

C263 ARCHAEOLOGY LATE EAST Interim Statement

Sample Excavation and Targeted Watching Brief

North Woolwich Portal XSV 11

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1 Introduction

This Interim Statement covers the sample excavation of two trenches and a targeted watching brief so far completed at North Woolwich portal by the Museum of London Archaeology (MOLA). The North Woolwich portal is located within the existing railway corridor of the former North London Line (NLL), between Factory Road and Albert Road in the London Borough of Newham, National Grid Reference 542700 180000.

The works were undertaken in two stages. Stage 1 involved a targeted watching brief (TWB) during ground reduction within the portal to enable construction of capping beams. Stage 2 involved the sample excavation of two trenches one initially measuring 25m x 4m and the second measuring 16.64m x 6m, later stepped in to a reduced length of 13.90m x 4.40m and the removal under TWB conditions of the deposits around and between the two sample excavation trenches.

All fieldwork was conducted between 08/05/13 to 11/07/13, directed by MOLA Senior Archaeologists Mike Tunnicliffe and Danny Harrison with assistance from MOLA archaeologists and geoarchaeologists.

The event code (sitecode) is XSV11.

This document is an interim statement of the results of the fieldwork so far completed at North Woolwich Portal. A further two trenches will be excavated and a targeted watching brief will be carried out, further towards the west, within the portal footprint at a later date (TBC). More extensive background, results, and conclusions will be included in the Fieldwork Report which will be submitted within six weeks of the end of fieldwork.

The fieldwork was carried out in accordance with:

- The Crossrail Generic Written Scheme of Investigation: Archaeology Generic Written Scheme of Investigation, Doc No. CR-PN-LWS-EN-SY-00001, 2009.
- A Crossrail Site-specific Written Scheme of Investigation (SS-WSI): C122-OVE-T1-GMS-CR146-50003.
- Crossrail, Archaeology, Specification for Evaluation & Mitigation (including Watching Brief), Doc. No. CR-PN-LWS-EN-SP-00001, v. 0.3, 26.06.09
- An Archaeological method Statement MOLA, C263 Archaeology Late East, Method Statement for North Woolwich Portal, (XSV 11) Document Number: C263-MLA-X-GMS-CR146_PT004-50001.

2 Site Methodology and fieldwork objectives

2.1 Evaluation methodology and sampling method

Modern overburden was removed by the Principal Contractor by machine under archaeological supervision by MOLA Senior Archaeologists. The two targeted watching briefs in Stages 1 and 2 were carried out in areas where the density of archaeological features or deposits were not considered of sufficient significance to warrant investigation prior to construction and in areas not included in the sample excavation. The watching briefs ceased at the floodplain gravels (River Terrace Deposits).



The two trenches, 3 and 4, were set out by Crossrail surveyors. The trenches were orientated roughly east to west and positioned on the central line of the portal in the eastern half of the portal footprint. Both trenches were located over the area of a probable gravel eyot which had been previously identified via archaeological deposit modelling based on borehole analysis. The trenches were dug in controlled spits measuring c 100 - 300mm in thickness using a toothless machine bucket. Deposits were hand cleaned to ascertain the presence or absence of archaeological deposits within each horizon. The most representative trench section from each trench was drawn at 1:20 scale.

The sampling strategy aimed to take continuous samples through the whole Holocene sequence in the trench. This was done by the geoarchaeological team using monolith tins. Further bulk samples were taken where deemed necessary, either for the purposes of collecting environmental (biological) material or artefactual material.

3 Provisional Results

All levels in this interim report are quoted in metres Above Tunnel Datum (m ATD). Tunnel Datum is calculated as being 100m above Ordnance Datum e.g. 1m OD = 101m ATD

3.1 Targeted watching brief

The concrete slab covering both Stages 1 and 2 was broken out and machined away. This was found to be directly on top of a layer of modern crush. The level of the top of the slab was 101.9m ATD with the whole depth of overburden being approximately 1.50m. It was anticipated that the remains of the Victorian North London Line or buildings associated with it might be exposed during this stage of the ground reduction, however none were seen.

Directly under the overburden was a grey soft clay/silt. This was seen at 100m ATD in Stage 1 and at 100m ATD in Stage 2. The depth of this deposit varied from 0.7m to over 1.50m in places. Overall it was roughly horizontal. The layer contained large quantities of wood in the form of tree trunks, branches and twigs (Photo 1). These were all randomly distributed, and likely deposited along with the waterborne silt during periods of inundation or overbank flooding from channels within or near the site. This would imply that the timber and wood fragments derived from environments potentially some distance from the site.

