FERRY LANE INDUSTRIAL ESTATE, WALTHAMSTOW, WALTHAM FOREST, E17 6HG

AN ARCHAEOLOGICAL EVALUATION

SITE CODE: FYL16

REPORT NO: R12526

JUNE 2016

PRE-CONSTRUCT ARCHAEOLOGY

Ferry Lane Industrial Estate, Walthamstow, Waltham Forest, E17 6HG

An Archaeological Evaluation

Site Code:	**FYL16**
Central National Grid Reference:	**TQ 35637 89469**
Local Planning Authority:	**London Borough of Waltham Forest**
Planning Reference:	**Pre-Application**
Written and Researched by:	**Wayne Perkins** **Pre-Construct Archaeology Limited** **June 2016**
Project Manager:	**Helen Hawkins**
Commissioning Client: **On behalf of**	**WSP Parsons Brinkerhoff** **Legal & General**

Contractor:	**Pre-Construct Archaeology Limited** **Unit 54, Brockley Cross Business Centre** **96 Endwell Road, Brockley** **London SE4 2PD**
Tel:	**020 7732 3925**
E-mail:	**hhawkins@pre-construct.com**
Web:	**www.pre-construct.com**

DOCUMENT VERIFICATION

Ferry Lane Industrial Estate, Walthamstow, Waltham Forest, E17 6HG

Type of project
ARCHAEOLOGICAL EVALUATION
Quality Control

Pre-Construct Archaeology Limited Project Code			K4349
	Name	Signature	Date
Text Prepared by:	W Perkins		20.6.16
Graphics Prepared by:	R Murphy		20.6.16
Graphics Checked by:	J Brown	Josephine Brown	21.6.16
Project Manager Sign-off:	H Hawkins		21.6.16

Revision No.	Date	Checked	Approved

Pre-Construct Archaeology Ltd
Unit 54
Brockley Cross Business Centre
96 Endwell Road
London
SE4 2PD

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1 ABSTRACT

1.1 An archaeological evaluation was undertaken by Pre-Construct Archaeology Limited between 23rd May and 27th May and then between 30th May and 9th June 2016 at Ferry Lane Industrial Estate, Walthamstow, Waltham Forest E17 6HG.

1.2 A total of two archaeological evaluation trenches were excavated between the demolished units, both aligned east-west with a view to locate the top of the gravel terraces sloping down towards the River Lea at the west. The trenches were so arranged to maximise coverage within the area available whilst having to avoid live services that had not been deactivated on site.

1.3 A deposit model was constructed by Quest (Batchelor 2015), prior to the evaluation work starting, which illustrated alluvial clays laid down upon the river gravels with peat formation occurring in a higher concentration towards the west, nearer the river. The river terrace gravels sloped down from east to west, towards the former river channel.

1.4 The aim of the trenching strategy was to evaluate the potential survival of archaeology on the site, with particular reference to the possibility of prehistoric activity on the river foreshore. This was motivated, in part, by the discovery of a 'crannog' (a wooden building on stilts) during the construction of the Low Maynard Reservoir, in the 19th century. Therefore, Trenches 1 and 2 were located to the east of this known structure, placed to determine the presence (or absence) of any surviving archaeology and to understand how the proposed works would or would not affect those remains.

1.5 The evaluation concluded that although the 20th century construction of the Trading Estate, in concert with the prior buildings on the site, had severely truncated the upper alluvial layers, the archaeological horizon located on the river gravels survived in most places.

1.6 At the eastern end of Trench 1 a possible palaeochannel or variation in the natural was recorded but it did not contain any anthropogenic material so it was therefore it was deemed to be a 'natural' geological feature. This is evidence of the geological development of the former braided river system.

1.7 At the western extremity of Trench 2 a short timber, implanted in the river gravels, was found in association with a number of fire-burnt daub fragments. Further, a fragment of a possible wooden writing tablet was also found but this may have been intrusive. These items were discovered in early foreshore deposits on the edge of the river, along with some possible early peat formation layers.

2 INTRODUCTION

2.1 The evaluation observed that the most recent underlying geological deposit to survive was sandy clay, consistent with the projected underlying geology of the Stanmore Gravel formation. The only potential for archaeological remains encountered was a single layer of relatively sterile disturbed natural, uncertain in date.

2.2 An archaeological evaluation was undertaken by Pre-Construct Archaeology Limited between the 23rd and 27th May and between 30th May and 9th June 2016 at Ferry Lane Industrial Estate, Walthamstow, Waltham Forest E17 6HG (Figure 1). The project was designed and managed by Helen Hawkins of Pre-Construct Archaeology Ltd and was commissioned by WSP Parsons Brinkerhoff on behalf of Legal & General. The archaeological work was supervised by Wayne Perkins of Pre-Construct Archaeology Limited.

2.3 The evaluation was carried out during the demolition and clearance phase of Ferry Lane Industrial Estate, following which there will be a residential-led, mixed-use redevelopment of the site.

2.4 The site is centred at National Grid Reference TQ 35637 89469 and the site is located within the River Lea & Tributaries Archaeological Priority Zone (APZ1) as defined by the London Borough of Waltham Forest's Local Plan.

2.5 The site does not lie within the vicinity of a Scheduled Ancient Monument, Historic Battlefield, Registered Park or Historic Wreck site.

2.6 The site comprised a rectangular parcel of land, wider at the south, which was bounded to the north and east by existing warehouse units, to the west by the Lea Flood Relief Channel, and to the south by A503 Ferry Lane/ Forest Road which runs parallel to National Rail railway lines (Figure 2). The site measured c. 16,245.00 square meters (or 1.62 hectares) and was relatively flat at 7.94m OD north of Trench 1 and 8.29 south of Trench 2.

2.7 A previous planning permission for the site had an archaeological condition attached and therefore the Archaeology Advisor to the London Borough of Waltham Forest had recommended that the site should be subject to an archaeological trial trench evaluation in the first instance.

2.8 Two trenches were machine excavated under archaeological supervision to the surface of the first significant archaeological horizon (Figure 2).

, The total area opened up in Trench 1 was 20m x 6.5m (resulting in an open area at the base of 17.30m x 4.m). Trench 2 measured 41m x 12m resulting in an exposed area of 33m x 7.3m. A total area of 226 square meters was opened and the natural gravels exposed at 6.28m OD at the east falling to 5.84m OD at the west end.

2.9 Both trenches were located to avoid the Thames Water Transmission Tunnel easement (shown on Figure 2). The trenches were also located to avoid other known services, although several unmarked services were encountered during the evaluation. The evaluation was designed to be the first stage of archaeological site investigation and may be followed by further archaeological investigation / mitigation if required by the Archaeology Advisor to the Local Planning Authority, John Gould of the Greater London Archaeological Advisory Service (GLAAS).

2.10 John Gould of the Greater London Archaeology Service (GLAAS), monitored the project on behalf of the London Borough of Waltham Forest.

2.11 A geo-archaeological deposit model report was previously produced for the site (Batchelor 2015) which reviewed available geotechnical data for the area.

2.12 WSP Parsons Brinkerhoff had previously prepared a desk-based assessment for the site which researched the archaeological and historical potential (Rudge 2015).

2.13 PCA produced a Written Scheme of Investigation which was approved by John Gould, the archaeological adviser to the London Borough of Waltham Forest. The WSI design outlined the scope of the trial trench evaluation to assess the archaeological potential of the site and the methodology by which the evaluation would be undertaken (Hawkins 2016).

2.14 The primary objective of the evaluation was to establish the presence or absence of any archaeological remains, with particular attention to prehistoric activity on the gravel terraces of the River Lea located immediately to the west of the site. All works were undertaken in accordance with the following documents:

- The Written Scheme of Investigation
- Greater London Archaeology Advisory Service: Standards for Archaeological Work (GLAAS 2014)
- MoRPHE (English Heritage, 2006).

3 PLANNING BACKGROUND AND RESEARCH OBJECTIVES

3.1 The full planning background to the site, and the policies of relevance to it, is set out in the desk-based assessment (Rudge 2015).

3.2 WSP Parsons Brinkerhoff were appointed to prepare appropriate documentation and, in turn, commission a pre-application evaluation in accordance with best practise as set out in the NPPF (2012). The evaluation by PCA was therefore intended to be an informative investigation to advise relevant parties of the possible archaeological implications of the proposed strategy for the site.

3.3 The evaluation was designed to address the following objectives for the site, as outlined in the approved WSI (Hawkins 2016):

- To determine the natural topography and geology of the site, and the height at which it survives.
- To establish the presence or absence of prehistoric activity if present, its nature and (if possible) date.
- To establish the presence or absence of Roman activity if present, its nature and (if possible) date
- To establish the presence or absence of medieval activity if present, its nature and (if possible) date
- To establish the presence or absence of post-medieval activity at the site.
- To establish the nature, date and survival of activity relating to any archaeological periods at the site.
- To establish the extent of all past post-depositional impacts on the archaeological resource.

