



CUBA STREET  
Isle of Dogs  
London  
E14

London Borough of Tower Hamlets

Archaeological Evaluation

April 2008



MUSEUM OF LONDON

Archaeology Service

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Isle of Dogs  
London  
E14

London Borough of Tower Hamlets

Archaeological Evaluation

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## **Summary (non-technical)**

*This report presents the results of a geotechnical watching brief and subsequent archaeological evaluation carried out by the Museum of London Archaeology Service on the site of Cuba Street, London E14. The report was commissioned from MoLAS by ENVIRON on behalf of Ballymore Properties.*

*Two archaeological evaluation trenches were excavated on the site: Trench 1 (10m x 4.2m) on the west side of the site and Trench 2 (10.8m x 10m) on the east.*

*The results of the field evaluation have helped to refine the initial assessment of the archaeological potential of the site. It revealed an alluvial sequence from Terrace Gravels 0.015mOD to -0.38m OD fining up to sandy clay at 1.5m-1.7m OD. Gravel spreads and overbank deposits (levees or crevasse-splay), which included washed in fire-cracked flint, were identified within the sandy clay. The alluvial sequence was cut by 19th-c cess pits and industrial building foundations (which also cut through coal-ash - nightsoil - land-raising dumps). Current ground level on the site is at 2.3m - 2.6m OD.*

*In the light of the revised understanding of the archaeological potential of the site the report concludes the proposed redevelopment will have no significant archaeological impact. No further archaeological fieldwork is recommended.*

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# 1 Introduction

## 1.1 Site background

The evaluation took place at Cuba Street, London E14. The site is bounded by Cuba Street to the north and east, Manilla Street to the South, and Tobago Street to the west. (National Grid Reference 537180 179880: Fig 1). Ground level slopes from 2.6m Ordnance Datum (OD) on the west side on Manilla Street to 1.7m OD on the east side. The site code is CBZ08.

An archaeological *desk-based assessment* was previously prepared, which covers the whole area of the site (MoLAS 2007). The *assessment* document should be referred to for information on the natural geology, archaeological and historical background of the site, and the initial interpretation of its archaeological potential.

## 1.2 Planning and legislative framework

The legislative and planning framework in which the archaeological exercise took place was summarised in the *desk-based assessment* (see Section 3, MoLAS 2007).

## 1.3 Planning background

This report is being submitted in support of an application for planning consent.

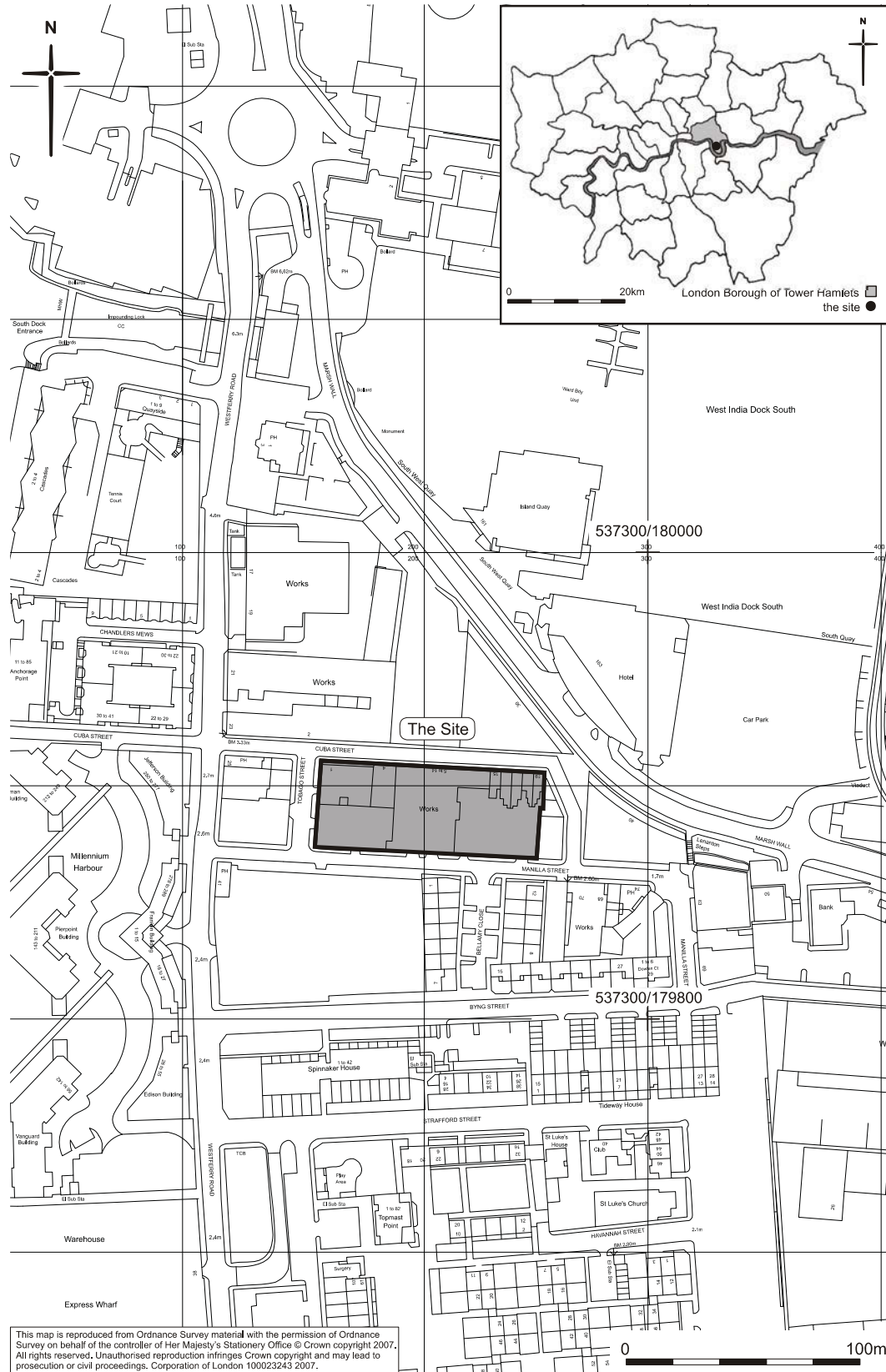


Fig 1 Site location



#### 1.4 Origin and scope of the report

This report was commissioned by ENVIRON on behalf of the client Ballymore Properties and produced by the Museum of London Archaeology Service (MoLAS). The report has been prepared within the terms of the relevant Standard specified by the Institute of Field Archaeologists (IFA 2001).

