made ground
		112	Concrete	0.30 - 0.50	Surface
		113	Blackish brown sandy gravel. Brick, slate, concrete, slag, glass, ash and clinker inclusions	0.50 - 1.50	Made ground
		114	Blackish brown sandy gravel. Brick, slate, cocrete and slag inclusions	1.50 - 4.00	Made ground
TPB4		121	Concrete	0 - 0.15	Surface
		122	Brown gravelly clay. Brick, concrete, glass, metal and wood inclusions	0.15 - 1.10	Made ground
TPB5	5.12	131	Concrete	0 - 0.15	Surface
		132	Soft dark greyish black gravelly clay. Brick, concrete, wood and coal inclusions	0.15 - 4.00	Made ground
TPB6	6.62	141	Concrete	0 - 0.15	Surface
		142	Brownish grey sand, with some gravel. Brick and concrete inclusions	0.15 - 0.50	Made ground
		143	Black gravelly sand. Brick, coal and clinker inclusions	0.50 - 0.95	Made ground
		144	Dark grey clay.	0.95 - 3.10	Made ground
		145	Black gravelly clay. Wood and coal inclusions	3.10 - 3.20	Made ground
TPB7	5.1	151	Tarmac	0 - 0.40	Surface
		152	Brown gravelly sand. Brick and concrete inclusions	0.40 - 0.80	Made ground
		153	Black gravelly ashy sand. Brick, concrete, coal and clinker inclusions	0.80 - 2.30	Made ground
		154	Black gravelly clay	2.30 - 3.70	Alluvium?
TPB7A	5.21	161	Concrete	0 - 0.20	Surface
		162	Brown gravelly sand. Brick, concrete and clinker inclusions	0.20 - 0.90	Made ground
		163	Black gravelly sand. Brick, concrete and clinker inclusions	0.90 - 3.00	Made ground
		164	Brown gravelly clay	3.00 - 3.50	Made ground
TPB8	5.27	171	Concrete	0 - 0.20	Surface
		172	Brown gravelly sand. Brick, concrete, wood and glass inclusions	0.20 - 0.80	Made ground
		173	Black gravelly sand. Brick, concrete, metal and clinker inclusions	0.80 - 2.10	Made ground
		174	Dark grey clay	2.10 - 2.60	Alluvium/made ground
TPB8A	5.45	181	Dark greyish brown gravelly sand. Brick, concrete, glass and clinker inclusions	0 - 0.60	Made ground
		182	Black gravelly sand. Brick inclusions	0.60 - 1.60	Made ground
		183	Black sandy gravel. Brick, concrete, slate, wood and glass inclusions	1.60 - 3.40	Made ground
TPC1	1.63	191	Concrete	0 - 0.20	Surface
		192	Brownish black gravelly sand. Brick, concrete, glass, wood and metal inclusions	0.20 - 1.35	Made ground
		193	Grey organic clay	1.35 - 2.90	Alluvium
		194	Brown organic clay	2.90 - 4.00	Alluvium
TPC2	1.64	201	Concrete	0 - 0.20	Surface
		202	Brownish black gravelly sand. Brick and concrete inclusions	0.20 - 1.50	Made ground
		203	Grey clay	1.50 - 2.75	Alluvium
		204	Brown organic clay	2.75 - 4.00	Alluvium
TPC3	1.39	211	Concrete	0 - 0.15	Surface
		212	Dark blackish brown gravelly sand. Brick, slag, metal and tile inclusions	0.15 - 1.10	Made ground
		213	Grey clay	1.10 - 2.90	Alluvium
		214	Brown clay	2.90 - 3.85	Alluvium
		215	Grey sandy clay	3.85 -4.00	Alluvium
TPC4	1.46	221	Concrete	0 - -.10	Surface
		222	Dark blackish brown gravelly sand. Brick, metal, tile and slag inclusions	0.10 - 0.50	Made ground
		223	Grey clay	0.50 - 2.80	Alluvium/made ground
		224	Brown organic clay	2.80 - 3.50	Alluvium
		225	Grey sandy clay	3.50 - 4.00	Alluvium
TPC5	2.02	231	Tarmac	0 - 0.20	Surface