4 GEOLOGICAL AND TOPOGRAPHICAL BACKGROUND

4.1 The site of Ferry Lane Industrial Estate, Walthamstow, Waltham Forest E17 6HG (TQ 35637 89469) was situated on the east of the River Lea Relief Channel that runs adjacent to the River Lea to the west and was bound to the north and east by existing warehouse units and to the south by Ferry Lane/ Forest Road.

4.2 The ground level on the former car parks between the demolished warehouse units was 7.94m OD north of Trench 1 rising to 8.29m OD to the south of Trench 2.

4.3 The British Geological Survey recorded the solid geology of the area to be London Clay deposits and the site was located close to the division between the Taplow Gravel Formation, (characterised by sand and gravel with lenses of silt, clay or peat laid down during the Wolstonian Stage) and the alluvium of the River Lea channel itself (BGS online 2016).

4.4 The borehole survey data revealed a great deal of information about the sequence and deposition of the archaeological and geological layers. The borehole survey concurred with the observations made through evaluation and detailed in the trench descriptions that follow. In particular, the boreholes picked up 'made ground' of mixed, re-deposited natural and building materials as being between 0.20m to 3m thick below the concrete (or tarmac) surfaces. The made ground was underlain by a sequence of fluvial deposits, comprising Alluvium and Taplow Gravels of interbedded units of cohesive silt and clay layers, organic material through to more granular sands and gravels. The London Clay was encountered underlying these fluvial deposits at depths between 4.5m to 6.10m below ground level. This final deposit was found to be 19.6m to 20.3m thick extending to depths beyond 25m (Batchelor 2015).

4.5 The geo-archaeological deposit model found that a sequence of River Terrace Gravels (the Lea Valley Gravel), overlain by floodplain deposits of Alluvium (sands, silts and clays) and Peat existed beneath the site (Batchelor 2015). However, the depth and thickness of these deposits changed from west (low gravel surface; thick floodplain deposits) to east (high gravel surface; thin floodplain deposits) suggesting that the site was located towards the interface of two different environments: the floodplain valley of the Lower Lea Valley (to the west) and dryland valley side (to the east). The surface of the gravel lay between 3.55 and 6.91m OD. The Gravel surface was recorded at its lowest elevation (3.55 to 4.3m OD) on the western margin of the site in boreholes WS101, BH201, BH202, BH204, BH205, WS109, WS115 and WS119). Towards the centre of the site, the surface of the Gravel rose to between 5 and 6m OD (BH101, WS110, BH206 and BH104), and to over 6m OD along the eastern margin of the site (Batchelor 2015:16).

4.6 In twelve of the boreholes, the Lower Alluvium or Lea Valley Gravel was overlain by a clayey or silty Peat, which in certain records included wood remains. The Peat was recorded along the western and central part of the site; the thickest horizons were recorded in BH201 (1.55m), BH204 (1.3m), BH205 (1.1m) and WS108A (0.9m), all of which were located towards the central western part of the site. In surrounding boreholes and to the south, the Peat varied between 0.05 and 0.75m in thickness (Batchelor 2015:16).

4.7 The evaluation revealed brownish mid-orange sandy gravel deposits at levels between 5.78m OD at the east end of Trench 1, sloping down to 4.94m OD at its western extremity. In Trench 2 the gravel was recorded at 6.28m at the eastern end sloping down to 5.84m OD at the west end. This was overlain by a series of alluvial layers and capped by made ground up to 1.10m thick and reinforced concrete slabs c.0.22m thick. The specifics of each layer are discussed in its relevant section below.

5 ARCHAEOLOGICAL BACKGROUND

5.1 The archaeological and historical background to the site is covered in detail within the DBA (Rudge 2015).

5.2 The results of the depositional model produced by Quest (Batchelor 2015) identified areas of high gravel topography and Peat deposits that represented potential areas used by prehistoric and historic people, evidence of their potential activity may therefore be preserved archaeologically (e.g. in features and structures). Such archaeological evidence was recorded during construction of the nearby Low Maynard reservoir, demonstrating that the site had potential to recover such remains. Even in the absence of direct archaeological remains, the sediments recorded had the potential to contain a wealth of further information on the past landscape and evidence of human activities, through the assessment/analysis of palaeo-environmental eco-fact remains (e.g. pollen, plant macrofossils and insects) and radiocarbon dating.

5.3 Prehistoric

5.3.1 There are no records of archaeological assets of the prehistoric period within the site.

5.3.2 The majority of records for prehistoric activity come from finds. These include finds recovered during the construction of the adjacent reservoirs in the late 19th Century. The finds date from the Palaeolithic to the Bronze Age and Iron Age.

5.3.3 Within the Study Area only two records representing evidence of Palaeolithic activity are recorded. These are a Palaeolithic flake and a collection of artefacts, including flint hand-axes and three flint axes discovered on Higham Hill in the 1880s.

5.3.4 Within the Study Area the Neolithic is represented through the recovery of a single find – a polished stone adze found during construction of Lockwood reservoir.

5.3.5 Evidence of Bronze Age activity has been identified through the recovery of a number of finds including a spearhead and socketed knife

5.3.6 Evidence of Iron Age activity has been identified through the recovery of a small number of finds, including a La Tene or variant sword and scabbard and Iron Socketed and Looped Axe. The series of timber piles, interpreted as a pile dwelling and referenced as of possible Bronze Age origin is also given a tentative Iron Age date. This structure comprised a possible building on stilts known as a 'crannog'.

5.4 Roman

5.4.1 No known archaeological assets of Roman date are recorded within the Site boundary.

5.4.2 Evidence from the wider area is very limited. Only three records dating to the Roman period fall within the 1km study area, a residual Roman tile found in a Saxo-Norman quarry pit, parts of a Roman jug discovered during excavation of the Reservoir, and parts of a ceramic vessel again found in association with the 'pile dwelling'.

5.5 Saxon & Early Medieval

5.5.1 No known archaeological assets of the Saxon or medieval periods are recorded within the Site boundary.

5.5.2 Within the wider study area Saxon evidence is limited to the recovery of two Saxon 10th or 11th century spearheads during the construction of the reservoir and an early Viking sword.

5.5.3 Evidence of medieval activity is largely identified from documentary sources. These include reference to the name of Coppermill Lane, Walthamstow and evidence that shows that Clay Street formed part of the main route from Epping and beyond to Tottenham. Claistrete road (1438) was renamed Priorstrete in 1532, and 'Prioures Street (1577) together with Hagger Lane was renamed Forest Road in 1886. Evidence of the presence of water mills on Ferry Lane and Mill Mead Road is also recorded. A quay was also identified that served the village of Tottenham at Tottenham Hale.

5.6 Post Medieval

5.6.1 There are no records of archaeological assets of the post-medieval period within the Site.

5.6.2 The remains of a horticultural layer have been identified located at the British Rail Goods Yard during a watching brief. The Ferry Boat Inn represents the only designated heritage asset of post-medieval date.

5.6.3 The 1865 – 1880 Ordnance Survey map records the location of what appears to be a semi-detached property, and associated garden plots, located on the northern side of what is labelled as Ferry Lane (Forest Road). This appears to be the first development associated with the Site. The only other features recorded on the Site at this date are a sinuous field boundary extending north-south through the centre of the Site and a set of rectilinear field enclosures that run back from Blackhorse Lane to meet the north-south field boundary within the northern section of the Site. The first evidence of suburban expansion is recorded at the junction of Ferry Lane and Blackhorse Lane, and along the western side of Blackhorse Lane.

5.6.4 The 1896 Ordnance Survey map records that both the reservoir complex and Tottenham and Forest Gate Railway have been constructed with a drainage channel running along the western edge of the site. No further development is recorded on the site but Ferry Lane is now labelled as Forest Road.

5.7 Modern

5.7.1 No known archaeological assets of the Modern period are recorded within the Site boundary.

5.7.2 Within the wider study area only three records dated to the Modern Period are recorded. These include Second World War Trench Shelters located at the GLS Depot on Ferry Lane, the foundations of two early 20th century buildings located during an evaluation at 82-84 Forest Road, and Blackhorse Road underground station which was opened in 1968.

5.7.3 By the time of the 1914 Ordnance Survey map additional structures are recorded associated with the semidetached properties located on the south-western section of the Site. Adjacent to the east a race track is now recorded extending across the south-eastern section of the Site east over the adjacent land. To the north two large rectilinear buildings are recorded as part of the Motor Omnibus equipment works, with further works and factory buildings to the north of the Site.

