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. Although remains of human settlement were not identified the watching brief exposed undisturbed peat and alluvial deposits consistent with the remains of buried natural landscapes possibly dating to the prehistoric period and later. The watching brief also revealed extensive areas of recent made ground with little archaeological potential.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 Between the 13th October and the 6th November 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 brief was set by The Greater London Archaeology Advisory Service (GLAAS) recommending an archaeological watching brief be undertaken during this phase of geotechnical investigations to monitor and record any archaeological remains exposed within the test pits.

1.1.3 OA prepared a Written Scheme of Investigation detailing how it would undertake the watching brief in line with a specification produced by Richard Hughes, archaeological consultant for Ove Arup in agreement with a brief set by GLAAS.

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 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’ onto 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, intertidal saltmarsh and mudflats. The currently adopted stratigraphic sequence for the Lower Thames is based on work undertaken by Devoy (1979, 1980). Borchole 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 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 (Haggart 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 Whitaker, 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 (mineralogic 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). The following is a concise summary of this archaeological background.

1.4.2 Recent excavations in east London, principally by the former Newham Museum Service have produced evidence for Neolithic occupation in this area. 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.

1.4.3 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.

1.4.4 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.

1.4.5 By the end of the Anglo-Saxon and medieval period much of the floodplain of East London was by now marshland due to the ever rising level of the Thames. The site of Sudbury Manor, founded in the early 12th century is located to the north of the site.

1.4.6 In the post-medieval period the site became a zone for industrial expansion. 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 tilt construction of the Royal Victoria Dock, constructed between 1850 and 1855. The site itself was a dock related to the Royal Victoria Dock. Much of the area was badly damaged in 1917 when 50 tons of TNT ignited at the chemical works to the south.
2 PROJECT AIMS AND METHODOLOGY

2.1 Aims

2.1.1 To clarify the nature and extent of any modern disturbance and intrusion on the site.

2.1.2 To determine the presence or absence, location, extent, date, character and state of preservation of any archaeological remains within the site.

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

2.1.4 To identify and record evidence of peat or alluvial deposits to assist in the updating of the Halcrow cross section.

2.1.5 The results of the watching brief investigation to be presented in such a way that they can inform and be incorporated into the wider research framework for London as set out in ‘A Research Framework for London Archaeology’ (MoLAS and English Heritage 2002).

2.1.6 To make available the results of the watching brief.

2.2 Methodology

2.2.1 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.

2.2.2 Excavation of test pits was monitored by an archaeologist. Due to several geotechnical teams operating consecutively, monitoring covered areas and results of these pits are reliant on the test pit logs taken by Soil Mechanics.

2.2.3 OA was advised of the potential for high levels of water contamination due to the previous industrial nature of the site. Palaeo-environmental samples were therefore not taken but individual test pits were recorded as potential sample areas in future.

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

2.2.5 The location of the test pits was surveyed in prior to the watching brief using an EDM.

2.2.6 Site procedures were undertaken in accordance with the requirements of the 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.
3 RESULTS

3.1 Description of deposits

3.1.1 All the test pits encountered layers of made ground of varying depths. The depth of these layers were such that only 52 out of the total of 124 test pits reached deposits of archaeological interest. 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.

3.1.2 The test pits can be divided into three categories (Fig.2):

- a) Sterile pits consisting solely of made ground, distributed in a broad band around the Royal Victoria Dock.

- b) Pits producing alluvial deposits below the made ground, but unclear whether these deposits are in situ or redeposited, suggesting a poor potential for archaeology. These pits were located on the outer edge of the sterile pits.

- c) Pits producing in situ alluvial deposits and peat giving a fair to good potential for archaeological remains surviving and a good potential for palaeoenvironmental 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

3.1.3 These consist of substantial deposits of dredged river 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

3.1.4 These consist of 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 pit for safety reasons meant that it was impossible to determine whether they were deposited in situ or possibly redeposited, hence they can only be given a poor potential for archaeology. 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 dredged river material. These deposits were then sealed by the existing hard standing.

Type c

3.1.5 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 overlaid 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). These deposits have a fair to good potential for archaeology and paleo-environmental sampling. As in the Type b pits the lower deposits were overlain by substantial layers of made ground consisting of dredged river material of up to 3.0 m in depth, capped by the present day surfaces.

3.2 Finds

3.2.1 A number of datable finds were observed from within the layers of made ground during the test pitting. All these artifacts were of 19th and early 20th century in date and were probably imported within the material used for ground make up. The finds were noted but were not retained. No artifacts were observed within the alluvial deposits.

3.3 Palaeo-environmental remains

3.3.1 Alluvial and peat deposits, exposed below the made ground have the potential for survival of paleo-environmental remains. Samples of these deposits were not taken due to the potential high levels of contaminated groundwater.