Field evaluation, and the *Evaluation report* which comments on the results of that exercise, are defined in the most recent English Heritage guidelines (English Heritage, 1998) as intended to provide information about the archaeological resource in order to contribute to the:

- formulation of a strategy for the preservation or management of those remains; and/or
- formulation of an appropriate response or mitigation strategy to planning applications or other proposals which may adversely affect such archaeological remains, or enhance them; and/or
- formulation of a proposal for further archaeological investigations within a programme of research

#### 1.5 Aims and objectives

All research is undertaken within the priorities established in the Museum of London's *A research framework for London Archaeology*, 2002.

The following research aims and objectives were established in the *Method Statement* for the evaluation (MoLAS 2008, Section 2.3):

The archaeological brief is essentially limited to establishing the levels and nature of surviving archaeological deposits. Nevertheless, a few broad research questions can be outlined:

- What are the earliest deposits identified?
- Is there any evidence of prehistoric occupation on the site?
- How do the results refine our current understanding of the past topography of the site?
- Does higher, drier ground exist on the site and is there evidence of prehistoric occupation in this area?
- Does any environmental evidence exist in cut features and what is its potential for providing information about past activities and land-use on the site?
- Is environmental evidence preserved in wetland marginal deposits on the site and what is its potential for past landscape reconstruction and dating?



## 2 Topographical and historical background

For a detailed background see the *desk-based assessment* (MoLAS 2007).

### 2.1 Archaeological background

A detailed description of the geology, archaeology and history of the site was provided in the earlier *Archaeological (impact) assessment* (MoLAS September, 2007). A brief resume is provided here:

The site lies on the lowest Floodplain on the large meander that forms the Isle of Dogs where Shepperton Gravels were deposited with glacial outwash between around (15,000 and 10,000 years ago) at the end of the Devensian glaciation (Gibbard, 1985) creating the deep channels and raised gravels and sand bars that have influenced subsequent sedimentation.

The majority of Holocene sediments are alluvial and this area was subject to continued estuarine expansion from the early Bronze Age onwards (at *c* 4200 cal BP) (Wilkinson, 1995b). Iron Age and medieval periods lie within these layers and prehistoric levels lie within the lower interbedded alluvial layers. The Roman period is represented by upper silty clay alluvium from the lowering of river levels and their subsequent erosion. The expected sequence is as follows: Top of gravels (-2.3m to 0m OD); silty clay and sands (> -2.3m to -0.90m OD); Peat (> -0.90m to -0.40m OD); silts and clays alluvium (-0.50m to > +0.80m OD).

Although subsequent erosion has removed many of the oldest land surfaces a prehistoric forest was found in the 19th century *c* 560m north-east of the site and is listed in the Sites and Monuments Record as Palaeolithic in date. Investigations at 38 Express Wharf, *c* 200m south-west of the Site, found a scraper, possibly of Mesolithic date and prehistoric pottery (Neolithic and Bronze Age). Other localised investigations have revealed Palaeolithic, Neolithic and Bronze Age land surfaces. Bronze Age occupation is attested to through several pits (38 Express Wharf) and structures for wetland exploitation.

The nearest evidence for the Roman period lies to the west at Express Wharf, west of Westferry Road and *c* 200m south-west of the Site. Excavations by Thames Valley Archaeological Services (TVAS) revealed two gullies and a series of pits and stakeholes dated from the pottery to the 2nd century. Excavation below the alluvium revealed features cutting into the sands indicating a small 2nd century farm (Anthony and Ford 2003, 7).

During the Saxon period large areas of land would have remained marshy with the Thames frequently overflowing its banks. The marshes and fens, however, were of exceptional importance as feeding grounds for livestock, for the gathering of reeds, plants and berries, for fishing, and for the hunting of wildfowl and other animals. As such they were regarded as more valuable than cultivated fields well into the Middle

Ages. It is likely that the site was marginally located and prone to flooding during this time.

Excavations at Mastmaker Road, *c* 400m south of the Site suggested land reclamation from the medieval period onwards. The first clear evidence of settlement dates from the second half of the 12th century, when William of Pontefract built a chapel on his estate, later known as the manor of Pomfret (VCH *Middlesex* xliii–xliv, 375–87. In 1449, the river burst through the wall opposite Deptford, in all probability causing the hamlet's abandonment (VCH *Middlesex* xliii–xliv). This was repeated many times over the next couple of hundred years and as a result, fishing and fowling in the marsh became a profitable activity for over a hundred years later, as recorded in the Stepney Manor accounts (*ibid.*).

These episodes of flooding and reclamation were repeated during the post-medieval period the most severe being in 1529 and 1660. The earliest map consulted is Gascoyne's survey of the Parish of St Dunstan, Stepney, dated 1703 that shows the site located in a field just south of reclaimed land called the 'Old Breach where a timber yard is marked. New mills were built along the western flood bank of this Breach and by the 1740s there were twelve mills. These were mostly used for grinding corn but used for oilseed crushing by the late 18th century (Weinreb and Hibbert, 1995, 535). Rocque's map of 1746 showed all of the above including the nearest settlement which was around Poplar. Horwood's map of 1799 shows the site located along a short street named James Street (precursor to Manilla Street). A few houses are located along this street, but mainly along the south side (*i.e.* outside the Site). Seven appear to fall within the Site, which otherwise is still set within farmland. Approximately 150m north of the site the newly constructed West India Docks had been completed. In 1807, two of the main streets Robert Street and Alfred Street were formally laid down by Robert Batson junior. The ground south of Robert Street/Cuba Street was parcelled into freehold building plots, mostly 15ft by 60 ft, occupied by humble two-up two-down terraced cottages that were built to the edge of the pavement. Rear extensions were built only after many years and as late as the First World War many had no kitchen, scullery or wash-house (VCH *Middlesex* xliiii, 412).

Stanford's map of 1862 indicates urbanisation of the immediate area (although no individual buildings are shown). The Ordnance Survey (OS) 1st edition 25" map of 1869–75 shows the Site occupied by rows of houses, with rear yards, fronting onto Alfred Street to the south, Marsh Street to the west and Robert Street to the north. The Site looks typical of the development of the area to the east of Westferry Road, with ordered streets and rows of houses, whereas west of this road the buildings are of industrial type. The OS 2nd edition 25" map of 1896 shows a change in the north-west corner of the Site, where a larger building has replaced previous buildings. The OS 3rd edition 25" map of 1916 labels this building 'Club.' This was the Mill Wall Working Men's Club and Institute, opened in 1901 (VCH *Middlesex* xliiii, 415). The OS 25" map of 1949–51 shows some bomb damage, open plots along the Cuba Street and Manilla Street fronts and a small public house, The Prince Alfred, rebuilt in 1906, in the south-west of the site. The 1930s saw extensive clearance with the PLA acquiring and closing the eastern end of Cuba Street, demolishing houses and building a new road link between Manilla Street and Cuba Street in 1938–39 (*ibid.*). The OS 1:1250 map of 1973 shows no change in the eastern third of the Site and considerable

development in the remaining two thirds, where two large building blocks have been erected. The OS 1:1250 map of 1991 shows only four houses remaining in the south-east corner of the site.