5.7.4 The 1936 Ordnance Survey map records that the Site engineering works have expanded to occupy the south eastern section of the Site, and an Omnibus Depot is now located on what was the race track. By 1963 – 1970 the depot wasremoved and additional smaller units constructed within the south-western section of the Site. The Lee Flood Relief Channel has now also been constructed. The 1974 Ordnance Survey records that the semidetached house has now been demolished

6 METHODOLOGY

6.1 The evaluation was conducted according to an approved Written Scheme of Investigation prepared by Pre-Construct Archaeology Ltd (Hawkins 2016). The fieldwork was designed to assess the presence or absence of archaeological remains.

6.2 Two trenches were proposed between the demolished units. However, due to a number of existing live services the trench sizes were modified according to these constraints although their general size, shape and location remained roughly the same. The trenches were opened by mechanical excavator following the breaking out of reinforced concrete (or exterior surfaces) as appropriate.

6.3 After breaking-out, the mechanical excavator switched to a flat-bladed ditching bucket 1.8m wide and continued under archaeological supervision to remove homogenous layers or made ground down to the highest archaeological horizon or natural level.

6.4 Following the opening of the trenches the vertical sections were cleaned and all features identified were investigated by hand. Investigation was intended to identify the extent and nature of the deposits and to recover dating evidence. The deposits, fills, and features were assigned individual context numbers.

6.5 All recording systems adopted during the investigations were fully compatible with those most widely used elsewhere in the area; that is those developed out of the Department of Urban Archaeology Site Manual and presented in PCA's Fieldwork *Operations Manual 1* (Taylor 2009). Individual descriptions of all archaeological and geological strata and features excavated and exposed were entered onto pro-forma recording sheets. All plans and sections of archaeological deposits were recorded on polyester based drawing film, the plans generally being at scale of 1:100 and the sections at 1:20. The OD heights of all principle strata were calculated and indicated on the appropriate plans and sections.

6.6 A photographic record of the investigations was made using digital formats.

6.7 Two Temporary Bench Marks (TBMs) were installed on the site, one just north of Trench 1 recorded at 7.94m OD and a second just south of Trench 2 recorded at 8.29m OD.

6.8 The site archive was compiled using the site code, FYL16.

7 SUMMARY ARCHAEOLOGICAL DESCRIPTION OF TRENCHES 1 & 2

7.1 Trench Results

7.1.1 The area under evaluation outside of the buildings had a composite tarmac and concrete surface relating to the former warehouse units (concrete) and their surrounding car parks (tarmac). Both trenches were altered in size in some way due to existing services.

7.1.2 The earliest horizon encountered within Trench 1 was the natural drift geology, a mid-brown to orange sandy gravel [9], which had pockets of blueish, mid grey alluvial clay and evidence of small palaeochannels cut into its surface

7.1.3 In Trench 1 a possible palaeochannel [9] was found, cutting the gravels and containing a slightly sandier fill [8] and still extant plant roots. However, there was no sign of any anthropogenic material and all natural deposits and fills appeared to be 'pure' geological material and therefore considered 'sterile.' The top of the fill was recorded at 5.54m OD.

7.1.4 In Trench 1 the gravels were covered by a layer of 'lower' alluvium [6] which also sealed the palaeochannel. Above this, two thin, interbedded layers of sand [5] and a possible early peat formation [4] were only a few centimetres thick. These layers were sealed by a gravelly clay layer (6).

7.1.5 Two thin, superficial pockets of peat [10] were recorded in Sections 5 and 6 of Trench 2.

7.1.6 Further possible evidence for early peat formation or foreshore deposits were revealed in the eastern end of Trench 2 where a layer [14] of shelly sand, 0.18m thick, was sealed by a possible peat layer [13] 0.23m thick, a possible relict channel fill [12] 0.32m thick and further peat formation layer [11], 0.31m thick, recorded at 5.88m OD.

7.1.7 In Trench 2 a short timber post or length of wood [15], 0.16m in diameter and 0.19m long was discovered driven vertically into the gravel and through shelly sand layer [14]. This was found in association with burnt daub and flecks of charcoal in the shelly sand layer.

7.1.8 Layer [14] also produced a small, flat piece of wood, possibly a fragment of a writing tablet but this may have been an intrusive find.

7.1.9 All alluvial layers were sealed by made ground [1], consisting of modern 20th century building rubble, although pockets of 19th century demolition material and dumps were also present. It was up to 1.10m thick in places, directly below the concrete pads and tarmac of the former industrial estate buildings.

8 ARCHAEOLOGICAL PHASED SEQUENCE

8.1 Phase 1: Natural Deposits

8.1.1 The superficial drift geology of the Taplow River Gravels [9] was uncovered at c.2.2m below the present ground surface (5.78m OD) at the east end of Trench 1 and at 3.04m below the present ground surface (c.4.84m OD) at its western end, which illustrated the downward slope of the gravel terrace westwards towards the River Lea. This gravel formation overlay the bedrock of London Clay. The gravels were made up of well sorted, rounded river pebbles and gravels in a sandy matrix, layer [9]. The interface was cleaned to reveal a mid-brown orange gravel with pockets of blueish light grey clay and occasional areas of sand.

8.1.2 In Trench 2 the gravels were located 2.06m below the present ground surface, at 6.42m OD at the east end of the trench sloping down to 2.47m below the present surface at 5.76m OD. Both trenches illustrate the gradual downward slope towards the west and the River Lea.

8.1.3 In Trench 1 a curvilinear palaeochannel [8], was investigated to see if it contained anthropogenic material. The sandy gravel was cut (or, more correctly, eroded) by palaeochannel [8], which was 2m long, 0.74m wide and 0.17m deep. It had gradually sloping sides and was a flat' U' shape in profile. The paleochannel fill (7), was a greyish mid brown silty sand which contained numerous roots. This may have been a palaeochannel or root runnel and is likely to have been formed during a period when the gravels were exposed to the air and bioturbation had taken place. The feature was recorded at 5.54m OD.

8.1.4 The palaeochannel had been sealed by a series of alluvial layers which illustrated the dynamic nature of a riverine environment with alternating layers laid down in 'high' and 'low' energy environments. Layer [6] which sealed the palaeochannel and the gravels was a blueish dark grey clay with frequent inclusions of rolled gravel and pebbles indicative of a high energy event. The layer was 0.37m thick at 6.14m OD, feathering down to a wedged point over the channel. It was probably the same as the layer of 'lower' alluvium [6] described as 'inorganic and sterile' by Batchelor (2015:16) and recorded at 6.14m OD.

8.1.5 Above this, two thin layers, interpreted as foreshore deposits had been laid down in a low energy environment, the uppermost of the pair was recorded at 5.54m OD. Layer [5] consisted of a blueish dark grey silty sand no more than 0.09m thick. Layer [5] was overlaid by a mid-brown silty clay [4] which may have been a pocket of peat formation, 0.17m at its thickest, again lensing down to just a few centimetres in thickness. These two layers were in turn sealed by a band of gravel and pebbles layer [3] at 6.24m OD which fell away dramatically from east to west, down towards the river. .. Layer [3] was 0.09m thick at the east, thickening to 0.92m thick at Section 2. The final layer was the upper alluvium of blueish dark grey clay which was up to 1.2m thick in some places and seems to represent the last phase of the river's development as it slowed and developed into a broad water course slowly becoming less fluvially dynamic.

8.1.6 In Trench 2, two pockets of peat formation [10] were recorded in Sections 5 and 6 but they were both small, isolated lenses and not continuous 'beds.' The first was recorded in Section 5 at 6.05m OD, and at 6.02m OD in Section 6 which illustrated how level the gravels were at this point. Unusually, they were sandwiched between the lower alluvium (or interface with the gravel) [6] and the upper alluvium [2] but are probably instances of localised, short term peat growth or plant decay

8.1.7 Further possible evidence for early peat formation or foreshore deposits was revealed in the eastern end of Trench 2 where layer [14], comprising shelly sand 0.18m thick, was sealed by possible peat layer [13] whichi was 0.23m thick, a possible relict channel fill [12] 0.32m thick and further peat formation layer [11], 0.31m thick, recorded at 5.88m OD.

8.1.8 All putative foreshore deposits and/or possible peat formation layers were overlain and sealed by a blueish dark grey clay alluvium [2], described as the 'upper alluvium' (Batchelor 2015:16), which had occasional rolled pebble inclusions introduced by water action. The thickness of layer [2] (up to c. 1.4m thick) belied the long period of its formation and its upper (no doubt truncated) surface contained a mix of 'residual' finds dating from the prehistoric period to the Modern day, illustrating its long period of formation and the power of water action to erode material into the alluvium. In Trench 1 the layer was recorded at 7.28m OD at the east end and 7.40m OD at the west. A similar case existed in Trench 2 with the alluvial

layer at 7.29m OD at the west end and 7.42m OD at the east. The regularity of the height measurements illustrated the truncation of the layer by later construction work and therefore does not represent the layer's true level.