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		232	Black gravelly sand. Brick, clinker, tile, glass and metal inclusions	0.20 - 1.80	Made ground
		233	Grey clay	1.80 - 2.90	Alluvium
		234	Brown clay	2.90 - 4.00	Alluvium
TPC6	2.01	241	Brown gravelly sand	0 - 0.10	Topsoil
		242	Brownish grey gravelly sand. Brick, concrete, metal, wood and tile inclusions	0.10 - 3.00	Made ground
		243	Tarmac		Surface
TPC8	1.47	251	Concrete	0 - 0.25	Surface
		252	Grey gravelly sand. Concrete inclusions	0.25 - 0.45	Made ground
		253	Black gravelly sand. Brick, concrete, clinker and clay pipe inclusions	0.45 - 0.95	Made ground
		254	Greyish green organic clay	0.95 - 2.60	Alluvium
		255	Brown clayey peat	2.60 - 3.10	Peat
		256	Light greyish green clayey sand	3.10 - 4.00	Alluvium
		257	Grey sandy gravel	4.00 - 4.10	Terrace gravel?
TPC10	1.49	261	Tarmac	0 - 0.15	Surface
		262	Orange gravelly sand	0.15 - 0.25	Made ground
		263	Grey clay	0.25 - 1.80	Alluvium
		264	Brownish grey clay	1.80 - 3.50	Alluvium
		265	Grey sandy clay	3.50 - 4.00	Alluvium
TPC11	1.5	271	Tarmac	0 - 0.15	Surface
		272	Orangey brown sandy gravel. Brick, concrete and tile inclusions	0.15 - 0.35	Made ground
		273	Grey clay	0.35 - 2.20	Alluvium
		274	Brown clay	2.20 - 3.80	Alluvium
		275	Grey sandy clay	3.80 - 4.00	Alluvium
TPC12	1.52	281	Tarmac	0. - 0.15	Surface
		282	Orangey brown sandy gravel. Brick, concrete and tile inclusions	0.15 - 0.45	Made ground
		283	Grey clay	0.45 - 2.70	Alluvium
		284	Brownish grey clay	2.70 - 3.90	Alluvium
		285	Grey sandy clay	3.90 - 4.00	Alluvium
TPC13	1.5	291	Tarmac	0 - 0.20	Surface
		292	Orangey brown gravelly sand. Brick, concrete and tile inclusions	0.20 - 0.70	Made ground
		293	Grey clay	0.70 - 2.80	Alluvium
		294	Brown clay	2.80 - 3.90	Alluvium
		295	Grey sandy clay	3.90 - 4.00	Alluvium
TPC14	1.45	301	Tarmac	0 - 0.25	Surface
		302	Orangey brown gravelly sand. Brick, concrete, tile and tarmac inclusions	0.25 - 0.85	Made ground
		303	Grey clay	0.85 - 2.65	Alluvium
		304	Brown clay	2.65 - 3.80	Alluvium
		305	Grey sandy clay	3.80 - 4.00	Alluvium
TPC15	1.65	311	Tarmac	0 - 0.15	Surface
		312	Orangey brown gravel. Clinker, brick, concrete, metal and wood inclusions	0.15 - 1.25	Made ground
		313	Grey clay	1.25 - 2.80	Alluvium
		314	Brown organic clay	2.80 - 3.90	Alluvium
		315	Grey sandy clay	3.90 - 4.00	Alluvium
TPC16	1.46	321	Tarmac	0 - 0.15	Surface
		322	Orangey brown gravelly sand. Brick, tile and concrete inclusions	0.15 - 1.25	Made ground
		323	Grey clay	1.25 - 2.90	Alluvium
		324	Brown clay	2.90 - 3.90	Alluvium
		325	Grey sandy clay	3.90 - 4.00	Alluvium
TPC17	1.45	331	Concrete	0 - 0.05	Surface
		332	Orangey brown gravelly sand. Concrete, brick and clinker inclusions	0.05 - 0.50	Made ground
		333	Black gravelly sand. Brick and concrete inclusions	0.50 - 1.00	Made ground
		334	Dark greyish green sandy clay. Brick, concrete and tile inclusions	1.00 - 2.15	Made ground
		335	Brown clayey peat	2.15 - 3.00	Peat
		336	Greyish green organic clay	3.00 - 3.45	Alluvium
		337	Brown clayey peat	3.45 - 4.00	Peat
		338	Greyish green clay	4.00 - 4.10	Alluvium
TPC18	1.71	341	Concrete	0 - 0.10	Surface

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		342	Tarmac rubble	0.10 - 0.20	Made ground
		343	Brown gravelly sand. Tarmac and concrete inclusions	0.20 - 0.70	Made ground
		344	Orangey brown gravelly sand	0.70 - 1.45	Made ground
		345	Greyish green organic clay	1.45 - 2.50	Alluvium
		346	Brown clayey peat	2.50 - 3.00	Peat
		347	Greyish green organic clay	3.00 - 3.40	Alluvium
		348	Brown clayey peat	3.40 - 4.00	Peat
		349	Light greyish green clayey sand	4.00 - 4.20	Alluvium
TPC19	1.47	351	Tarmac	0 - 0.05	Surface
		352	Concrete	0.05 - 0.20	Surface
		353	Blackish brown gravelly sand. Brick and clinker inclusions	0.20 - 0.90	Made ground
		354	Black gravelly clay	0.90 - 1.60	Made ground
		355	Greyish green clay	1.60 - 2.40	Alluvium
		356	Greyish green peaty clay	2.40 - 4.00	Alluvium
		357	Greyish green gravelly sand	4.00 - 4.50	Alluvium
TPC20	1.3	361	Concrete	0 - 0.15	Surface
		362	Brownish black clay	0.15 - 0.70	Alluvium
		363	Greenish grey clay	0.70 - 1.70	Alluviun
		364	Greyish brown organic clay	1.70 - 3.80	Alluvium
		365	Grey sand and gravel	3.80 - 3.90	Terrace gravel
TPC22	2.01	371	Tarmac	0 - 0.15	Surface
		372	Black gravelly sand. Clinker, tile, glass and metal inclusions	0.15 - 1.40	Made ground
		373	Grey clay. Brick inclusions	1.40 - 2.80	Made ground
		374	Brown clay	2.80 - 3.20	Alluvium
		375	Grey sandy clay	3.20 - 4.00	Alluvium
TPC23	1.45	381	Concrete	0 - 0.10	Surface
		382	Brownish black gravelly sand. Brick, concrete, tile, wood, glass and metal inclusions	0.10 - 1.30	Made ground
		383	Grey clay	1.30 - 4.00	Alluvium
TPC24	2.19	391	Tramac	0 - 0.15	Surface
		392	Dark brownish black gravelly sand. Ash, brick, tile and concrete inclusions	0.15 - 1.10	Made ground
		393	Grey clay	1.10 - 2.60	Alluvium
		394	Brown clay	2.60 - 2.90	Alluvium
		395	Brown sandy clay	2.90 - 4.00	Alluvium
TPC25	1.75	401	Brown sandy gravel. Granite and concrete inclusions	0 - 0.05	Made ground
		402	Tarmac	0.05 - 0.15	Surface
		403	Brownish grey gravelly sand. Brick, concrete and clinker inclusions	0.15 - 0.60	Made ground
		404	Dark grey clay	0.60 - 4.30	Made ground
TPC26	1.9	411	Tarmac	0 - 0.05	Surface
		412	Brownish red sandy gravel. Reed and yellow brick inclusions	0.05 - 0.45	Made ground
		413	Black sandy clay. Brick inclusions	0.45 - 0.90	Made ground
		414	Dark grey clay	0.90 - 4.50	Alluvium
TPC27	1.73	421	Brown gravelly sand. Brick, concrete, glass, wire and plastic inclusions	0 - 0.30	Made ground
		422	Orangey brown gravelly sand. Clinker inclusions	0.30 - 0.55	Made ground
		423	Black gravelly ashy sand. Brick and clinker inclusions	0.55 - 1.00	Made ground
		424	Grey clay	1.00 - 1.40	Alluvium
		425	Grey organic clay	1.40 - 4.30	Alluvium
TPC28	1.43	431	Concrete	0 - 0.20	Surface
		432	Light grey gravelly sand. Concrete inclusions	0.20 - 0.40	Made ground
		433	Tarmac	0.40 - 0.45	Surface
		434	Brownish black gravelly sand. Concrete, clinker, tar and tile inclusions	0.45 - 0.95	Made ground
		435	Grey clay	0.95 - 2.10	Alluvium
		436	Brown clayey peat	2.10 - 3.40	Peat
		437	Light greyish green organic clay	3.40 - 4.40	Alluvium
		438	Grey sandy gravel	4.40 - 4.60	Terrace gravel
TPC29	1.62	441	Brownish yellow gravelly sand. Brick and tarmac inclusions	0 - 0.45	Made ground
		442	Dark grey clay	0.45 - 4.40	Alluvium
		443	Light grey sand	4.40 - 4.50	Terrace gravels
TPC30	1.74	451	Brown and green gravelly sand. Tile and brick inclusions	0 - 0.50	Made ground