## 2.2 Geoarchaeological background and geotechnical survey

An initial site visit was made by a MoLAS geoarchaeologist to examine the sediments retrieved from window samples (WSs) at Cuba Street. The purpose of the site visit was to examine the deposit sequence and interpret its depositional environment and archaeological significance in order to locate the evaluation trenches in areas of greatest potential.

Six boreholes were drilled by terrier rig to a depth of 4m below ground level (bgl) with refusal at one location (WS8). The WS positions were already laid out on the site and these data will be available from Card Geotechnics. Height data are not relevant to geotechnical works and ground surface is assumed to lie at +2.7m OD (benchmarks on 2001 OS provided by Ballymore are at +2.6 and +2.7m OD). There may be some variation between the top of the WSs and the spot height provides an approximate level.



Fig 2 Location of window sample boreholes

### *The deposit sequence*

The sequence of five **facies** comprises gravels (1) fining up into channel sands (2) and coarse sandy alluvial clay (3) which is overlain by a meter of made ground (5) in all window samples. In one intervention (WS10 to the west side of the site) manganese-rich, slightly gleyed alluvial clay is recorded over the weathered alluvium (facies 4)

and sandy upper alluvium in WS11. These two samples encompass the only deviations from the sequence represented in Table 1.

***Facies 1 – Late Devensian river terrace sands and gravels***

Yellow and brown small and medium-sized flint gravel with very coarse sands were recorded in all interventions from around 3m to the limit of excavation at 4m bgl. These deposits are thought to represent the upper horizons of the Late Glacial Shepperton Gravel.

*Surface of gravels 2.70 to 3.50m bgl (c 0m to -0.80 OD)*

Although the height of the gravel surface is known to vary on the Isle of Dogs from deep channels to sand islands (generally lying lowest closer to the river and higher nearer the floodplain edge) within the Cuba Street site boundary gravels occur at a relatively uniform height. The gravel unit recorded at the base of each WS fined up into sands, but boundaries were not always well-defined. Sediments were shaken out of the plastic tubes, adding to the approximation of the height measurement and deposit mixing. It is possible that some of the variability in the height of the gravel surface may be due to retrieval method and poor boundary definition. However, if the heights are correct the gravels surface appears to fall across the centre of the site.

The height is comparable to sites in the area such as the Guardian Press Centre site (MHR01) (Corcoran, 2002) and the former Tate and Lyle building (MMK02) (Ainsworth, 2002) where gravels are measured at around -1m OD, with high points recorded at +0.50 and 0m OD respectively. Deep channels such as that recorded at Mastmaker Road (MTM07) (at -2.30m OD), Masthouse terrace to the south (-6m OD) (Wilkinson, 1995) and MHR07 (-1m OD) were not encountered. It is possible that the site lies on a sand **eyot** between the river and the floodplain forming part of the river bank.

***Facies 2 – Early to mid-Holocene fluvial sands (c -0.80 to +1.10m OD)***

Fining up from the river terrace gravels brownish yellow very coarse sands with abundant sub-angular flint gravel were recorded. These sands are interpreted as freshwater sediments probably laid down within channels prior to the Iron Age. As such, this facies may represent early Holocene (or even late Pleistocene) relict mobile bars or low islands of the braided Thames, or bars (within-channel or side-bars) of a later meandering river. The position of the site on the outside of the meander of the Isle of Dogs (nearest the **thalweg**) suggests that facies 2 deposits are unlikely to represent point bars, as these build up on the inside of the bend. The depositional environment represented may be analogous to sand flats building up on the floodplain flat, possibly dating to the end of the last glaciation and start of the Holocene. Stabilisation of the land surface and weak soil formation may be indicated within the top of these sands by a zone of weathering evident in WS6 and WS9, suggesting exposure and plant growth (Table 1, unit 6.3).

***Facies 3 – Mid- to late-Holocene alluvial clay (c 0.50 to +1.90m OD)***

Minerogenic clays were the observed on site in every intervention (generally between 1 and 2m bgl), with no peat or organic remains encountered. The brownish grey very sandy silty clay contained iron-stained root casts and abundant flint clasts. The coarse, sandy texture of the alluvial clay suggests deposition by relatively high-energy

overbank flooding while the extent of weathering indicates that the sediments were subsequently prone to episodic (possibly seasonal) flooding.

This clay forms part of the layer of alluvium covering the area (BGS sheet 270), deposited from the prehistoric to medieval periods. At Cuba Street, these sediments are likely to correspond to the Late Bronze or Iron Age, representing salt marsh developing at the transition from freshwater to estuarine conditions in the Thames.

Accumulations of sand and clay-rich sand overlie clays at MTM07 (at -0.90m to -1.70m OD) suggesting a succession of channel re-activation and silting up. This may be the scenario represented by greyish yellow coarse sand with root channels and red iron-stained root casts in WS11 (unit 11.2) that overlies the weathered alluvium. Alternatively, this sand may represent the remnants of a **crevasse splay** or reworked levée-like deposit.

***Facies 4 – Late-Holocene gleyed alluvium (+1.20 to +1.40m OD)***

In one window sample (WS10) soft blue grey very sandy silty clay with abundant black manganese mottling overlay facies 3. This may represent an area of waterlogging or pooling. However, on the basis of one window sample this remains speculative, particularly as the deposit was not recorded in adjacent interventions.

***Facies 5 – Modern made ground***

Modern made ground truncates the sequence from approximately 1 to 2m bgl (+1.50 to +2.70m OD). Deposits likely to have been truncated include the post-medieval land surface and thick, re-deposited alluvium found during other archaeological evaluations in this part of the Isle of Dogs.