Plate 1: Trench 1, Section 1: layers [1-6] and palaeochannel [8] looking south (scale 1m)

Plate 2: Trench 1: Palaeochannel [8] in foreground and sondage to reveal 'cleaner' gravels, looking west (scale 1m)

Plate 3: Trench 1 completed avoiding gas main. View to the north-east (scale 1m)

8.2 Phase 2: Prehistoric

8.2.1 At the western end of Trench 2, a short timber post or length of wood [15], semi-circular in cross-section and measuring 0.16m in diameter and 0.19m long was discovered, apparently driven vertically into the gravels and through the shelly sand layer [14]. The top of the post was recorded at 5.61m OD.

8.2.2 The post was found in the shelly sand layer [14] which also contained burnt daub and flecks of charcoal, suggesting an anthropogenic intrusion into what appears to be a natural layer. Although only a short length of the layer was revealed in Section 7, this small raised area of sand could be a natural foreshore deposit or natural sandbank. However, due to the presence of the burnt flint and charcoal it may be interpreted as re-deposited material containing traces of human activity.

8.2.3 Layer [14] also produced a short section of a possible wooden writing tablet. The specialist report suggests that such wooden tablets date from the Roman into the medieval period so the dating is unsure. The object appears to be at odds with the other finds in this layer and the depth of the alluvial sequence. It may have been introduced from the peat layer above [11] which may have formed over a long period of time and the wooden fragment washed in. However, the interface between the modern made ground [1] and the top of the alluvium [2] contained objects over a wide date range so it is possible that it is 'intrusive.'

Plate 4: Trench 2, wooden timber or post [15] looking north-west (scale 0.30m

Plate 5: Trench 2, Section 7: Alluvial layers & peat formation. Timber post [15] bottom left of photo in front of section. View to north. (Scale 1m)

Plate 6: Section 7 but with lines scoured in for clarity. View to north (Scale 1m).

8.3 Phase 3: Post-Prehistoric Inundation

8.3.1 The possible human activity noted above had been subsequently sealed by a number of alluvial layers. Three interleaving layers of possible peat formation, [11], [12] and [13] sealed the sandy, shell-filled layer [14] through which the stake (or timber) had been driven. These low energy clays and peats were found at the west end of the trench and thus nearer to the river. At the eastern end of the trench, palaeochannel [8] was sealed by a layer of clay [6] (laid down in a high energy environment) which in turn was overlain by a thin layer of sand [5] and another putative layer of early peat development [4]. These in turn were overlaid by the clay and gravel 'lower alluvium' [3] which illustrated the dynamic nature of the fluvial environment alternating between high and low energy states. Two small pockets of possible peat formation [10] were recorded above it before the ensemble was sealed by the thick blue-grey clay 'upper alluvium' [2] which was a sterile, homogenous layer. This had been subsequently truncated and terraced level by the later 19th and 20th century construction work.

8.4 Phase 4: Modern (20th Century)

8.3.2 The phases of 19th and 20th construction (with the introduction of services) and their subsequent demolition have impacted upon and truncated the archaeological layers. The upper alluvium [2] had been shown to be truncated or terraced away to some degree. The made ground above it [1] contained modern demolition material mixed with detritus from the 19th century, most of which had been affected by light contamination.

9 INTERPRETATION AND CONCLUSIONS

9.1 Original Research Objectives

9.1.1 The following research objectives were put forth in the Written Scheme of Investigation and these can now be addressed

To determine the natural topography and geology of the site, and the height at which it survives.

9.1.2 The natural topography of the site appears to have been locally truncated during the construction and development of the Omnibus Works in the early 20th century. Its subsequent demolition and the levelling and construction work required to create the Ferry Lane Industrial Estate in the later 20th century has also played a part in partially truncating the site.

9.1.3 The site is located east of the River Lea, a tributary of the River Thames. It is likely that the site was originally on a flood plain within the river's meander corridor and may have been originally wetlands or a braided river system in the prehistoric period. It would thus have been an ideal resource for fish, fowl and eels. The deposits of silty sand and clayey sand on the site reflects the dynamic nature of a riverine environment and the division between high energy environments (floods, inundations – which introduce the silts) and low energy environments (standing water - which allows clays to form). At the north of the site in Trench 1 the natural gravels were found to be at 5.78m OD, sloping down westwards to 4.84m OD. In Trench 2 they were at 6.42m OD falling towards the west at 5.76m OD. These levels tally with an evaluation undertaken in 2013 at the British Rail Yard immediately south of the site on the other side of Ferry Lane/Forest Road. (Hawkins, H 2013:12). However, the gravels were a little higher there, the highest points being 8.21m OD and 7.90m..

9.1.4 The natural gravels and foreshore layers were sealed by an extensive alluvial sequence of blue-grey silts and clays up to 1.4m thick in some places. There were direct similarities between these deposits and those encountered nearby at the Former British Rail Goods Yard site immediately to the south. Similarly, the British Rail Goods Yard site concluded that the clays contained neither anthropogenic artefacts nor any organic material but were entirely sterile and homogenous (ibid, 3), as has been the case at Ferry Lane.

To establish the presence or absence of prehistoric activity.

9.1.5 The short timber post [15] found penetrating through layer [14] and into the natural gravels [9] remains enigmatic as it is too short for a pile and is not sharpened to a point. Furthermore, it is a single stake so it is impossible to compare it to other timbers or imagine what kind of structure that it may have been part of. However, it is not part of a tree as it does not have any roots. Tree ring identification has proven difficult due to the softness of the tree and damage to its top surface, possibly due to it being hammered into the gravels.

9.1.6 Burnt daub was found in layer [14] which also contained flecks of charcoal. This layer had the appearance of a small sandbank or foreshore deposit underneath a sequence of layers which show some degree of peat formation, layers [11 – 13] all contain a high organic content.

To establish the presence or absence of Roman activity

9.1.7 A short section of flat wood found on the surface of layer [14] and putatively identified as a writing tablet may be an 'intrusive' object or was derived from the layer above, [11] which is a possible early peat layer. It is an object that is known to have been in use from the Roman through to the medieval period so its date range is quite wide. As the object was found on the surface (as opposed to *within* layer [14]), it is for the moment, an anomaly.

To establish the presence or absence of medieval activity.

9.1.8 There was no evidence of such activity found in the evaluation

To establish the presence or absence of post-medieval activity at the site.

9.1.9 There was no evidence of such activity found in the evaluation

To establish the extent of all past post-depositional impacts on the archaeological resource.

9.1.10 It is apparent from the work of the evaluation that the post-depositional impacts have had a

severe but localised effect on the preservation of the archaeology. As has already been outlined above with regards to the survival of the natural topography, 20th century construction and demolition has locally truncated the site down to 1.0 – 1.4m from the present ground level surface with a mixture of concrete floors and service trenches. This said, implied prehistoric activity was found to the west of the site as well as evidence of early foreshore deposits and peat formation.

9.2 Conclusions

9.2.1 The river terrace gravels exposed during the evaluation will help to refine the existing topographic model created by the borehole evidence. Gravels were found to be generally higher than had been anticipated. Whilst the gravels in Trench 1 sloped steeply down towards the river at the west, in Trench 2 the gravels were consistently level for the most part of the trench's length.

9.2.2 The short timber 'post' discovered embedded in the gravel does not appear to be worked and has not been sharpened into a point, however it had penetrated layer [14] and 0.19m into the gravel [9] itself. It had no roots and was not associated with any other organic or plant material. Although lacking in diagnostic carpentry marks, the insertion of the post is likely to be an intentional act.

9.2.3 Of more interest was the evidence for prehistoric activity in the form of burnt daub which was retrieved from layer [14]. Tentatively dated to around c.1600 BC (onwards), the fragments do seem to support human activity at the river's edge. Sandy layer [14] may have formed when these gravel terraces were part of a larger braided river system within the prehistoric landscape. Although the evidence is light and may only reflect the traces of seasonal hunting activities in the area, it is, nonetheless, an important potential component to understanding early prehistoric landscapes in the area.

9.2.4 No other structures or archaeological features were found.

10 ACKNOWLEDGEMENTS

10.1.1 Pre-Construct Archaeology Limited would like to thank Andrew Rudge of WSP Parsons Brinkerhoff for commissioning the work on behalf of Legal & General, and all at Shannon Group for their help on site. We would also like to thank John Gould of Historic England for his input and monitoring the project on behalf of the London Borough of Waltham Forest.