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		452	Black clayey sand	0.50 - 0.80	Made ground
TPC30 A	1.74	461	Brownish grey gravelly sand. Brick, tarmac, concrete, plastic and wood inclusions	0 - 0.60	Made ground
		462	Dark gey clay with black mottling	0.60 - 4.10	Made ground
TPC31	1.87	471	Brown gravelly sand. Brick, tarmac, concrete and clinker inclusions	0 - 0.40	Made ground
		472	Dark grey clay with black and orange mottling	0.40 - 3.30	Made ground
		473	Brown clayey peat	3.30 - 4.00	Peat
TPC32	1.61	481	Tarmac	0 - 0.05	Surface
		482	Blackish brown gravelly sand. Brick and concrete inclusions	0.05 - 0.45	Made ground
		483	Black and purple sand	0.45 - 0.55	Made ground
		484	Dark grey clay with purple and black mottling	0.55 - 4.50	Made ground
TPD1	5.87	491	Brown gravelly sand. Slate, brick and concrete inclusions	0 - 0.50	Made ground
		492	Orangey brown gravelly sand. Concrete and brick inclusions	0.50 - 0.65	Made ground
		493	Black ashy sand. Occasional coal and clinker inclusions	0.65 - 2.05	Made ground
		494	Black gravelly sand. Coal, clinker, brick, concrete and wood inclusions	2.05 - 2.70	Made ground
TPD2	5.2	501	Brown clayey sand. Concrete inclusions	0 - 0.55	Made ground
		502	Orangey yellow gravelly sand. Brick, concrete and chalk inclusions	0.55 - 0.90	Made ground
		503	Black gravelly ashy sand. Clinker, brick and concrete inclusions	0.90 - 1.60	Made ground
		504	Dark grey organic clay	1.60 - 3.20	Alluvium
		505	Brown clayey peat	3.20 - 4.50	Peat
TPD3	4.67	511	Brown gravelly sand. Brick, concrete and wood inclusions	0 - 0.60	Made ground
		512	Brown gravelly clay. Concrete, brick and clinker inclusions	0.60 - 1.80	Made ground
		513	Black gravelly sand. Clinker, wood and glass inclusions	1.80 - 4.00	Made ground
		514	Dark grey sandy clay	4.00 - 4.30	Made ground
TPD5	5.79	521	Brown gravelly sand. Concrete, brick, metal, tile, plastic and glass inclusions	0 - 0.70	Made ground
		522	Black gravelly sand. Concrete and brick inclusions	0.70 - 0.80	Made ground
		523	Light grey gravelly sand. Brick and concrete inclusions	0.80 - 2.10	Made ground
		524	Black gravelly clay. Concrete, brick and wood inclusions	2.10 - 3.90	Made ground
TPD6	5.64	531	Brown gravelly sand. Brick and concrete inclusions	0 - 1.10	Made ground
		532	Black gravelly ashy sand. Brick, concrete, clinker and wood inclusions	1.10 - 1.20	Made ground
		533	Dark grey gravelly sand. Brick, concrete and wood inclusions	1.20 - 2.30	Made ground
		534	Dark grey clay. Brick and concrete inclusions	2.30- 2.50	Made ground
TPD7	5.77	541	Brown gravelly sand. Occasional concrete and brick inclusions	0 - 0.45	Made ground
		542	Orangey brown gravelly sand. Brick and concrete inclusions	0.45 - 1.40	Made ground
		543	Brownish black gravelly sand. Brick, concrete, wood and clay pipe inclusions	1.40 - 2.40	Made ground
		544	Black gravelly clay	2.40 - 4.90	Made ground
TPD8		551	Brown gravelly sand. Brick, tile and concrete inclusions	0 - 1.60	Made ground
		552	Greyish brown clay. Cocrete inclusions	1.60 - 2.50	Made ground
		553	Grey clay	2.50 - 3.30	Alluvium
		554	Black sandy clay	3.30 - 4.40	Alluvium
TPD9	5.96	561	Brown gravelly sand. Concrete and brick inclusions	0 - 0.70	Made ground
		562	Black gravelly sand. Concrete, wood, brick and chalk inclusions	0.70 - 1.50	Made ground
		563	Brownish black gravelly clay. Brick, concrete, wood and chalk inclusions	1.50 - 3.40	Made ground
TPD10	4.79	571	Brown gravelly sand. Concrete and brick inclusions	0 - 0.50	Made ground
		572	Black gravelly ashy sand. Concrete and yellow brick inclusions	0.50 - 1.10	Made ground
		573	Dark grey clay	1.10 - 2.80	Alluvium
		574	Dark grey clayey peat	2.80 - 4.80	Peat