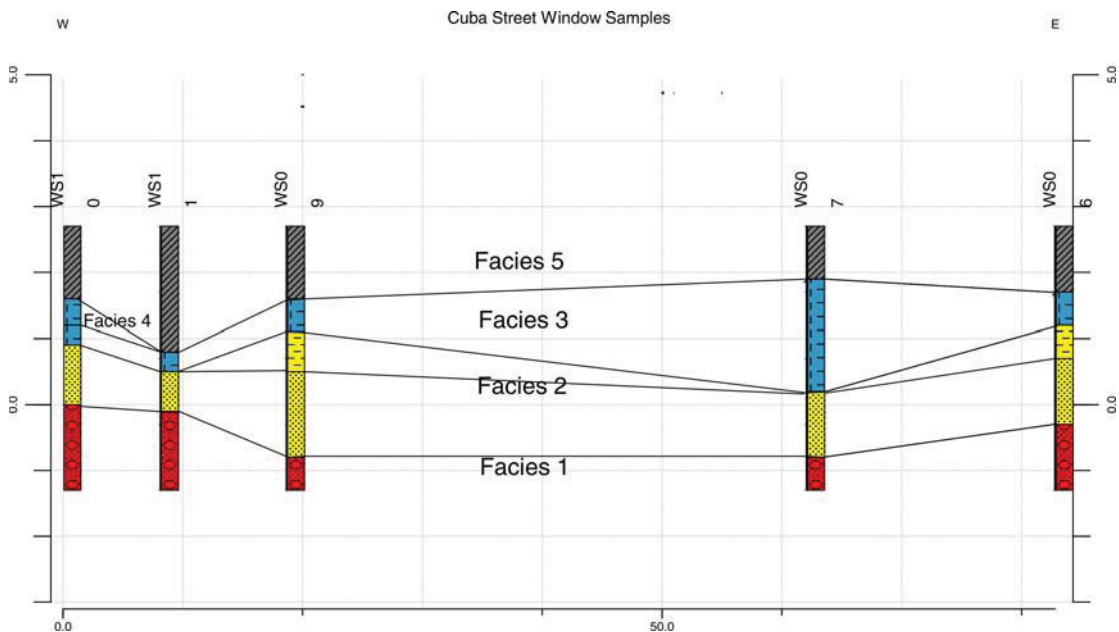


Fig 3 Transect through geological deposits from west to east

<b>Window Sample 6 (approximately 537241.39, 179883.54)</b>				
<b>Facies</b>	<b>Unit</b>	<b>Depth below ground surface (bgl) (m)</b>	<b>Description</b>	<b>Interpretation and period</b>
<i>c</i> +2.70m OD				
<b>Facies 5</b>	<b>6.1</b>	0.00-1.00	Clinker and brick crush	modern made ground
<i>c</i> +1.70m OD				
<b>Facies 3</b>	<b>6.2</b>	1.00-1.50	Moderate mid brownish grey sandy silty clay with occasional charcoal and medium to small unsorted flint and abundant reddened (iron-stained) root channels	Weathered, heavily rooted and iron-stained alluvium
<i>c</i> +1.20m OD gradational boundary				
<b>Facies 2</b>	<b>6.3</b>	1.50-2.00	Massive soft very silty clayey sand with iron-stained root channels	Interface between sands and clay. Channel sands fining up into alluvial deposits. Possible land surface stabilisation and weak soil formation
	<i>c</i> +0.70 mOD			
	<b>6.4</b>	2.00-3.00	Medium yellow sand with gravel content increasing with depth. Gravel is small to medium and unsorted	channel sands
<i>c</i> -0.30m OD				
<b>Facies 1</b>	<b>6.5</b>	3.00-4.00	Moderately compact yellow brown sands and gravels. Sands are very coarse, matrix-supported with small, sub-angular unsorted flint gravel	river sands and gravels fining up into channel sands - Devensian
<i>c</i> -1.30m OD				

*Table 1 sequence of deposits in WS6 representative of sequence across the site*

### *Discussion*

On the basis of the WS survey it is not possible to outline clear areas of higher or lower potential within the site boundary, although the profile recorded is typical of Isle of Dog's sites lying on raised gravel and therefore has some general prehistoric archaeological potential. Historic occupation layers, such as the post medieval land surface, will have been truncated by modern construction although there is still potential for survival of deposits relating to the first terraced houses to occupy the site (shown on Horwood's map of 1799 in the desk based assessment report).

The potential for prehistoric archaeology and the likelihood of preservation is dictated largely by the relief of the underlying gravel body and although there are no



prominent topographic features on the site, deep channels are known to the east, e.g. that at MHR01 lying less than 200m to the southeast. The gravel surface must therefore dip to the east of the site boundary by over 2m and to the west at the edge of the Isle of Dogs. There is some indication of an eastward drop in gravel height, but the relatively consistent level suggests that the site lies on the floodplain flat between the Thames and smaller, deep channels recorded on sites in the vicinity.

In terms of the overlying sediments, fluvial sands may represent late Pleistocene or early Holocene channel or side-bars of the Thames or sand flats building up behind the bank of the river. A similar situation is recorded at MMK02 where sands accreted creating a topographic high (at +1.3m OD). These would have remained as dry land surface, upon which a prehistoric soil formed, only experiencing episodic overbank flooding in the historic period (Ainsworth, 2002). The weathered horizon within sands at Cuba Street may represent an immature soil and, although less developed than the MMK02 soil, lies at a similar height OD. As such, the area may have made a good site for prehistoric occupation although no artefacts were encountered and (due to the minerogenic nature of the profile) ecofactual evidence is likely to be sparse.

The alluvial clay of facies 3 probably represents the slow build up of sediment caused by flooding within a salt marsh after the Bronze Age. Although a general rise in river levels is recorded over the Holocene, a decrease in flood events is invoked to explain heavy weathering. This could be due to a decrease in river levels or the fact that sediment build up created a raised area (to approximately +1m OD) that may have either formed part of the river bank or remained protected or buffered behind the bank. It is unlikely that archaeological structures or features would be present within this alluvium.

The potential for timber trackways (such as those found at Atlas Wharf (Lakin, 1998) and Fort Street (WA, 2000)) is therefore low. This is due to the fact that high land is unlikely to require fording and dry, minerogenic depositional environments are unsuitable for wood preservation. However, gravel highs or eyots remain areas of prehistoric archaeological potential, and at least low level prehistoric activity is known nearby at Westferry Road (WFY99) where fire-cracked flints were found (Dawson, 2007). If archaeology is present it is likely to occur at the interface between sands and clays (facies 2 to 3) on or within the zone of weathering that may represent a land surface.



## 3 The evaluation

### 3.1 Methodology

All archaeological excavation and monitoring during the evaluation was carried out in accordance with the preceding *Method Statement* (MoLAS 2008), and the MoLAS *Archaeological Site Manual* (MoLAS 1994).

The evaluation trenches were sited in areas of geoarchaeological/archaeological potential, as indicated by the geotechnical monitoring exercise (detailed in section 2.2).

Trenches were excavated by machine by the contractors, supervised by a MoLAS archaeologist. They were hand cleaned, in section and plan. Deposits were probed by hand and a *sondages* (small excavations to deeper layers) dug by machine and by hand.

The locations of evaluation trenches were recorded by MoLAS offsetting from adjacent standing walls observable OS 1:1250 map.