10.1.2 The author would like to thank Richard Krason, James Webb and Jennifer Wilson for their help in the field, Richard Archer for the survey, Wayne Richards for organising the logistics, Chris Jarrett & Amparo Valcarcel for dating the finds, Ray Murphy for the illustrations and Helen Hawkins for her project management and editing.

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Rudge, A 2015 *Ferry Lane Industrial Estate, Walthamstow: Historic Environment Desk-Based Assessment.* WSP Parsons Brinkerhoff Unpublished Report.

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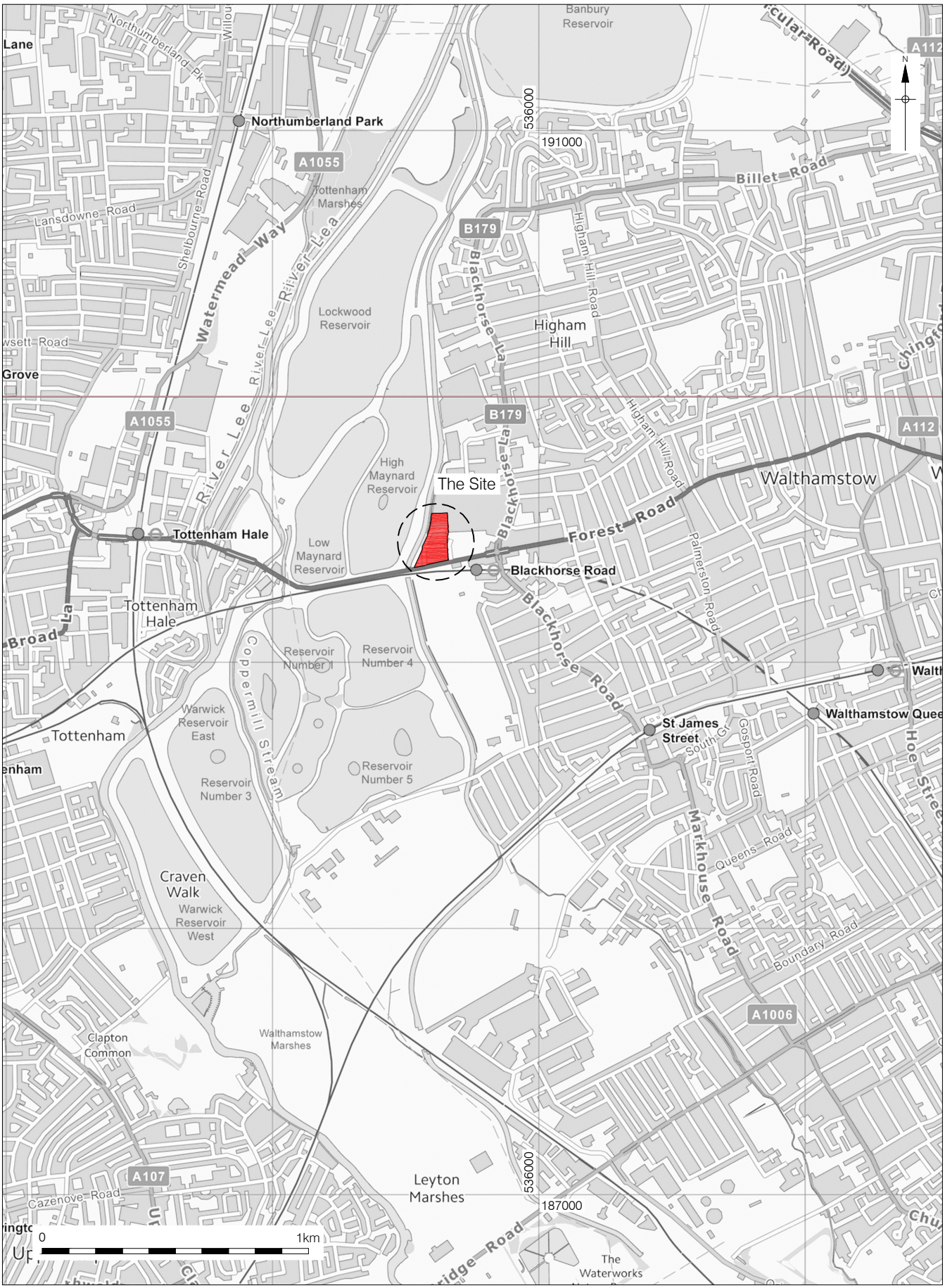
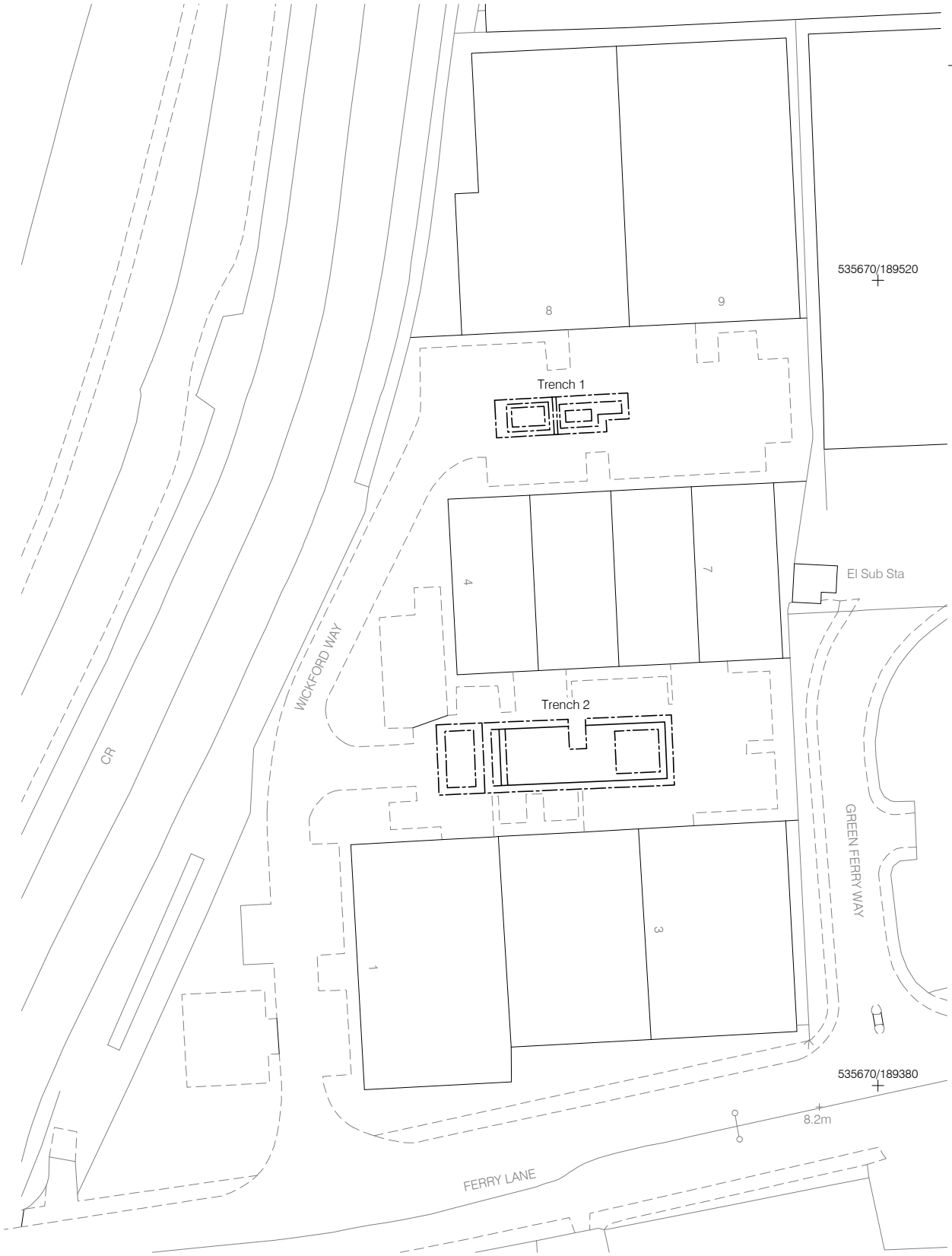
Online Resources

British Geological Survey -
http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html