Further ground reduction exposed a layer of dark brown, friable peat underneath the clay / silt. The peat was seen at 99.9m ATD in Stage 2 and 99.7m ATD in Stage 1. The peat also contained large quantities of wood, again in the form of tree trunks and branches. The peat was machined down to a depth of 97.80m ATD in Stage 1 (area of Trench 4) and 99.5m ATD in Stage 2 (area of Trench 3). At these two depths the trenches were marked out in preparation for the sample excavations. Further targeted watching briefs were carried out as the ground around the trenches was reduced down to the natural gravels at c.96.60mATD.

The clay/silt and peat sequences were devoid of any archaeology being the result of natural depositional processes.

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Photo 1 Tree trunk exposed in clay / silt layer during watching brief (scale 0.5m)

3.2 Sample excavation Trench 3

| Trench 3 (see Fig 2 Fig 3) | |
|---|--|
| Location | North Woolwich Portal – Stage 2 |
| Dimensions | 25m x 4m. Overall depth 2.60m. |
| LSG coordinates | E = 93158.913 N = 34413.506, E= 93158.004 N = 34409.610, E = 93183.259 N = 34407.823, E = 93182.350 N = 34403.928 |
| Level of base of archaeological deposits observed and/or base of trench | 97.10mATD |
| Natural observed | 97.30mATD |
| Extent of modern truncation | N/A |
| Archaeological/ geoarchaeological remains | Dating Evidence, Finds, and Samples |
| Reworked Pleistocene gravels [12] | |
| Holocene gravel [13] | |
| Sand channel wash [11] | Flint debitage and tools and burnt flint [11] |



| Interpretation and summary | |
|--|--|
| Historic alluvium [2] | |
| Peat filled hollow [7] | |
| Clay slit filled paleochannel [6] | C |
| Very organic clay silt layer [3] | monolith column and bulk sampled throughout. |
| Peaty very organic clay silt layer [8] | Vertical sequence sampled in full via |
| Woody peat layer [9] | |
| Organic silty clay inundation [10] | |

The trench area measuring 25m in length by 4m in width was marked out by Crossrail surveyors at a height of c.100mATD. The size of the trench was later reduced due to time constraints to c.23.7m in length. Due to the proximity of overhead props, plant size was restricted to a 3 tonne machine fitted with a toothless bucket which reduced the ground in controlled spits of c0.2m, although even this machine was restricted by the props, slowing down progress. A short portion of the section was removed by machine without being recorded; however the deposits on either side continued on a horizontal alignment and can be extrapolated across the unrecorded baulk.

Following initial machine excavation of the piling mat, to a height of c.99.7m ATD in the eastern part of the trench and 99.80mATD in the west, a fairly clean layer of slightly organic blue grey alluvial silt [2] containing waterlain wood fragments was exposed. This was removed to 99.50mATD in the eastern portion of the trench, exposing a paleochannel [6] (Photo 2) measuring 16m in length, 1.20m in width and 0.59m in depth in the eastern half of the trench, orientated SW-NE and cutting a very organic clay/silt layer [3] c.0.3m thick which occupied the full extent of the trench below the alluvium. The fill of the channel was grey silt/clay alluvium. Monolith samples were taken from the section of a slot, hand dug through the paleochannel. A branch of the channel at the mid-point of the trench turned sharply towards the north where it appears in section (Fig 3). A small peat filled hollow [7], likely a peat filled pool or tree throw was also noted in the surface of [3].

Below [3] was a c.0.7-0.8m thick layer of peaty very organic and rooted clay/ silt [8] over a similarly thick deposit of woody peat [9]. Both the organic clay/silt layer and peat contained considerable amounts of well-preserved wood fragments, roots and larger timbers including logs but all appeared naturally deposited and none formed any structures. Samples were taken from the northern section (Fig 3) of the trench by MOLA geoarchaeologists.

The peaty layers are thought to have formed as the result of a wetland environment generated by rising sea levels. The sea level rise was not constant and there were drier and wetter periods. A lens of grey alluvium within layer [9] indicates that an episode of inundation occurred. The increasingly siltier nature of the peat/ organic silt/clay layers towards the top suggests a general trend towards a wetter and probably saltier environment prior to the flooded salt marsh likely present during the alluvium deposition.