A written and drawn record of all archaeological deposits encountered was made in accordance with the principles set out in the MoLAS site recording manual (MoLAS, 1994). Levels were calculated by a traverse from the OS Bench Mark on the Pumping station wall on Westferry Road and closed on the Manila Road spot height.

The site has produced: 1 trench location plan and 2 trench record sheets with 1:100 and 1:50 scaled plans as appropriate.

The site finds and records can be found under the site code CBZ08 in the MoL archive.

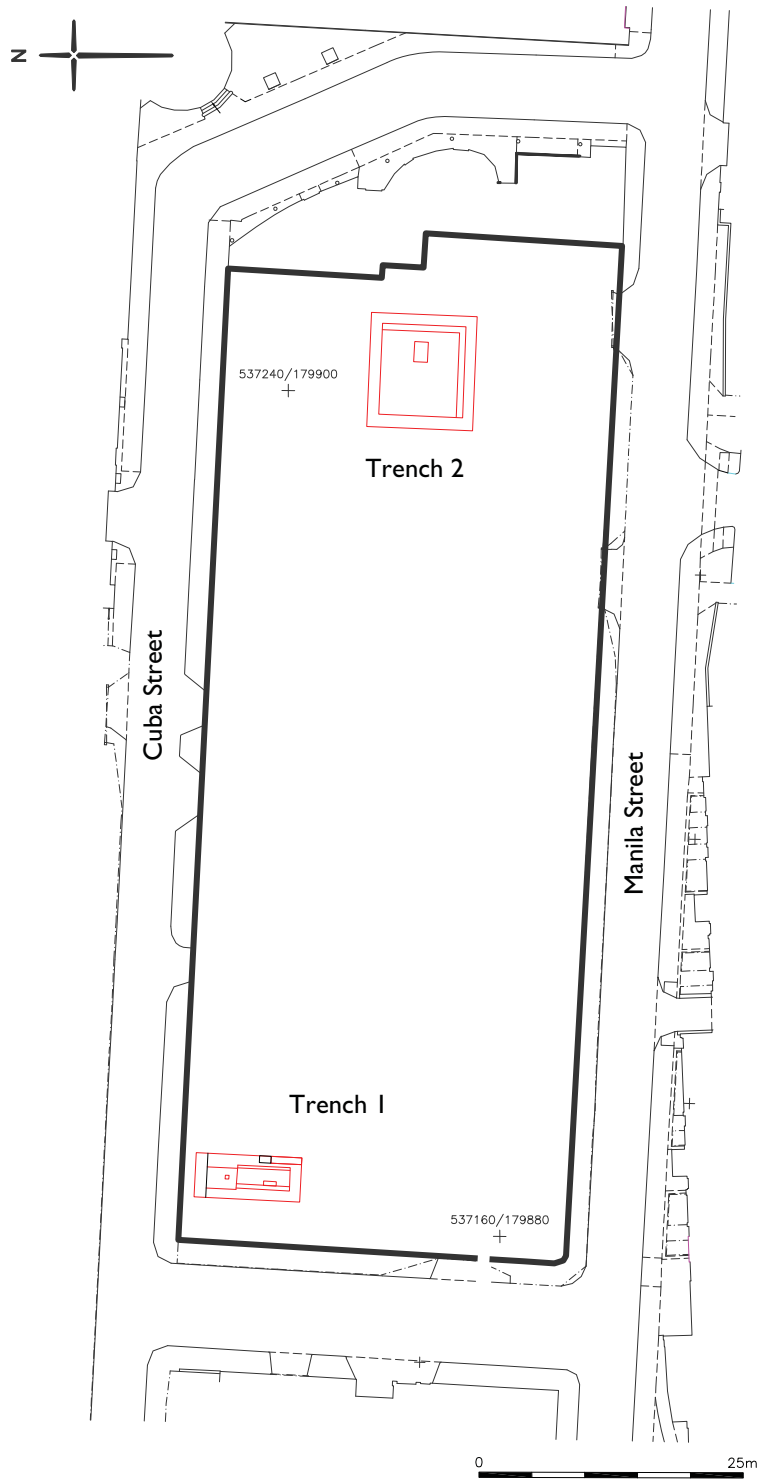



Fig 4 Location of observations

### 3.2 Results of the evaluation

<i>Trench 1</i>	
Location	West
Dimensions	10m N-S by 4.2m E-W 2-2.4m depth (width <i>sondage</i> to 2.75m)
Modern ground level/top of slab	2.66m OD
Base of modern fill/slab	Tarmac 100mm over concrete 200mm. 19th-c coal ash with a 100mm-thick hard broken brick & clinker surface at 2.08m OD - with lime mortar patch below . This butted against a 1.1m OD concrete stanchion base the top of which - at 2.425m OD - was within modern crushed concrete
Depth of archaeological deposits seen	None
Level of base of deposits observed and/or base of trench	0.275m OD
Natural observed	Terrace Gravel +0.015m OD. Above which was brown sand with horizontal grey silt laminars. There was a diffuse boundary to brown clayey sand - modified by frequent grey roots - at 0.4m OD. This was within main trench base = 0.275-0.66m OD south to north. This fined-up to heavily rooted brown sandy clay at 1.75m OD.
	
<p><i>Fig 5 Southern sondage to Terrace Gravel and trench through later sediments</i></p>	