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
TPD11	4.92	581	Greyish brown sandy gravel. Slate, brick, tile, wood, metal and glass inclusions	0 - 1.20	Made ground
		582	Concrete	1.20 - 1.60	Surface
		583	Greyish brown sandy gravel. Brick, tile, slate, concrete and glass inclusions	1.60 - 3.00	Made ground
TPD12	5.59	591	Greyish brown sandy gravel. Concrete and brick inclusions	0 - 0.50	Made ground
		592	Concrete	0.50 - 0.85	Surface
		593	Brownish black gravelly sand. Ash, brick, concrete and wood inclusions	0.85 - 1.30	Made ground
		594	Dark grey sandy clay. Brick inclusions	1.30 - 1.70	Made ground
		595	Ash	1.70 - 1.75	Made ground
		596	Orange gravelly sand	1.75 - 2.60	Made ground
TPD13	5.91	601	Concrete	0 - 0.25	Surface
		602	Brown gravelly sand. Brick, tile, concrete and wood inclusions	0.25 - 2.50	Made ground
		603	Grey gravelly clay. Brick, tile and concrete inclusions	2.50 - 3.20	Made ground
TPD14	5.66	611	Greyish brown sandy gravel. Concrete, brick, wood, metal and glass inclusions	0 - 1.50	Made ground
TPD15	5.55	621	Yellow gravelly sand	0 - 1.80	Made ground
		622	Black gravelly sand. Brick, concrete and wood inclusions	1.80 - 3.20	Made ground
TPD16	5.64	631	Concrete	0 - 0.25	Surface
		632	Black sandy gravel. Clinker, ash, slag, brick, glass, tile, wood and metal inclusions	0.25 - 1.50	Made ground
		633	Black sandy gravel. Brick, tile, ash and slag inclusions	1.50 - 2.50	Made ground
		634	Greyish brown samdy gravel. Brick, tile, ash, clinker and wood inclusions	2.50 - 3.50	Made ground
		635	Greyish blue clay	3.50 - 4.20	Alluvium
TPD17	5.51	641	Brown gravelly sand. Concrete inclusions	0 - 0.25	Made ground
		642	Concrete	0.25 - 0.50	Surface
		643	Black gravelly ashy sand. Occasional brick, concrete and clinker inclusions	0.50 - 1.10	Made ground
		644	Dark grey clay	1.10 - 1.75	Alluvium
		645	Dark brown clayey peat	1.75 - 4.00	Peat
		646	Dark grey clay	4.00 - 4.10	Alluvium
TPD18	5.06	651	Concrete	0 - 0.20	Surface
		652	Brown sandy gravel. Concrete and brick inclusions	0.20 - 1.00	Made ground
		653	Black gravelly ashy sand. Clinker inclusions	1.00 - 1.30	Made ground
		654	Black organic clay	1.30 - 2.45	Made ground
		655	Dark grey organic clay. Occasional small brick fragments	2.45 - 4.40	Made ground
TPD19	4.7	660	Concrete	0 - 0.20	Surface
		661	Greyish brown sandy gravel. Brick and concrete inclusions	0.20 - 0.50	Made ground
		662	Black gravelly sand. Brick and concrete inclusions	0.50 - 2.00	Made ground
TPD20	6.02	671	Concrete	0 - 0.20	Surface
		672	Dark brownish red sand. Ash and brick inclusions	0.20 - 0.70	Made ground
		673	Dark grey clay. Rare brick and coal inclusions	0.70 - 2.30	Made ground
		674	Dark grey clay	2.30 - 4.40	Alluvium
TPD21	4.99	681	Concrete	0 - 0.45	Surface
		682	Tarmac	0.45 - 0.50	Surface
		683	Brown gravelly sand. Concrete and brick inclusions	0.50 - 1.10	Made ground
TPD22	5.37	691	Concrete	0 - 0.35	Surface
		692	Brown gravelly sand. Concrete and brick inclusions	0.35 - 0.65	Made ground
		693	Dark grey gravelly clay	0.65 - 3.20	Made ground
TPD23	4.57	701	Brown gravelly sand. Brick and concrete inclusions	0 - 0.45	Made ground
		702	Brownish grey sandy clay. Rare brick and coal inclusions	0.45 - 1.60	Made ground
		703	Black and grey organic clay	1.60 - 4.30	Made ground
TPD24	5.8	711	Concrete	0 - 0.20	Made ground
		712	Brown gravelly sand. Concrete, brick, tile, metal and wood inclusions	0.20 - 1.80	Made ground
		713	Dark grey gravelly clay	1.80 - 4.20	Alluvium/made ground
TPD25	5.13	721	Brown sandy clay	0 - 0.25	Made ground
		722	Concrete	0.25 - 0.55	Surface
		723	Orangey brown sandy gravel	0.55 - 1.25	Made ground