Separating the peaty layers from the sands and gravels below, [10] represents a period of inundation before stabilisation of the land surface and the formation by wetland vegetation of the peat deposits.

Further machining exposed a layer of light yellowish/grey medium sand [11] at a



depth of 97.40m ATD. This layer was approximately 0.26m in depth and occupied the western portion of the trench. It did not extend across the entire trench section, with gravels [12] and [13] rising up to the east. Numerous worked flints were recovered from the layer [11] during hand cleaning. The flints were, with the exception of a small number of randomly distributed flints retrieved from the western portion of [11] extending into the TWB area, very locally concentrated in the easternmost portion of the exposed deposit, suggesting they may, though clearly reoriented by probable water action and rooting, be fairly close to being in situ. The layer was also bulk sampled and monolith samples were taken from the section.

The natural gravels [12] and [13] were recorded at 97.10m ATD in the west of the trench and at 97.30m ATD in the east, indicating that the gravel bank is rising from west to east at this point. Apart from the Mesolithic flint working activity suggested by the debitage recovered from [11] and a small quantity of burnt flint found within [11] no other archaeology was seen during the sample excavation of Trench 3.



Photo 2 Paleochannel partially excavated in Trench 3 facing west at c.99mOD

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Photo 3 Trench 3 after machining to c.98.9mOD

3.3 Sample excavation Trench 4

| Trench 4 | |
|---|---|
| Location | North Woolwich Portal – Stage 1 |
| Dimensions | 16.64m x 4.40m. upper/ 13.90m x 4.40m lower |
| | Depth 2.15m. |
| LSG coordinates | E = 93204.750 N = 34399.192, E = 93220.977 N = 34395.707, E = 93203.39 N = 34393.28, E = 93219.73 N = 34389.78 |
| Level of base of archaeological deposits observed and/or base of trench | 96.85mATD |
| Natural observed | 97.07mATD |
| Extent of modern truncation | N/A |



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| Archaeological/ geoarchaeological remains | Dating Evidence, Finds, and Samples | |
| Reworked Pleistocene gravels [16] | Possible flint core [16]. | |
| Sand layer with flint working horizon [15] | Flint debitage and tools [15]. | |
| Organic sand [17] | Vertical sequence sampled in full via | |
| Organic silty clay inundation [18] | monolith column and bulk sampled throughout. | |
| Woody peat layer [19] | | |
| Peaty very organic clay silt layer [20] | | |
| [23] [24] [25] deposits at base of channel [22] | | |
| Historic alluvium [21] filled paleochannel [22] | | |
| [26] later fill of [22] or subsequent paleochannel | | |
| Interpretation and summary | | |
| On review of the findings from Trench 3 it was decided that the removal of the alluvium in Trench 4 could be undertaken under targeted watching brief (TWB) conditions. The south facing section of this larger upper trench was recorded and integrated with the section from the lower sample trench (Fig 4).The results from that are here included so that they can be appreciated within the context of the full sequence with the results from the sample excavation. Under TWB conditions, crushed concrete 0.2m thick was excavated from a starting height of 99.00m ATD to reveal an alluviated channel [22] filled by [21], possibly recut by a later channel [26] on a similar alignment, running from north to south which took up most of the trench. At the western edge, deposits not eroded by the channel were seen to be directly below the crushed concrete with very organic and rooted clay/ silt [20] seen at 98.80m ATD over peat [19] at 98.30mATD. Excavation continued to c.97.8mATD, from which height a stepped in trench was excavated from 8 July under sample excavation conditions. | | |
| At 97.80m ATD an area measuring 13.90m in length by 4.40m in width was marked out by Crossrail surveyors to form the edges of the sample excavation. A digger fitted with a toothless bucket was then used to reduce the ground in controlled spits. At the interface of the peat deposits and the underlying deposits, the surface was hand cleaned and investigated prior to removal in spits of 10-20mm by the machine of [18] and [17]. Subsequently [15] was hand cleaned and hand dug, with spoil | | |