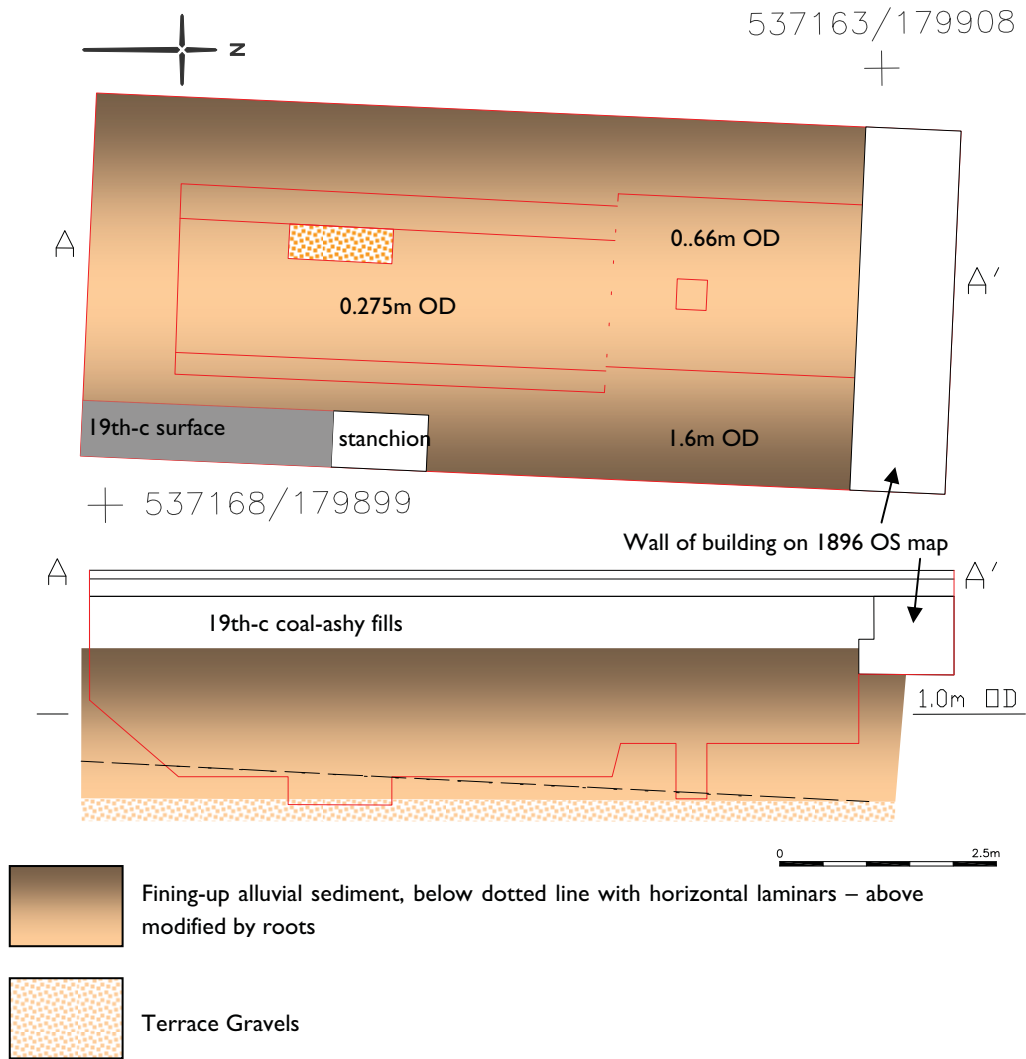


Fig 6 Trench 1 plan (above) and section (below)

Trench 1 was excavated in two halves stepping-in after 1m. The north half to 0.66m OD and the southern to 0.275m OD, after a further smaller step. The north half had a hand-dug *sondage* to 0.02m OD and the south a machine-excavated *sondage* to 0.01m below OD (-0.01m OD). The southern *sondage* exposed terrace gravel at 0.015m OD. Above which was a fining-up alluvial sediment to 1.75m OD. Below the dotted line (see above) the sediment had horizontal grey silt laminars but above it was modified by increasing root disturbance, which also concentrated in various areas. No prehistoric land surfaces or prehistoric remains were encountered. Above 1.75m OD was 19th-c coal-ash fill with a 100mm-thick shard surface of broken bricks and clinker at 2.08m OD. This butted against a 1.1m-wide concrete stanchion the top of which (at 2.125m OD) was within modern crushed concrete.

<i>Trench 2</i>	
Location	East
Dimensions	10.8m by 10m by 2m depth (with <i>sondage</i> to 2.8m)
Modern ground level/top of slab	2.353m OD
Base of modern slab	2.15m OD
Depth of archaeological deposits seen	None
Level of base of deposits observed and/or base of trench	0.375m–0.5m OD
Natural observed	Terrace Gravel at -0.33m OD (330mm below OD). Fining-up from coarse sand to clay. Lt brown sand with freq calcite nodules, clay lenses (diagenetic?) and subangular pebble horizontal spreads to 0.75m OD. Diffuse or no boundary between brown clayey sand below 0.9m OD and sandy clay above. No defined silt level. Fining to brown clay at 1.5m OD. Several areas root disturbance leaving both clay and iron-rich patches and possibly increasing clay transport obscuring silt zone.



*Fig 7 Trench 2 looking north*

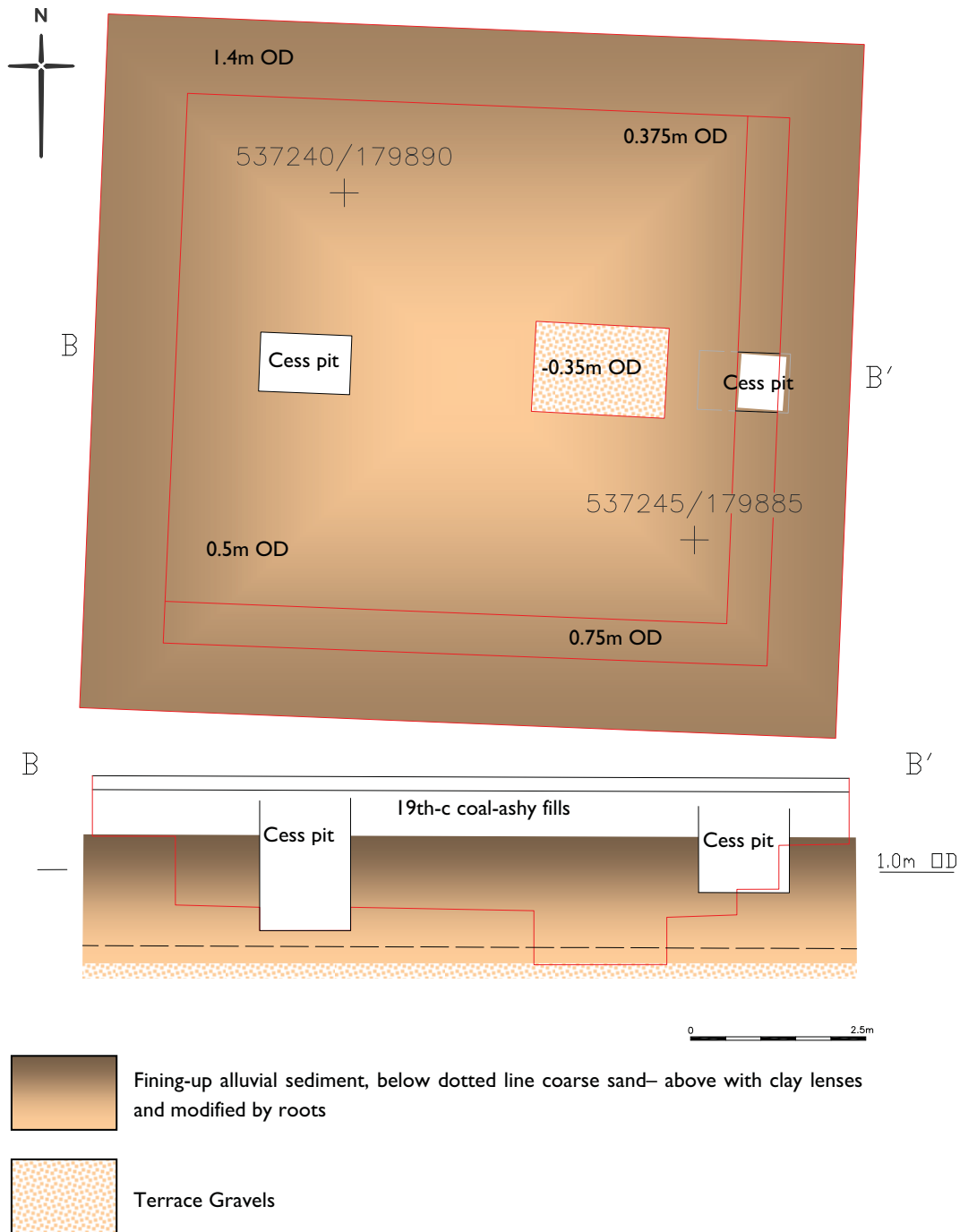


Fig 8 Trench 2 in plan (above) and section (below)