17/06/16 RM

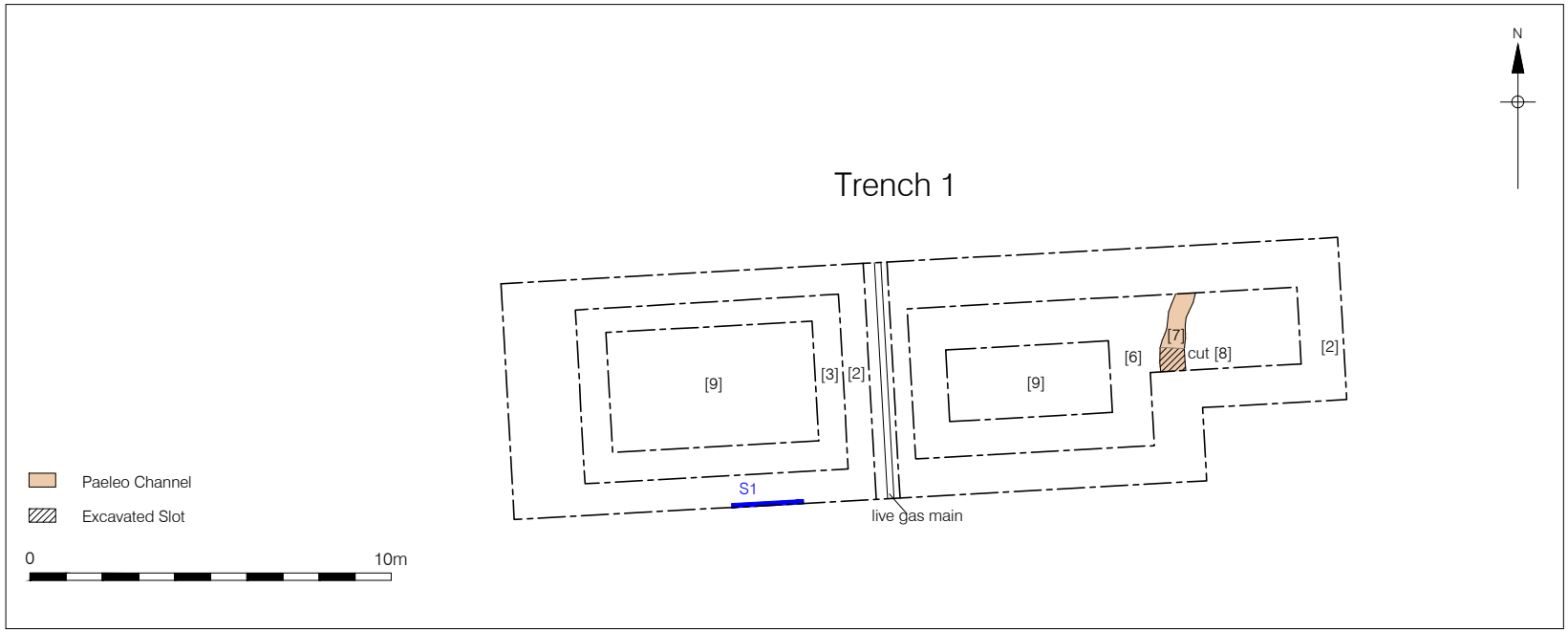
Figure 1
Site Location
1:25,000 at A4

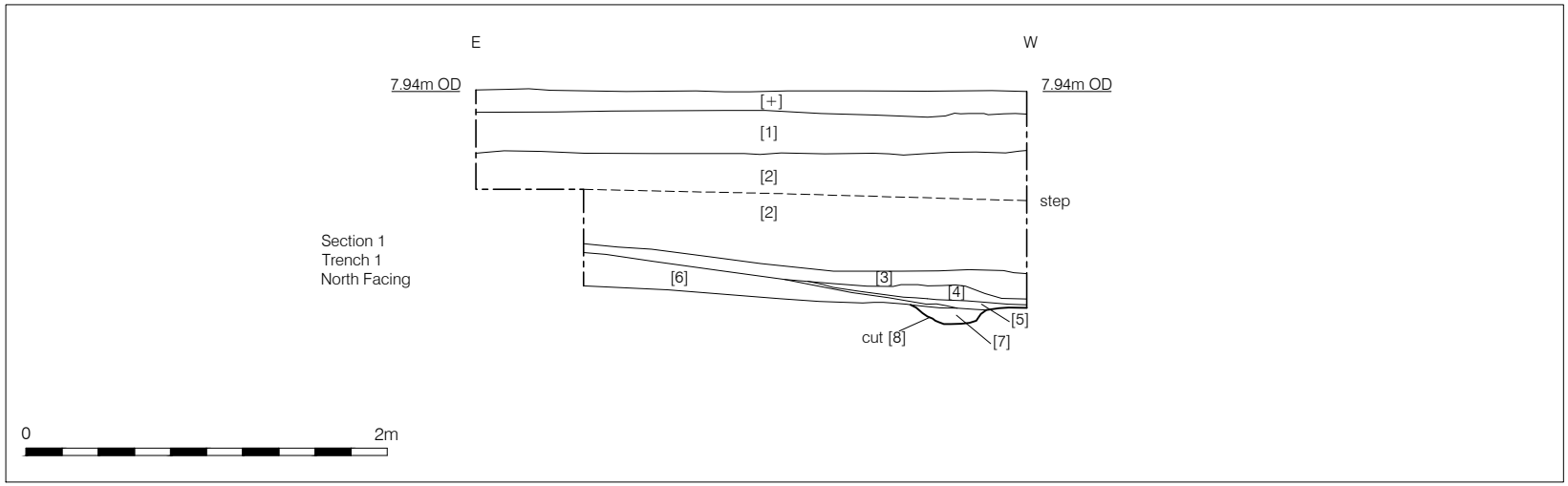


0 50m

17/06/16 RM

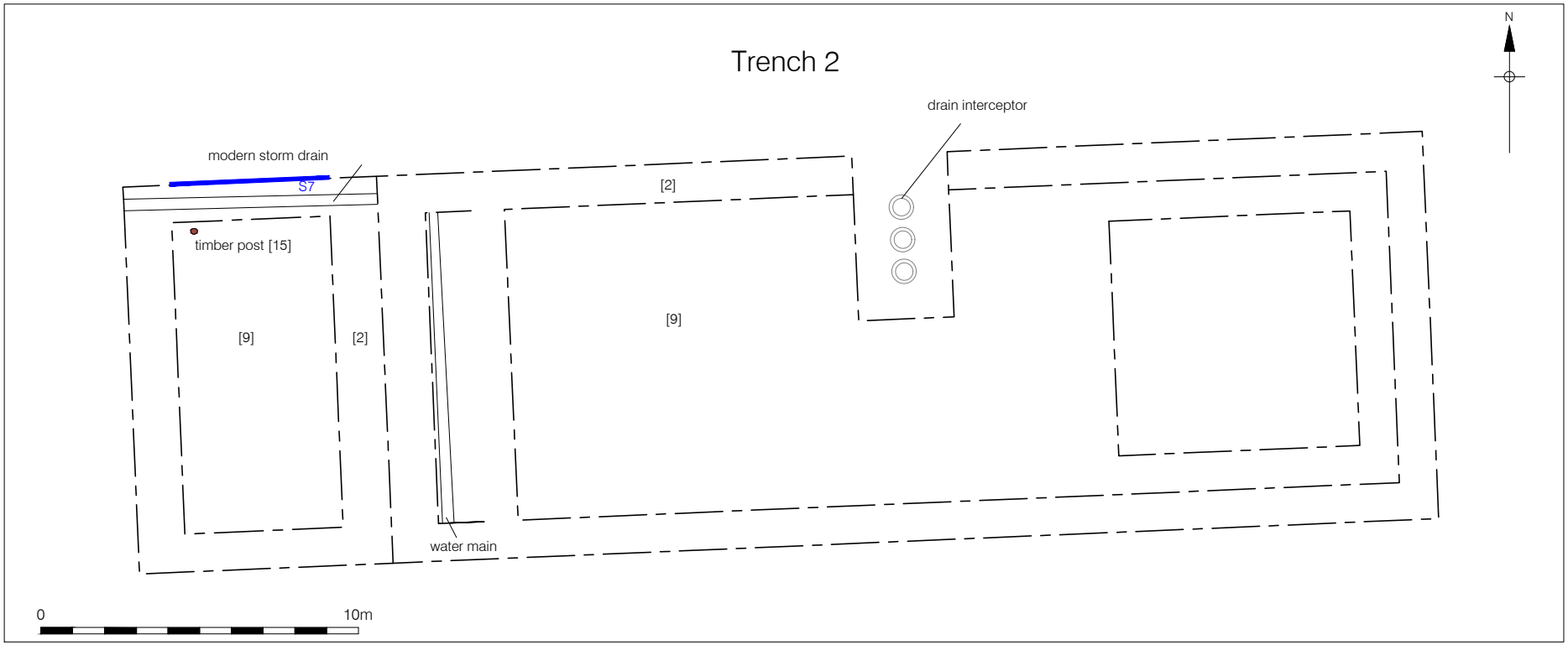
Figure 2
Trench Location Plan
1:1,000 at A4