absence of further archaeology to the base of the trench. The sequence of the alluvium and underlying deposits cut by the channel [21] was essentially similar in character to that seen in Trench 3, with the very organic silt [20] over the woodier peat [19] likely deposited over time during a wetland environment, with the upper portion of the peaty deposits [20] likely deposited under wetter conditions than [19]. Below [19] at c97.55mATD was a deposit [18] of grey alluvial clay very similar to [10] in trench 3, suggesting an inundation of the land surface prior to stabilisation of vegetation given rise to the peaty deposits. In addition to this

removed by machine. Excavation by machine below [15] into [16] confirmed the



deposit and not present in Trench 3 (or perhaps too slight to have been noted as a significant deposit in its own right), was a layer [17] of very organic slightly peaty sand at 97.45mATD, closely following the top of the underlying sand [15] and below [18], which may indicate incipient soil formation on the surface of the sands prior to inundation due to rising sea levels or local fluvial changes.

The layer of light yellowish/grey medium sand [15] was seen at a depth of 97.40m ATD. This was very similar in character to the layer in Trench 3 [11] containing worked flint. It was approximately 0.20m in depth, horizontal and extended for 8m from the western side of the trench (as in Trench 3 it did not extend across the entire trench section). A large quantity of worked flints was recovered from the layer during the trowelling back of the top 5cm of the deposit. The flints were concentrated in one area of the trench (Fig 5), suggesting they may, though clearly reoriented by probable water action and rooting, be fairly close to being in situ. The positions of the flints were planned and an Excel database created and the according coordinates written on the label with the flints so that subsequent spatial analysis could be undertaken. Where more than 1 flint was retrieved from an area with a radius from a shared central point of less than 5cm, the flints from within that radius were bagged together. This was to aid the flint specialist in more quickly identifying related flints if possible and to better show concentrations on future plots, simplifying the data. To indicate this on Fig 5, weighted points have been employed to show the numbers of flints retrieved at each position. The larger the point, the more flint pieces. The layer was also bulk sampled in a grid pattern, to enable the deposit to be processed for further information such as potential micro-debitage or any microliths which may have been present with the added potential for spatial analysis. The layer [15] was then excavated to its full extent by hand and a small number (less than 10) of further flints recovered and plotted. An extension to the south west end of the trench was undertaken under TWB conditions with the top of [15] exposed by machine to look for any further flints but only one outlying flint at the southern edge of the scatter was found and plotted. The top 5cm of the deposit was excavated by hand. Unfortunately, [15] was not planned in the TWB area, however the edge of the deposit seemed to extend on a similar orientation from north to south as it did in the planned area of the sample excavation.

Ten flints were not located on plan, being recovered by sifting through the spoil from [15] with trowels and bagged together.

The eastern portion of [15] had been eroded away by channel [22], as had the top of the underlying gravel [16]. Peat [25] and sand [24] were likely translocated deposits scoured by the channel and redeposited at its bed. Deposit [23] was an alluvial deposit containing a high concentration of small (less than 3cm) peat clasts probably laid down having being transported from elsewhere with the waterborne silts.

Monolith samples were taken from the section along with further bulk samples.

The natural gravels [16] were recorded at 97.07m ATD in the west of the trench and at 97.21m ATD in the east, indicating a slight rise in the gravel bank from west to east. Apart from the flints from [15] no other archaeology was seen during the sample excavation of Trench 4 with the exception of a possible residual flint core in [16] not located but retrieved during the machining of the surface of the deposit.





Photo 4 Trench 4 with flint scatter in foreground at c. 97.2-97.4mATD

3.3 Note on Monolith samples from XSV 11

Jason Stewart

During the excavation of Trenches 3 and 4 a total of 15 monolith samples were taken (11 in Trench 3 and 4 in Trench 4). The sequence consists of floodplain sands and gravels overlain by humic silts, peat and silty alluvium. This represents a relatively intact alluvial sequence, which has a high potential to reconstruct the Holocene environment and provide evidence for anthropogenic landscape change from the Mesolithic onwards. The monoliths have a high potential for the preservation of microfossils such as pollen, ostracods, diatoms and plant botanical remains.

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Photo 5 Monolith tins in Trench 3 sampling [7] and [8], south facing section

3.4 Note on Flints from XSV11

John Cotton

The first assemblage from Trench 3 comprises twenty-five pieces of struck flint recovered from contexts [11a] and [11b]. The assemblage is dominated by debitage (flint waste) in the form of several partially worked flint cobbles, flakes/spalls, flake fragments and a number of blades and narrow flakes/blades. Diagnostic pieces are few but include part of a pyramidal blade core, and a single small basally-retouched obliquely-backed point of 'Horsham' type – possibly the flint armature from a wooden arrow. The latter hints at a late Early Mesolithic date for this stage (c 9000 – 8500 BP). A small number of pieces of burnt unworked flint also suggest the presence of a hearth somewhere close by.