Trench 2 was excavated to a base at 0.375m–0.5m OD with steps at 0.75m and 1.4m OD from 2.353m OD. A *sondage* to -0.35m OD (350mm below OD) was excavated by machine and flooded with groundwater premeating Terrace gravels as soon as they were exposed. Above Terrace Gravel (0.33m OD) was a fining-up alluvial sediment to 1.5m OD. Below the dotted line (see above) the sediment had Lt brown sand with freq calcite nodules, clay lenses (diagenetic?) and subangular pebble horizontal spreads. No prehistoric land surfaces or prehistoric remains were encountered. Above 1.7m OD was 19th-c coal-ash fill with 2 cess pits 1.3m long and 850mm wide (west) and 800mm wide (east). The western pit was dug to 0.13m OD and east to 0.7m OD. They were both filled with loose brown cessy fills with characteristic 19th-c tobacco



pipe and willow pattern pottery (not retained). A 200mm-thick shard surface of modern crushed concrete to 2.353m OD covered this part of the site.

### 3.3 Geoarchaeological report

The deposit sequence is tabulated below (Table 2). The sequence defined during the geotechnical watching brief has been used as the basis for numbering the facies seen in Trench 2. The profile comprised gravels (1) fining up into a series of coarse sands (2) and coarse sandy alluvial clay (3) which is overlain by a meter of 19th century fill (5). The manganese-rich, slightly gleyed alluvial clay recorded over the weathered alluvium in one of the window samples (facies 4) was not encountered, but may be seen in Trench 2.

#### *Facies 1 – Late Devensian river terrace sands and gravels (surface at -0.33m OD)*

Gravels were not observed in section, as water ingress prevented the trench being excavated below +0.49m OD. A slot in the centre of the trench reached gravels at a height of -0.33m OD. River terrace Shepperton Gravel sands and gravels were described during the geoarchaeological watching brief as yellow and brown small and medium-sized flint gravel with very coarse sands were recorded in all interventions from around 3m to the limit of excavation at 4m bgl.

#### *Facies 2 – coarse clayey sands (c -0.33 to +1.28m OD)*

Mottled brown, orange and grey coarse clayey sands fine up from gravels. The deposit becomes darker up-profile with a reduction in white flecks (precipitated calcite) and an increase in orange iron minerals. The sands, previously interpreted as pre-Iron Age (possibly early Holocene) freshwater channel sediments, may represent crevasse splay breaching the river at the meander bend, intertidal mudflats or possibly a levée.

In places within the trenches, bluish clay-rich patches were exposed by the machine, and orange mottled patches were obvious. Having seen these in section and plan, it appears weathering is post-depositional pertaining to vegetation growth and root action rather than the presence of a former land surface. The very gradational nature of the deposit boundaries within the sand facies (units 1.2-1.4) seems to suggest gradual accumulation of sediment. The profile most likely represents intertidal sand flats on the foreshore, crevasse splay or possibly a levée building up over the late prehistoric and early historic periods, with flood episodes carrying the larger clastic flint material. Considering the absence of archaeological material, an OSL date could not be justified at this stage of work. However, constraining the age date of deposition or rate of accumulation would definitely be an objective of future geoarchaeological work in the area.

#### *Facies 3 – late-Holocene alluvial clay (c +1.28m to +1.48m OD)*

There is little difference between this deposit and the underlying dark sandy clay/clay sand. The deposit contains iron-stained root casts, large roots and the first clear signs of CBM and the sediments are therefore of a later date than assumed on the basis of window sampling (i.e. historic/late historic rather than Late Bronze or Iron Age) and probably relate to Stepney marsh.



***Facies 5 – 19th century made ground/fill***

Modern made ground truncates the sequence from approximately 1 to 2m bgl (+1.55 to +2.75m OD). Deposits likely to have been truncated include the post-medieval land surface and thick, re-deposited alluvium found during other archaeological evaluations in this part of the Isle of Dogs.

<b>Table 2</b>						
<b>Facies</b>	<b>Unit</b>	<b>Thickness (m)</b>	<b>Description</b>	<b>Interpretation</b>		
<i>c</i> +2.35m OD modern ground level						
<b>Facies 5</b>	<b>1.6</b>	0.87	Tarmac/hardcore (0.10m thick) over firm black clinker and brick crush-rich gravelly silt and clay with CBM, occ Post-med pipes and crockery	19th century made ground		
<i>c</i> +1.48m OD historic ground level						
<b>Facies 3</b>	<b>1.5</b>	0.20	Moderate to firm very friable dark brownish grey silty sand with orange-stained root casts, small flecks of CBM and large roots visible	Post-med weathered alluvium forming historic vegetated land surface		
<i>c</i> +1.28m OD very gradational boundary						
<b>Facies 2</b>	<b>1.4</b>	0.29	Moderate to firm dark brownish grey silty sand with orange-stained root casts	Gradual continuum of sediments fining up from gravel (contacts very gradational and largely arbitrary). Weathered deposits, probably alluvially derived or intertidal sand flats, crevasse splay sands or possibly levee deposits (higher energy overbank deposits). Weathering thought post-depositional vegetation growth and root action rather than <i>in-situ</i> land surface		
	<i>c</i> +0.99 mOD very gradational boundary					
	<b>1.3</b>	0.20	Moderate mid to dark grey mottled coarse clayey sand with small burnt flint. Flint-rich patches and burnt flint clast are likely to have been carried and deposited with sand by flood episodes			
	<i>c</i> +0.79 mOD very gradational boundary					
	<b>1.2</b>	1.12	Upper approx 0.40m of deposit described as moderate light orange brown coarse clayey sand with abundant orange mottles, frequent white calcite mottles and dark grey vertical root casts. Roots visible in section. Lower approx 0.70m of deposit below main limit of excavation, exposed in slot in middle of trench, and not observed clearly in section (due to water ingress)			
<i>c</i> -0.33m OD						
<b>Facies 1</b>	<b>1.1</b>	-	Gravels only seen in window samples	river sands and gravels fining up into channel sands - Devensian		

Table 2 sequence of deposits

### **3.4 Summary of results**

The earliest archaeological remains found in-situ are those of 19th-c industrial buildings in trench 1 (marked on the 1896 OS map (reproduced in desk based assessment MoLAS Sept 2007)) and cess pits in trench 2, associated with ground-raising coal-ashy dumps. This site is outside the area used to dump the upcast from the construction of the West India Docks. The site appears mostly empty on contemporary map and was probably more valuable as pasture than as a dump.