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		724	Brown gravelly clay. Brick, wood and coal inclusions	1.25 - 3.80	Made ground
		725	Grey clay	3.80 - 4.00	Alluvium
M1H	5.13	731	Concrete	0 - 0.30	Surface
		732	Brown sandy gravel. Occasional concrete inclusions	0.30 - 1.30	Made ground
M2H	5.09	741	Concrete	0 - 0.30	Surface
		742	Brownish black sandy gravel	0.30 - 1.50	Made ground
		743	Brownish black Peat	1.50 - 2.30	Peat
M3H	5.13	751	Concrete	0 - 0.50	Surface
		752	Brownish orange sandy gravel	0.50 - 1.80	Made ground
		753	Black peat	1.80 - 1.90	Peat
M4H	5.14	761	Concrete	0 - 0.20	Surface
		762	Brownish orange sandy gravel	0.20 - 0.55	Made ground
		763	Blackish brown organic clay	0.55 - 1.90	Made ground
M5H	5.35	771	Brownish grey gravelly sand. Occasional concrete inclusions	0 - 0.20	Made ground
		772	Concrete	0.20 - 0.60	Surface
		773	Brownish grey gravelly sand. Occasional concrete inclusions	0.60 - 1.60	Made ground
M6H	5.39	781	Brown gravelly sand. Brick and concrete inclusions	0 - 1.10	Made ground
		782	Concrete	1.10 - 1.30	Surface
		783	Brownish orange gravelly sand	1.30 - 1.80	Made ground
		784	Brownish black clay	1.80 - 2.50	Made ground
M7M	5.32	791	Concrete	0 - 0.23	Surface
		792	Grey gravel	0.23 - 0.40	Made ground
		793	Blackish brown sandy gravel	0.40 - 1.85	Made ground
		794	Greenish grey clay	1.85 - 4.50	Made ground
M8M	5.19	801	Concrete	0 - 0.10	Surface
		802	Concrete	0.10 - 1.35	Structure
		803	Greyish brown gravel. Concrete inclusions	1.35 - 1.50	Made ground
		804	Grey green black gravelly clay	1.50 - 1.55	Made ground
		805	Greyish brown sandy gravel	1.55 - 3.60	Made ground
		806	Greenish grey clay. Occasional planks	3.60 - 3.90	Made ground
M9M	5.26	811	Tarmac	0 - 0.20	Surface
		812	Greyish brown sandy gravel. Glass, tarmac, tiles, brick, concrete and coal inclusions	0.20 - 0.45	Made ground
		813	Concrete	0.45 - 0.60	Surface
		814	Blackish brown clay with some gravel. Brick, tile, glass, clinker and asphalt inclusions	0.60 - 2.30	Made ground
M11M	4.98	821	Concrete	0 - 0.25	Surface
		822	Concrete	0.25 - 0.65	Beam/wall
		823	Brickwork	0.65 - 1.80	Wall
M13H	5.11	831	Brownish grey gravelly sand. Brick and concrete inclusions	0 - 1.10	Made ground
M14H	4.99	841	Concrete	0 - 0.20	Surface
		842	Orangey brown gravelly sand. Occasional brick inclusions	0.20 - 1.10	Made ground
M15H	5.04	851	Concrete	0 - 0.10	Surface
		852	Brownish grey gravelly sand. Clinker and brick inclusions	0.10 - 2.50	Made ground
M16H	5.09	861	Concrete	0 - 0.20	Surface
		862	Brownish black gravelly sand. Brick and concrete inclusions	0.20 - 1.00	Made ground
M17M	5.75	871	Brown sandy gravel. Brick and tile inclusions	0 - 1.20	Made ground
		872	Brownish black sandy clay with some gravel. Brick and concrete inclusions	1.20 - 2.60	Made ground
M18M	5.9	881	Greyish black gravelly sand. Brick and clinker inclusions	0 - 0.30	Made ground
		882	Yellowish brown sandy gravel	0.30 - 0.35	Made ground
		883	Reddish brown gravel. Frequent roof tiles, occasional concrete	0.35 - 0.75	Made ground
		884	Orangey brown gravelly clay. Brick and concrete inclusions	0.75 - 1.40	Made ground
		885	Dark bluish grey clay with occasional gravel. Metal, concrete and brick inclusions	1.40 - 2.70	Made ground
M18MA/B	5.69	891	Greyish brown gravelly sand. Occasional brick and concrete gravel	0 - 0.80	Made ground
		892	Greyish brown gravelly clay. Ash, brick, slate, concrete and clinker inclusions	0.80 - 2.30	Made ground

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
M18MB	5.69	901	Greyish brown gravelly sand. Ash, brick and concrete inclusions	0 - 1.20	Made ground
		902	Dark greyish brown gravelly clay. Ash, brick, slate, tile concrete and clinker inclusions	1.20 - 2.30	Made ground
M19M	5.15	901	Concrete	0 - 0.07	Surface
		902	Concrete	0.07 - 0.12	Surface
		903	Orangey grey sandy gravel	0.12 - 0.30	Made ground
		904	Pinkish grey sandy gravel	0.30 - 0.50	Made ground
		905	Brownish black sand. Brick, concrete and clinker inclusion	0.50 - 0.75	Made ground
		906	Greenish brown clay with occasional gravel. Brick and concrete inclusions	0.75 - 1.30	Made ground
		907	Black sandy gravel. Concrete and brick inclusions	1.30 - 1.60	Made ground
		908	Bluish grey clay	1.60 - 4.30	Alluvium
M20M	5.19	911	Dark brown sandy gravel. Occasional brick, glass and slate inclusions	0 - 1.50	Made ground
		912	Greenish grey clay with occasional gravel. Rare brick inclusions	1.50 - 3.80	Made ground
M21H	5.22	921	Concrete	0 - 0.20	Surface
		922	Brownish black gravelly sand. Brick, clinker and glass inclusions	0.20 - 1.10	Made ground
M22H	5.18	931	Concrete	0 - 0.20	Surface
		932	Blackish brown gravelly sand. Brick and occasional clinker and glass inclusions	0.20 - 0.95	Made ground
		933	Concrete	0.95 - 2.20	Beam
M23M	5.45	941	Grey sandy gravel. Tile, concrete and brick inclusions	0 - 0.40	Made ground
		942	Brown gravel. Brick, concrete, metal and glass inclusions	0.40 - 1.50	Made ground
		943	Dark greyish black sandy gravel. Brick, concrete, glass, tile, asbestos and metal inclusions	1.50 - 3.20	Made ground
M24M	5.24	951	Dark brown sandy gravel. Brick, concrete and occasionally tile inclusions	0 - 0.20	Made ground
		952	Brick rubble	0.20 - 0.35	Made ground
		953	Blackish brown sandy gravel. Concrete and occasional brick inclusions	0.35 - 0.45	Made ground
		954	Yellowish brown sandy gravel. Concrete and occasional brick inclusions	0.45 - 0.55	Made ground
		955	Blackish brown sandy gravel. Concrete and occasional brick inclusions	0.55 - 0.60	Made ground
		956	Brick rubble with occasional concrete pieces	0.60 - 0.75	Made ground
		957	Blackish brown sandy gravel. Concrete and occasional brick inclusions	0.75 - 1.50	Made ground
		958	Greyish brown gravel. Brick, concrete, metal and wood inclusions	1.50 - 3.90	Made ground
M25M	5.16	961	Greyish brown sandy gravel. Brick, tile, concrete, glass and ceramic inclusions	0 - 0.40	Made ground
		962	Blackish grey sandy gravel. Concrete, brick, glass, ceramic and tile inclusions	0.40 - 3.80	Made ground
M26M	4.8	971	Tarmac	0 - 0.02	Surface
		972	Concrete	0.02 - 0.20	Surface
		973	Blackish grey gravelly sand. Rare brick inclusions	0.20 - 1.00	Made ground
		974	Bluish grey clay	1.00 - 2.60	Made ground
M27M	4.81	981	Brown gravelly sand. Brick and concrete inclusions	0 - 0.10	Made ground
		982	Concrete	0.10 - 0.32	Surface
		983	Grey sandy gravel	0.32 - 0.40	Made ground
		984	Brownish yellow sandy gravel. Concrete inclusions	0.40 - 0.50	Made ground
		985	Blackish brown sandy gravel. Brick, slate, tile and metal inclusions	0.50 - 2.00	Made ground
M28M	4.73	991	Concrete	0 - 0.10	Surface
		992	Greyish white sandy gravel	0.10 - 0.25	Made ground
		993	Blackish brown sandy gravel. Brick, concrete and tile inclusions	0.25 - 0.40	Made ground
		994	Black gravelly sand. Brick, clinker and tarmac inclusions	0.40 - 0.85	Made ground
		995	Orangey brown sandy gravel	0.85 - 1.65	Made ground
		996	Black peat	1.65 - 1.90	Peat
		997	Greenish grey clay	1.90 - 3.60	Alluvium
M29M	4.92	1001	Concrete	0 - 0.15	Surface
		1002	Brown sandy gravel. Slate and brick inclusions	0.15 - 0.70	Made ground