4 Discussion and Conclusions

4.1.1 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

Aim 1: To clarify the nature and extent of any modern disturbance and intrusion on the site.

4.1.2 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 pit locations the base of made ground was not encountered and no in situ alluvial deposits were exposed.

Aim 2: To determine the presence or absence, location, extent, date, character and state of preservation of any archaeological and palaeo-environmental remains within the sites.

4.1.3 No archaeological remains were identified during the watching brief. However due to the limited extent and depth of the excavations, the watching brief is not considered to be wholly reliable. There is a possibility that archaeological remains may still survive deeply buried beneath deposits of made ground. In addition, the method of excavation, employing a toothed bucket fitted to the mechanical excavator, together with limited access due to safety restrictions, greatly inhibited examination of these lower deposits.
4.1.4 The layers of peat, recorded in test pits TPA1, TPA2, TPA3, TPA5, TPC8, TPC17, TPC18, TPC28, TPC31 and TPD2 may represent a period of drier conditions at these locations 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 people. The laminated nature of the overlying silt-clay within these test pits suggests these deposits were laid down in a low-energy environment possibly at the interface between dry and wet ground.

4.1.5 Marginal locations, for example the edge 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.

4.1.6 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. The waterlogged condition of the peat and alluvial deposits recorded at Thamesmead offers the potential for good survival of palaeoenvironmental evidence in the form of plant remains, insects and pollen. Clearly the potential of this evidence would be greatly enhanced if sampled in association with archaeological remains.

*Aim 3: To determine the OD height of features and deposits encountered.*

4.1.7 Unfortunately no OD levels were taken by the geotechnical engineer during the fieldwork.

*Aim 4: To identify and record evidence of peat or alluvial deposits to assist in the updating of the Halcrow cross section.*

4.1.8 The limited exposure of undisturbed peat and alluvial deposits together with the absence of datums and radiometric dating, means the interpretation of these deposits with reference to existing stratigraphic models for the region is limited. However it is likely, based on stratigraphy, that the organic deposits date to the prehistoric period and as such may tentatively be related to Devoy’s Tilbury IV period of peat formation. However, in the absence of artefactual material the overlying alluvial silts-clays could date from between the late prehistoric though to the medieval period.

*Interpretation*

4.1.9 The distribution of the sterile pits around the Royal Victoria Dock and the Pontoon Dock suggests that their construction made use of an area of natural low lying ground, possibly a river or creek inlet, with the surrounding area built up using large quantities of imported material.
4.1.10 The location of the pits with poor archaeological potential (*Type a*) on the western, southern and eastern edges of this area is a probable indication of the disturbed nature of this transitional area.

4.1.11 The location of the pits with good archaeological potential (*Type c*) to the west and east of the sterile area is an indication of higher ground levels and probably represents the two banks of the original inlet involved in the construction.

*Further work*

4.1.12 By plotting the test pits onto a plan of the area, contours of archaeological potential can be produced (Fig.3) and further archaeological work prioritized.

4.1.13 Ground extending for approximately 100 m to the south, west and east of the Victoria and Pontoons Docks and the north-east quadrant of the development area can be considered to be of low priority due to the depth of made ground.

4.1.14 The western and north-western edges of the development area and the south-east quadrant of the development area bounded by North Woolwich Road, Burt Road and Connaught Bridge Road will be considered as high priority due to extensive deposits of alluvial material and peat beds exposed within test pits in this area and warrant further archaeological investigation.
APPENDICES

APPENDIX 1  BIBLIOGRAPHY AND REFERENCES

Bates, M R, and Whittaker, K, in press Landscape evolution in the lower Thames Valley: implications for the archaeology of the earlier Holocene period

Bridgland, D R, 1994, Quaternary of the Thames


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Meddens, F M, 1996 Sites from the Thames estuary wetlands, England and their Bronze Age use. Antiquity 70, 325-34.


OA, 2003 Silvertown Quays, Newham, London Written Scheme of Investigation for an archaeological watching brief


Soil Mechanics, 2004 *Silvertown Quays* Ground investigation test pit logs.


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 director/supervisor: Callum Mitchell    Project manager: Jon Hiller
   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
    alluvial/peat deposits consistent with buried landscapes.

7) NATURAL
   Type: Terrace Gravels.
   Height above Ordnance datum: Approx -2.0 m below Ordnance datum
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 x 70
- Correspondence
- MScripts (unpub reports, etc)
- Bulk finds
- Small finds
- Soil samples
- Other Geotechnical 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: [Signature]

DATE: 21/1/04

NAME: [Name]
Figure 1: Site location

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