The second, larger, assemblage from Trench 4 comprises of 122 pieces of struck flint recovered from an area of around 25 sq. m in area (context 15). This scatter too is dominated by debitage – principally waste flakes (some large and irregular) alongside a few parallel-sided blades and fragments. As with the first assemblage there are only a couple of diagnostic pieces, comprising a single opposed-platform core and a broken straight backed blade of possibly Later Mesolithic type (c 8500 – 6000 BP). The virtual absence of retouched pieces, and the size and irregularity of many of the flakes, suggests that this area was used primarily for the testing, quartering and initial dressing of river cobbles subsequently carried elsewhere for further reduction and the production of tools.



Both scatters are likely to represent the remains of short-stay stages on the part of mobile human groups exploiting the valley floor during the Mesolithic period. Other similar lithic assemblages may be anticipated.



Photo 6 A selection of the flint from Trench 4

4 Summary and conclusions

4.1 Summary of Fieldwork Results

- Neither railway archaeology nor any archaeology postdating the deposition of historic alluvium was observed.
- Ground reduction revealed a deep sequence of naturally deposited silts and peats which, though for the most part archaeologically sterile, demonstrated a legible progression of landforms resulting from changing environmental conditions and from which extensive geoarchaeological and paleoenvironmental samples were taken. It is expected that further analysis of the samples will help us to deduce when significant events or stages took place, and also to reconstruct these past environments is detail.
- The flint scatters demonstrate occupation of the exposed sand and gravel eyots or perhaps more prominent land features from the Mesolithic onwards. The finds confirm the existence of the land surfaces predicted by the archaeological modelling of the borehole data, demonstrating the value of the modelling process and further refining the model. The provisional appraisal of the flints (see section 3.4) has not simply suggested the presence of humans at a certain time but has gone so far as to begin to describe the way in which the shoreline environment was used by those people and also suggests the spatial complexity of their industry, with mostly only one stage in the procurement of Page 13 of 14



flint for human use represented. The partially prepared flint would presumably have been removed to further locations in the chain of supply as required.

4.2 Importance of the Resource

The TWB and sample excavations allowed a large amount of data to be collected that describes a landscape evolving over a very lengthy period. The thoroughness of the sampling executed at the site, coupled with the availability of a full sequence from historic to Pleistocene afforded by the unusual depth of the excavations means that there is an excellent opportunity for the study of the past landscape- not merely within the confines of the site but of the larger changes in what is now the Lower Thames valley. When coupled with the extensive borehole data for the area, the site has the potential to further inform and refine our understanding of those past landscape environments and further build on archaeological work in the vicinity, such as the work undertaken by Oxford Archaeology (Stafford et al., 2012) as part of the A13 DBFO Roadscheme on the river terrace to the north of both the North Woolwich and Royal Victoria Dock Portals. In particular, the finding of a Mesolithic working surface at North Woolwich Portal is of national significance, with few intact Mesolithic sites previously identified in the Lower Thames Valley, certainly within the lower river terraces.

4.3 *Provisional* conclusions for future work:

The watching brief and sample excavations have determined that it is possible that further Mesolithic assemblages may be revealed at the surface of the gravels of one or both of the remaining trenches to be excavated in the portal (Trenches 1 and 2), or within the upper portion of a possible early Holocene channel identified by the archaeological modelling above the gravels to the west of Trench 3 and possibly represented by [11]. One of these trenches may also reveal the location of "Ham Creek" which is shown running north to south into the Thames on maps of 18th and 19th century date.

Reporting on the all the findings from the entire watching brief and sample excavations will be determined by the Project Archaeologist once the fieldwork and sample/finds analysis is complete.

5 Bibliography

Stafford, E. with Bates, M., and Goodburn, D. (2012) *Landscape and Prehistory of the East London Wetlands: Investigations along the A13 DBFO Roadscheme, Tower Hamlets, Newham and Barking and Dagenham, 2000-2003* Oxford Archaeology Monograph, Volume 17

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