Test Pit	Level (m OD)	Context	Description	Depth (m)	Interpretation
		1002	Black Gravel	0.70 - 1.00	Made ground
		1004	Orangey brown sandy gravel	1.00 - 1.20	Alluvium
		1005	Black peat	1.20 - 1.25	Peat
		1006	Greyish green clay	1.25 - 1.70	Alluvium
		1007	Orangey brown sandy gravel	1.70 - 1.85	Alluvium
		1008	Greyish green clay	1.85 - 2.70	Alluvium
M30M	5.52	1011	Greyish brown sandy gravel	0 - 0.20	Made ground
		1012	Concrete	0.20 - 0.50	Surface
		1013	Grey sandy gravel. Concrete and brick inclusions	0.50 - 0.75	Made ground
		1014	Greenish grey clay	0.75 - 4.00	Made ground
M31M	5.25	1021	Brown sandy gravel. Concrete, brick, tile, glass and wood inclusions	0 - 0.35	Made ground
		1022	Concrete	0.35 - 0.50	Surface
		1023	Blackish blue clay with occasional sand. Brick and concrete inclusions	0.50 - 3.00	Made ground
M32M	5.35	1031	Concrete	0 - 0.10	Surface
		1032	Brown sandy gravel. Brick and concrete inclusions	0.10 - 0.60	Made ground
		1033	Greenish grey clay	0.60 - 2.70	Alluvium
		1034	Blackish brown sandy gravel	2.70 - 3.80	Terrace gravels?
MM1	5.27	1041	Concrete	0 - 0.20	Surface
		1042	Brownish black gravelly clay. Occasional brick inclusions	0.20 - 1.70	Made ground
MM2	5.17	1051	Concrete	0 - 0.30	Surface
		1052	Brownish orange gravelly clay. Brick and concrete inclusions	0.30 - 1.30	Made ground
MM3	4.85	1061	Concrete	0 - 0.25	Surface
		1062	Brownish grey gravelly sand	0.25 - 1.20	Made ground
		1063	Dark greyish orange gravelly clay	1.20 - 1.80	Made ground
MM4	5.25	1071	Concrete	0 - 0.05	Surface
		1072	Concrete	0.05 - 0.25	Beam
		1073	Orangey yellow sandy gravel	0.25 - 1.20	Made ground

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APPENDIX 2 GLSMR/RCHME NMR ARCHAEOLOGICAL REPORT FORM

1) TYPE OF RECORDING

Evaluation, Excavation, **Watching Brief,** Building Recording, Survey, Geoarchaeological Evaluation, Fieldwalking, Other

2) LOCATION

Borough: **Newham**

Site address: **Silvertown Quays, Newham, London**

Site Name: **Silvertown Quays** Site Code: **SQY 03**

Nat. grid Refs: centre of site: **TQ 4140 8030**

Limits of site: N **TQ 4130 8050** S **TQ 4130 8000**

E **TQ 4080 8030** W **TQ 4160 8030**

3) ORGANISATION

Name of archaeological unit/company/society: **Oxford Archaeology**

Address: Janus House, Osney Mead, Oxford OX2 OES

Site supervisor: **Callum Mitchell** Project manager: **Andrew Holmes**

Funded by: **Soil Mechanics**

4) DURATION

Date fieldwork started **13.10.03** Date finished: **6.11.03**

Fieldwork previously notified? NO

Fieldwork will continue? NOT KNOWN

5) PERIODS REPRESENTED

Palaeolithic, Mesolithic, Neolithic, Bronze Age, Iron Age, Roman, Saxon (pre-AD 1066), Medieval (AD 1066-1485), **Post-Medieval, Unknown**

6) PERIOD SUMMARIES Evidence for extensive post-medieval made ground, earlier alluviual/peat deposits consistent with buried landscapes.

7) NATURAL

Type: Terrace Gravels.