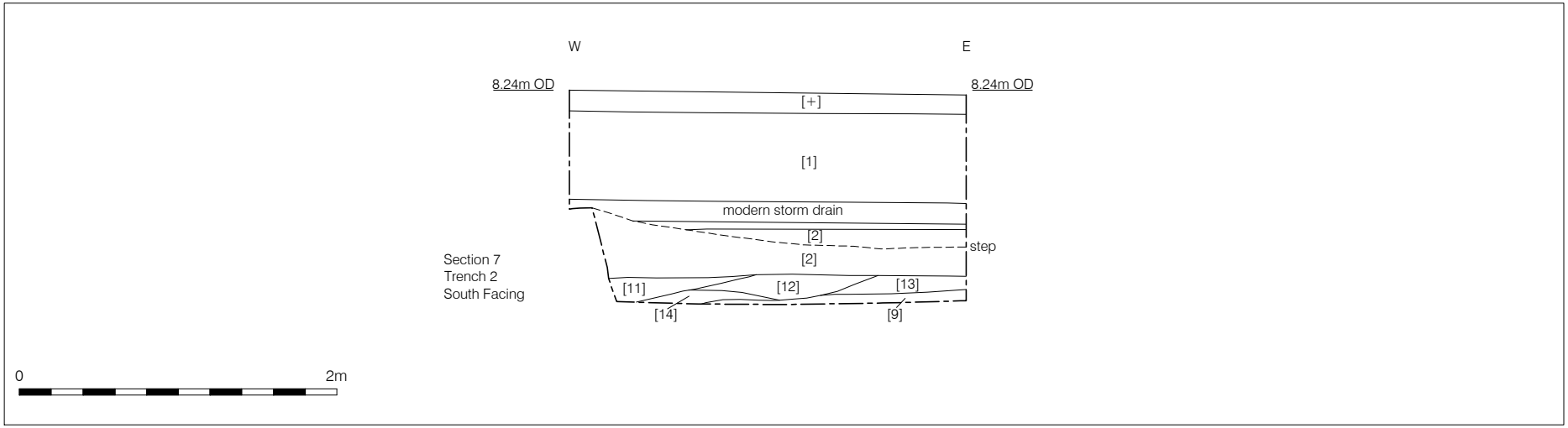




17/06/16 RM

Figure 3
Plan and Section of Trench 1
Plan 1:200 and Section 1:40 at A4





17/06/16 RM

Figure 4
Plan and Section of Trench 2
Plan 1:200 and Section 1:40 at A4

APPENDIX 1: CERAMIC BUILDING MATERIALS SPOT DATES

By Amparo Valcarcel, Pre-Construct Archaeology Limited

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
2	3102;2586	Abraded daub; post medieval unglazed peg tile	2	1500BC	1800	1180	1800	1180-1800	No mortar
14	3102	Abraded and burnt daub	7	1500BC	1666	1500BC	1666	1500BC-1666	No mortar

APPENDIX 2: POTTERY ASSESSMENT

Post-Roman pottery spot dating index (FYL16)

Chris Jarrett

Introduction

A small assemblage of pottery was recovered from the excavation (seven sherds/six estimated number of vessels /672g, of which none was unstratified. The pottery dates to the post-medieval period and more specifically the mid-late 19th century, except for one sherd which may be late medieval or early post-medieval in date. The assemblage is in a good condition, although it is present as mostly sherd material, with only one item being intact. The majority of the pottery could be assigned to a form. Only one of the sherds was deemed to be residual and it is the only item that shows evidence of abrasion and therefore the assemblage was mostly deposited fairly rapidly after breakage or on its discard. The material was found in two contexts as small sized groups (under 30 sherds). The classification of the pottery types is according to the Museum of London Archaeology (2014). The assemblage is discussed as a spot dating index.

Spot dating Index

ENV: estimated number of vessels

Context [1], spot date: c. 1870–1900

English brown salt-glazed stoneware (ENGS), 1700-1900, ginger beer bottle, 1 sherd, 1 ENV, 555g. Intact, blob rim. Stamped above the base 'R, WHITES' in a ribbon, above 'TRADE MARK' over a medallion depicting St George slaying a dragon and above 'GINGER BEER'.

Refined white earthenware with under-glaze polychrome-painted decoration in 'chrome' colours (REFW CHROM), 1830–1900, plate, 1 sherd, 1 ENV, 53g. Rim sherd: red band and line on the rim and red line on the edge of rim wall carination. c. 1870+ decoration.

Refined whiteware with under-glaze transfer-printed decoration (TPW), 1780–1900 lid turn 1 sherd, 1 ENV, 52g. Knob moulded in the shape of a lion, evidence for willow pattern decoration

Context [2], spot date: c. 1830–1900

Refined whiteware with under-glaze transfer-printed 'flow blue' decoration (TPW FLOW), 1830–1900, unidentified form, 2 sherds, 1 ENV, 7g. Body sherds

Chinese blue and white porcelain (CHPO BW), 1590–1900, ?plate, 1 sherd, 1 ENV, 2g. Base sherd

Miscellaneous unsourced medieval/post-medieval pottery (MISC), 900-1900, ?bowl, 1 sherd, 1 ENV, 3g. Thin walled body sherd, late medieval early post-medieval fine buff earthenware with an internal yellow-olive glaze

Significance, potential and recommendations for further work

The assemblage is of little significance as it occurs in such a small quantity and mostly as types found in the London region. The only potential of the pottery is to date the contexts it was recovered from. There are no recommendations for further work on the pottery.

References

Museum of London Archaeology, 2014. Medieval and post-medieval pottery codes. http://www.mola.org.uk/resources/medieval-and-post-medieval-pottery-codes

APPENDIX 3: IRON OBJECTS

Iron Object Assessment (FYL16)

Chris Jarrett

The only metal find recovered from the archaeological intervention was a square headed iron nail found in context [2] and in a moderately corroded condition. The item measures 95mm in length and the sub-square head measures 26mm x 24mm. The item may represent a hand cut item of a flat sectioned type and could have had a functional and decorative use on a door. The item can only be broadly dated to between the Roman and post-medieval periods (M. Gaimster pers. comm.).

The item has little significance or potential for further research and there are no recommendations for further work on the object.

APPENDIX 4: WOOD ASSESSMENT

Wood Assessment (FYL16)

Chris Jarrett

Three fragments of wood are recorded and consist of a probable timber post and two fragments from a probable wooden wax tablet.

The probable timber post

This item was recovered from context [15] and consisted of a halved probable timber post fragment, measuring 178mm in length, 142mm wide x 103mm mm thick. The bark survived, however the timber was too degraded to observe tree rings.