No remains of earlier terraces (marked on Horwood's map of 1799) were discovered in the trenches.

The only other archaeological remains are those of a few random pieces of burnt flint, occurring in spreads of natural flint pebbles within an alluvial sequence. The flint is probably derived from nearby prehistoric sites and its presence on this site merely indicates that the natural sediment was formed within the period when this area was settled. The alluvial sequence is typical for a meandering inland river which becomes tidal as a result of rising sea levels. Possible crevasse splays and levees are significant as these types of overbank deposits are rarely recorded in the London region even though they typify meandering rivers. This is probably because elsewhere the tidal Thames has eroded floodplain deposits with tidal creeks to form the London islets or "eyots" (eg Bermondsey).

### **3.5 Assessment of the evaluation**

GLAAS guidelines (English Heritage, 1998) require an assessment of the success of the evaluation 'in order to illustrate what level of confidence can be placed on the information which will provide the basis of the mitigation strategy'. In the case of this site trenches were spanned the site and were sufficient to give a coherent picture of subsurface deposits in general.

## 4 Archaeological potential

### 4.1 Realisation of original research aims

The following research aims were addressed thus:

- *What are the earliest deposits identified?*

Above Terrace Gravels was an undated alluvial sequence, which contained possible overbank flood deposits (including horizontal patches of gravel) at levels that would have been daily below high tide levels from the late Iron Age onwards.
- *Is there any evidence of prehistoric occupation on the site?*

No. A few pieces of fire-cracked flint in the alluvium, that had been washed in with other sub-angular flint pebbles in horizontal spreads, indicate that there was probably nearby settlement before that sediment was deposited.
- *How do the results refine our current understanding of the past topography of the site?*

The alluvial sequence is typical of an active, mobile meandering river. The subsequent erosion by tidal creeks has – ironically – often given the impression of static Pleistocene islands covered by massive estuarine clay deposits in other parts of London.
- *Does higher, drier, ground exist on the site and is there evidence of prehistoric occupation in this area?*

The sandy deposits do not lie at particularly high levels and there is no evidence of prehistoric settlement. This is not to say that the area was not used in the past as levees were ideally suited to cultivation by the prehistoric scratch plough (or *ard*) as ley agriculture (alternating pasturage with fodder crops and cereal or vegetable crops).
- *Does any environmental evidence exist in cut features – and what is its potential for providing information about past activities and land-use on the site?*

No. The only cut features observed were 19th-century cess pits, which contained no environmental evidence.
- *Is environmental evidence preserved in wetland marginal deposits on the site and what is its potential for past landscape reconstruction and dating?*

The main evidence for reconstructing the past environment of the site is preserved in the detailed examination of the sediment as it was exposed. Sedimentary dating techniques such as optical stimulated luminescence or AMS-radiocarbon were not appropriate in this instance.

## **4.2 General discussion of potential**

The archaeological potential of the site is confined to a regionally significant addition to Thames sedimentary sequence and was fulfilled by the evaluation.

## **4.3 Significance**

No significant archaeological remains survive on the site. The late 19th-c industrial building foundations and cess pits are of limited local significance. The presence of washed-in, fire-cracked flints, in the alluvial sequence, indicates that there is potential for finding prehistoric remains in the vicinity of the site.

## **5 Proposed development impact and recommendations**

The proposed redevelopment involves the creation of a single basement across most of the site and piled foundations supporting a multi-storeyed building. This will impact upon sub-surface deposits. Deep drainage and likely temporary works, such as tower-crane foundations, are also likely to impact upon sub-surface deposits.

The evaluation has indicated that occasional post-medieval features survive on the site, along with palaeoenvironmental material contained within the alluvial sequence. These deposits have been fully assessed as part of the evaluation and it is recommended that no further archaeological work is necessary on the site.

The decision on the appropriate archaeological response to the deposits revealed rests with the Local Planning Authority and their designated archaeological advisor.

## 6 Bibliography

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## 7 NMR OASIS archaeological report form

OASIS ID: molas1-41414

### Project details

Project name	Cuba Street, London E14
Short description of the project	Evaluation. Alluvial sequence from Terrace Gravels 0.015mOD to -0.38m OD fining up to sandy clay at 1.5m-1.7m OD. Within which were gravel spreads, overbank deposits (levees or crevasse-splay) which included washed in fire-cracked flint. The sequence was cut by 19th-c cess pits and industrial building foundations (which also cut through coal-ash - nightsoil - land-raising dumps) to the surface at 2.3m - 2.6m OD.
Project dates	Start: 15-04-2008 End: 24-04-2008
Previous/future work	No / Not known
Any associated project reference codes	CBZ08 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Other 15 - Other
Monument type	CESS PIT Post Medieval
Methods & techniques	'Survey/Recording Of Fabric/Structure'
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	Pre-application

### Project location

Country	England
Site location	GREATER LONDON TOWER HAMLETS TOWER HAMLETS Cuba Street, London E14
Postcode	E14
Study area	4000.00 Square metres
Site coordinates	TQ 3718 7988 51.5006859876 -0.02339705562790 51 30 02 N 000 01 24 W Point
Height OD	Min: 1.50m Max: 1.70m

## OASIS ID: molas1-41414 cont'd

**Project creators**

Name of Organisation	MoLAS
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	MoLAS
Project director/manager	Jo Lyon
Project supervisor	David Sankey
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Environ for Ballymore

**Project archives**

Physical Archive Exists?	No
Digital Archive recipient	LAARC
Digital Media available	'GIS','Images raster / digital photography','Images vector','Text'
Paper Archive recipient	LAARC
Paper Media available	'Notebook - Excavation',' Research',' General Notes'
Paper Archive notes	2 trench sheets with details of level traverses and scale drawings of trenches with location offsets

**Project bibliography 1**

Publication type	Grey literature (unpublished document/manuscript)
Title	Cuba Street, Isle of Dogs, London E14: archaeological evaluation
Author(s)/Editor(s)	David Sankey
Date	2008
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