Height above Ordnance datum: +5.25 OD

8) LOCATION OF ARCHIVES

a) Please provide an estimate of the quantity of material in your possession for the following categories:

Notes A4 x 10	PLans A3 x 3	PHotos Ngtives x 70
SLides x70	COrrespondence	MScripts (unpub reports, etc)
BUlk finds	SMall finds	SOil samples
OTher Geotechical logs x 200		

b) The archive has been prepared and stored in accordance with MGC standards and will be deposited in the following location: **Museum of London**

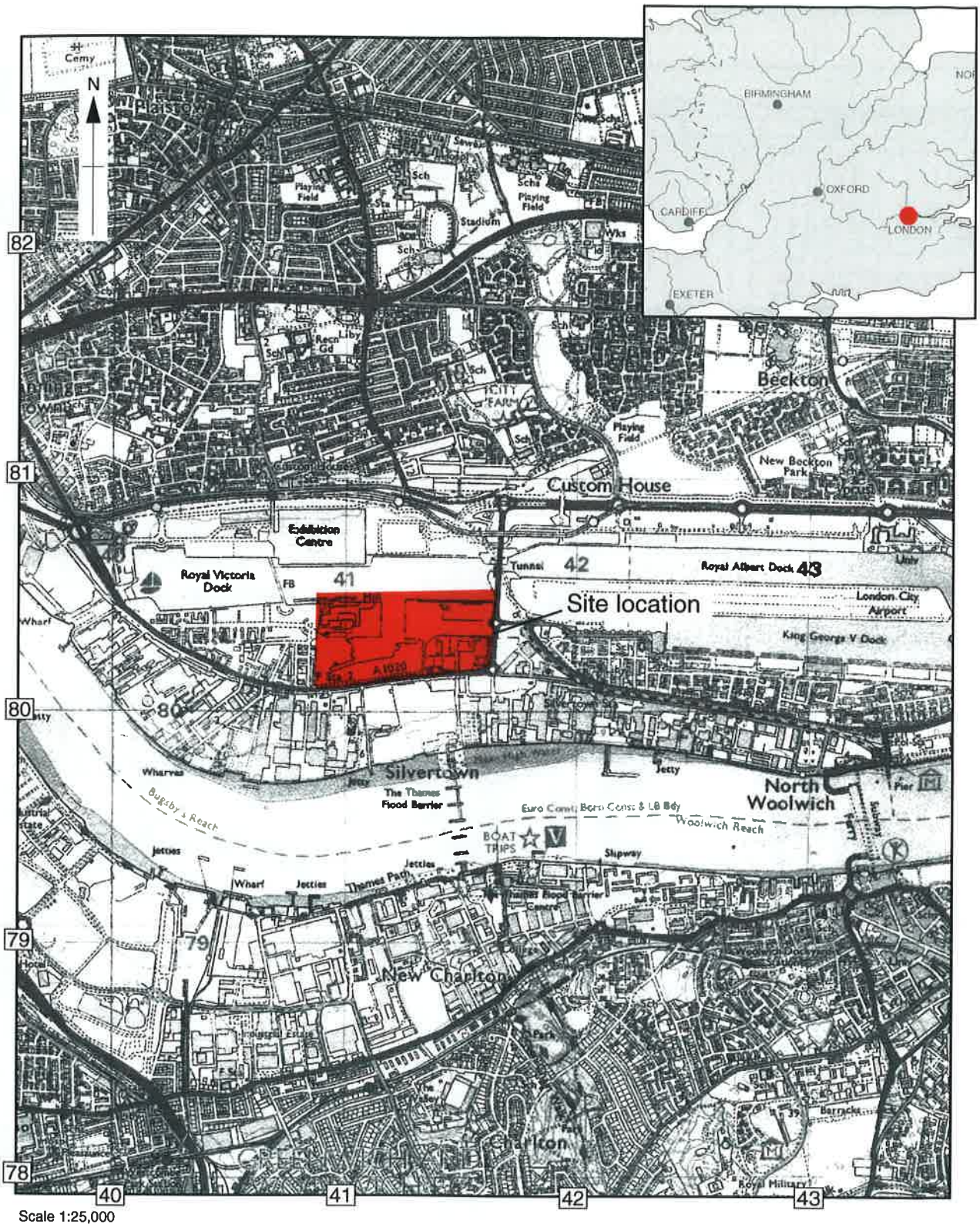
c) Has a security copy of the archive been made?: NO