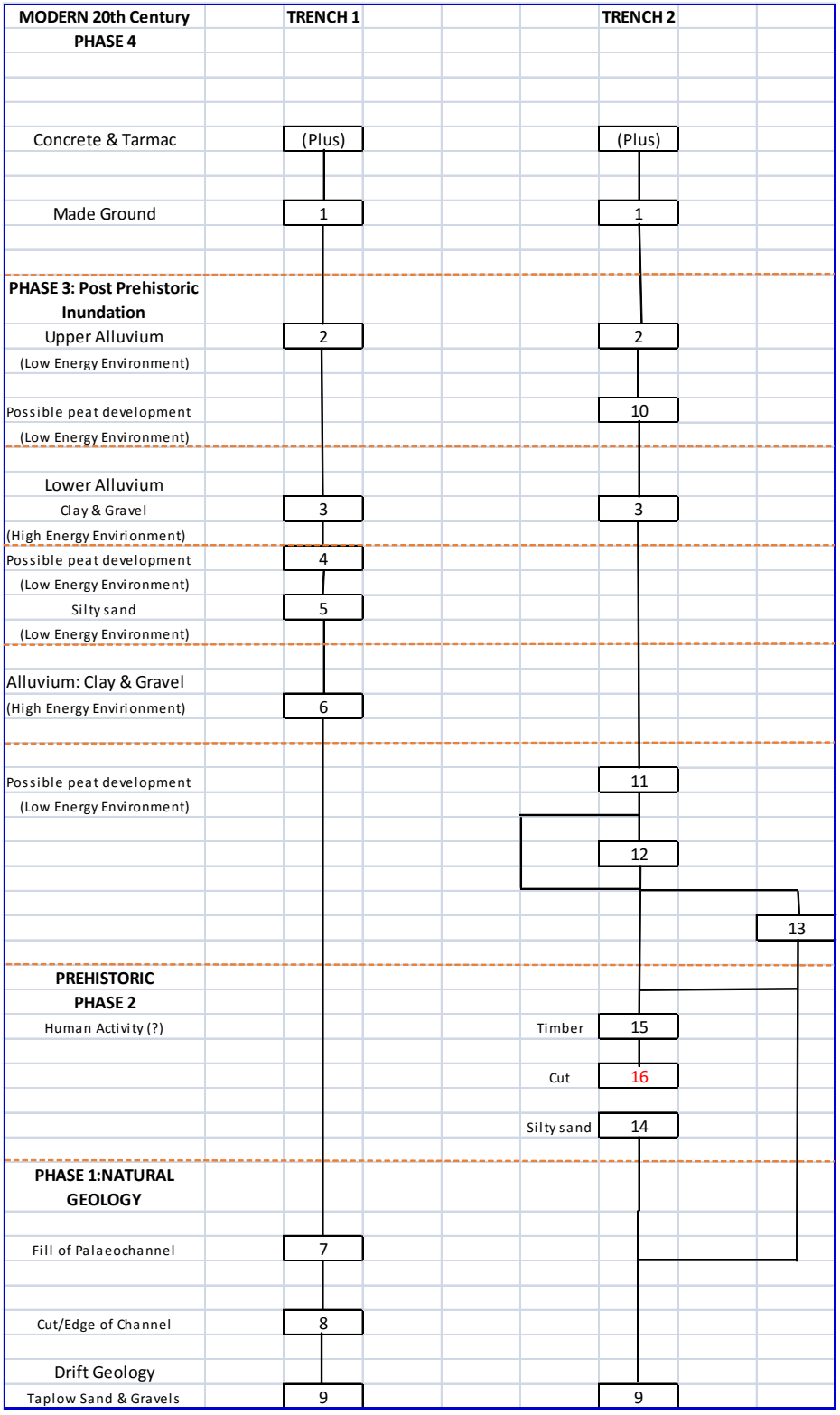
The probable wax writing tablet

A probable wooden wax writing tablet was recovered from context [14] and survives as a long side and the recess to take the wax, which was written on. The writing tablet is a rare find, especially outside of urban contexts and could be of a Roman date, although these items also date to the early post-medieval period (M. Gaimster pers. comm.).

Significance, potential and recommendations for further work

The timber post is of interest; however as the tree rings have now degraded then it is not an appropriate sample for dendrochronology dating. The wooden wax writing tablet is also of interest and indicates possible Roman or later activity on the site. The main potential of the material is to indicate the survival of rare wooden and organic items in the stratigraphy of the site. There are no recommendations for further work on the material at this stage, although should further archaeological work be undertaken on the site, then the importance of the wood artefacts should be reviewed.

APPENDIX 5: MATRIX



APPENDIX 6: CONTEXT INDEX

Site Code	Context No	Trench	Plan	Section	Type	Description	Date	Phase
FYL16	1	TR 1	Tr 1	1	Layer	20th Century building rubble & crush	Modern	4
FYL16	2	TR 1	TR 1	1 - 7	Layer	Upper alluvium: firm blueish dark grey clay-	Natural	3
FYL16	3	TR 1	TR 1	1,2	Layer	Alluvium: firm dark grey clay & gravel	Natural	3
FYL16	4	TR 1	TR 1	1	Layer	Alluvium: firm dark brown silty-clay (peat?)	Natural	4
FYL16	5	TR 1	TR 1	1	Layer	Alluvium: soft blueish dark grey silty sand	Natural	3
FYL16	6	TR 1	TR 1	1,2	Layer	Alluvium: firm, dark grey clay & gravel (interface)	Natural	3
FYL16	7	TR 1	TR 1	1	Fill	Firm, dark brown greyish sandy clay	Natural	1
FYL16	8	TR 1	TR 1	1	Cut	Palaeochannel	Natural	1
FYL16	9	TR 1	TR 1	1 - 7	Layer	Compact, reddish mid brown sandy gravel. Gravel terrace	Natural	1
FYL16	10	TR 2	TR 2	5,6	Layer	Alluvium: firm dark brown silty-clay (peat?)	Natural	3
FYL16	11	TR 2	TR 2	7	Layer	Alluvium: firm dark brown silty-clay (peat?)	Natural	3
FYL16	12	TR 2	TR 2	7	Layer	Alluvium: firm light brown silty-clay, flecks of shell	Natural	3
FYL16	13	TR 2	TR 2	7	Layer	Alluvium: firm dark brown silty-clay	Natural	3
FYL16	14	TR 2	TR 2	7	Layer	Soft, light grey brownish, silty sand, shell inclusions	Natural	1
FYL16	15	TR 2	TR 2	-	Timber	Semi-circular short post, 160mm diameter x 190mm length. Bark in situ	Prehistoric	2
SITC16	16	TR 2	TR 2	-	Cut	Sub circular, 0.18m in diameter, 0.20m deep	Prehistoric	2

APPENDIX 7: OASIS FORM

OASIS ID: preconst1-254804

Project details

Project name	Ferry Lane Industrial Estate, Walthamstow, London Borough of Waltham Forest E17 6HG
Short description of the project	Two large, stepped trenches measuring 23m x 6.5m and 41m x 12.2m respectively were opened up to expose the gravel terraces of the River Lea immediately adjacent to the site on the west. Late 19th century finds of a possible 'crannog' site found nearby suggested the study site might also contain prehistoric activity on the foreshore or gravel terraces. The evaluation concluded that the study area may have been on one of the higher gravel terraces although nascent peat development was evident. A single timber was discovered driven into the terrace gravels through a layer that produced several fragments of burnt daub suggesting human activity. this was sealed by thick layers of alluvium and made ground.
Project dates	Start: 23-05-2016 End: 09-06-2016
Previous/future work	Yes / Yes
Any associated project reference codes	FYL16 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Industry and Commerce 4 - Storage and warehousing
Monument type	STAKE Late Prehistoric
Significant Finds	WRITING TABLET Uncertain
Methods & techniques	"Targeted Trenches"
Development type	Housing estate
Prompt	Planning condition
Position in the planning process	Between deposition of an application and determination

Project location

Country	England
Site location	GREATER LONDON WALTHAM FOREST WALTHAMSTOW Ferry Lane Industrial Estate
Postcode	E17 6HG
Study area	1 Hectares
Site coordinates	TQ 35637 89469 51.587237269768 -0.041919147087 51 35 14 N 000 02 30 W Point

Height OD / Depth	Min: 4.84m Max: 6.42m

Project creators

Name of Organisation	PCA
Project brief originator	John Gould
Project design originator	WSP environmental
Project director/manager	Helen Hawkins
Project supervisor	Wayne Perkins
Type of sponsor/funding body	Housing Developer
Name of sponsor/funding body	Legal and General

Project archives

Physical Archive recipient	LAARC
Physical Archive ID	FYL16
Physical Contents	"Wood"
Digital Archive recipient	LAARC
Digital Archive ID	FYL16
Digital Contents	"none"
Digital Media available	"Database","Survey","Text"
Paper Archive recipient	LAARC
Paper Archive ID	FYL16
Paper Contents	"none"
Paper Media available	"Context sheet","Matrices","Photograph","Plan","Report","Section","Survey","Unpublished Text"

Project bibliography 1

Grey literature (unpublished document/manuscript)

Publication type	
Title	Ferry Lane Industrial Estate, Walthamstow, Waltham Forest, E17 6HG An Archaeological Evaluation
Author(s)/Editor(s)	Perkins, W
Date	2016
Issuer or publisher	PCA
Place of issue or publication	London
Entered by	archive (archive@pre-construct.com)
Entered on	21 June 2016

P C A

PCA SOUTH
UNIT 54
BROCKLEY CROSS BUSINESS CENTRE
96 ENDWELL ROAD
BROCKLEY
LONDON SE4 2PD
TEL: 020 7732 3925 / 020 7639 9091
FAX: 020 7639 9588
EMAIL: info@pre-construct.com

PCA NORTH
UNIT 19A
TURSDALE BUSINESS PARK
DURHAM DH6 5PG
TEL: 0191 377 1111
FAX: 0191 377 0101
EMAIL: info.north@pre-construct.com

PCA CENTRAL
7 GRANTA TERRACE
STAPLEFORD
CAMBRIDGESHIRE CB22 5DL
TEL: 01223 845 522
FAX: 01223 845 522
EMAIL: info.central@pre-construct.com

PCA WEST
BLOCK 4
CHILCOMB HOUSE
CHILCOMB LANE
WINCHESTER
HAMPSHIRE SO23 8RB
TEL: 01962 849 549
EMAIL: info.west@pre-construct.com

PCA MIDLANDS
17-19 KETTERING RD
LITTLE BOWDEN
MARKET HARBOROUGH
LEICESTERSHIRE LE16 8AN
TEL: 01858 468 333
EMAIL: info.midlands@pre-construct.com