10) BIBLIOGRAPHY

See Appendix 1 Bibliography and References

SIGNED:  DATE: 30.1.04

NAME : A.Holmes



Scale 1:25,000

Figure 1: Site location

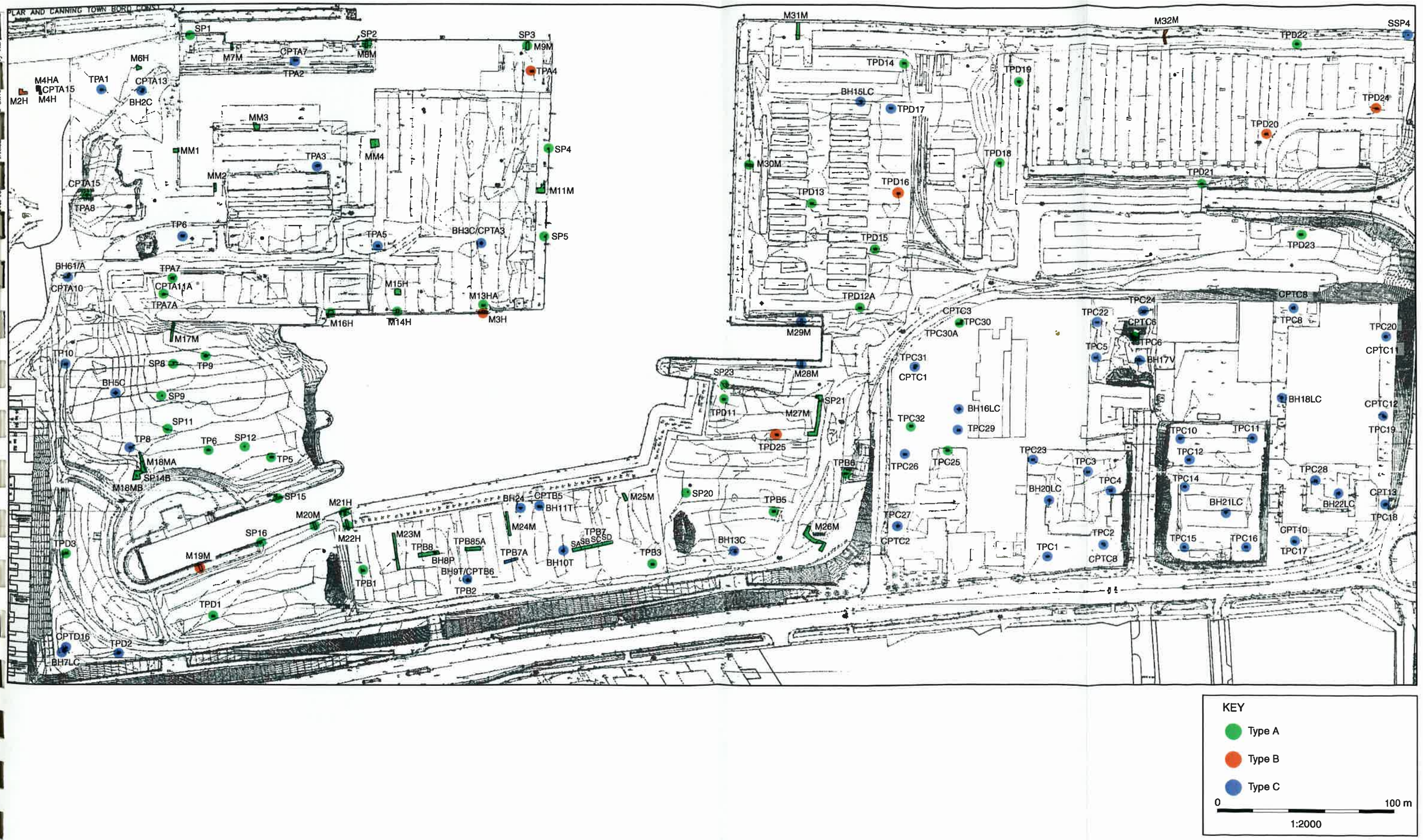


Figure 2: Plan of geotechnical test pit locations with stratigraphic types

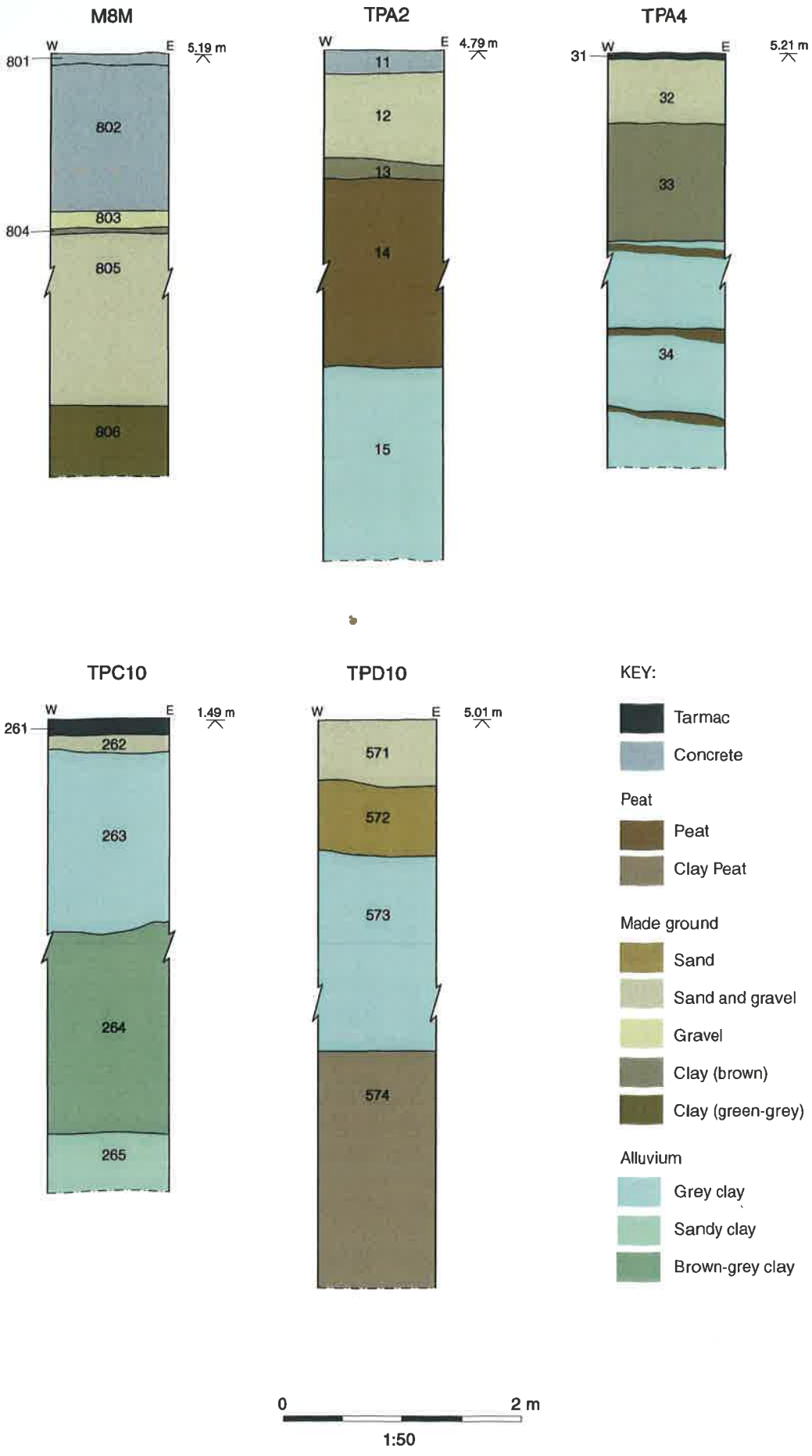


Figure 3: Sample sections of Test Pits M8M, TPA2, TPA4, TAC10 and TPD10

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