



BLACKHORSE LANE London E17

London Borough of Walthamstow

Report on archaeological evaluation

November 2014



**Blackhorse Lane
Waltham Forest
London
E17 6DS**

Site Code BKL 14
NGR 535800 189600
OASIS reference molas1-190311

Planning reference 2013/0554
Condition Number 10

Report on archaeological evaluation

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Summary

This report presents the results of a first phase of archaeological evaluation carried out by MOLA at Blackhorse Lane. The report was commissioned from MOLA by MacDonald Egan on behalf of the client, Hollivale Blackhorse Lane LLP, Taylor Wimpey UK Limited and N T Dogs Limited.

In accordance with the Written Scheme of Investigation (MOLA 2014) four evaluation trenches and a test pit were excavated on the site between 01.09.14 and 12.09.14. Within the evaluation trenches it was found that the first c 1m of deposits consisted of made ground and industrial waste, as well as numerous services. Additionally there were also services that extended beyond this depth, truncating the natural. Despite this, the natural brickearth still exists relatively untruncated, which suggests there is some low potential for surviving archaeology. Within the four trenches no archaeology or archaeological deposits were observed. Two of the trenches had to be reduced in size and relocated due to the presence of live services. However Trench 12 was increased in length to offset the reduction in the overall evaluation sample area.

The report concludes that it is unlikely that archaeological remains will be impacted upon by the redevelopment on this part of the site.

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1 Introduction

1.1 Site background

- 1.1.1 An archaeological evaluation was carried out by MOLA at Blackhorse Lane ('the site') between 01.09.14 and 12.09.14 (see Fig 1). Four trenches (trenches 11 to 14) and one test pit (test pit 15) were excavated as part of a first phase of evaluation on the south eastern part of the site. The Phase 1 development area is shown on Fig 2. This document reports on the findings.
- 1.1.2 A desk based *Historic Environment Assessment* was previously prepared that covered the whole area of the site (MOLA 2013). This document should be referred to for information on the natural geology, archaeological and historical background of the site, and the initial interpretation of its archaeological potential.

1.2 Planning background

- 1.2.1 The legislative and planning framework in which the evaluation took place was fully set out in the *Historic Environment Assessment* which formed the project design for the evaluation (see Section 9, MOLA 2013). To summarise here:
- 1.2.2 The evaluation was carried out to fulfil a condition attached to the Planning Consent given by the Local Authority (Consent reference 2013/0554; Condition number 10).

1.3 Scope of the evaluation

- 1.3.1 Evaluation is defined by English Heritage as intended to provide information about the archaeological resource in order to contribute to the:
- 1.3.2 - formulation of an appropriate response or mitigation strategy to planning applications or other proposals which may adversely affect such archaeological remains, or enhance them; and/or
- 1.3.3 - formulation of a proposal for further archaeological investigations within a programme of research
- 1.3.4 An archaeological evaluation is a limited fieldwork exercise designed to test the conclusions of preliminary desk based work. It is not the same as full excavation.
- 1.3.5 The evaluation was carried out within the terms of the relevant Standard for evaluation specified by the Institute for Archaeologists (IFA, 2008).
- 1.3.6 All work has been undertaken within the research priorities established in the Museum of London's A research framework for London Archaeology, 2002.
- 1.3.7 All work was undertaken within research aims and objectives established in the Written Scheme of Investigation for the evaluation (Section 1.7)

2 Topographical and historical background

2.1 Archaeology and Topography

- 2.1.1 A detailed description of the topography, geology, archaeology and history of the site was provided in the earlier historic environment assessment (MOLA 2013). A brief resume is provided here:
- 2.1.2 The site lies on the eastern slope of the River Lea valley and there is a visible slope across the site sloping from east to west towards the Dagenham Brook. Outside of the site, on Blackhorse Lane, the existing ground level lies between 12.1m and 12.3 m above OD (above Ordnance Datum). Ground level towards the western part of the site where Forest Road / Ferry Lane crosses Dagenham Brook lies at 8.2m OD. Thus ground level drops c 4.0m over a distance of c 300m.
- 2.1.3 The north-western part of the site lies directly over the Solid geological strata of the Lower Eocene London Clay Formation, laid down approximately 50 million years ago. The south-eastern half of the site lies over the deposits of the Leytonstone Gravel Formation; river terrace deposits mostly comprising sand and gravel deposited by the River Lea during the Pleistocene epoch, c 128 to 280,000 years ago. The Leytonstone Gravels equates chronologically with the Taplow Gravels of the River Thames. To the north and north-east of the site the Leytonstone Gravels have been incised through by a Pleistocene predecessor of the Dagenham Brook. Deposits of the older Hackney Gravel Formation (c 280 to 350,000 BP) are located c 700m to the east of the site.
- 2.1.4 Due to the sites location on the interface of the Pleistocene terraces and the Holocene alluvial floodplain, there is high potential for palaeoenvironmental remains to survive on the site. These remains could supply detailed evidence of the environment of the River Lea during the Holocene epoch. Such remains would be of low to medium significance for their evidential value.
- 2.1.5 There is an uncertain possibly moderate potential for remains of prehistoric date to be found within the site. Prehistoric remains have been found fairly close to the site but generally within the area of the valley floor of the River Lea. The likelihood of there being such remains is partially dependent on the site's exact position on the ancient valley slope. Remains of prehistoric date would be of low significance if in the form of residual finds or medium significance if providing evidence of settlement.
- 2.1.6 There is low potential for remains of Roman, early medieval (Saxon), or later medieval remains or buried remains from the post-medieval period. There are no known settlement sites from these periods near the site and any remains are likely to be in the form of chance residual finds. Such finds would be of low significance for their evidential value.

3 Evaluation methodology

3.1 Field methodology

- 3.1.1 Four evaluation trenches ranging from c 20m by 1.8m to c 5m by 0.9m and one test pit, 2m by 1m were excavated on the southeastern part of the site. The trenches were excavated to a depth of c 1.2m across the majority of the trench footprint. Machine excavated sondages were dug where appropriate (to a maximum depth of c 3m bgl) to examine the natural deposits and to reach the surface of the gravels. The gravels mark the baseline for deposits of archaeological significance.
- 3.1.2 The slab/ground was broken out and cleared by contractors under MOLA supervision. Trenches were excavated by machine by the contractors, and monitored by a MOLA supervisor.
- 3.1.3 Archaeological excavation was carried out in accordance with the Written Scheme of Investigation (MOLA 2014)
- 3.1.4 Trench locations were individually surveyed on site by MOLA surveyors.

3.2 Recording methodology

- 3.2.1 A written and drawn record of all archaeological deposits encountered was carried out in accordance with the Written Scheme of Investigation (MOLA 2014).

3.3 Site archive

- 3.3.1 The site archive consists of;

Number of trench record sheets	5
Number of overall location plans	0
Number of Context (SU) sheets	0
Number of photographs	30
Number of Plan sheets	0
Number of Sections	5

4 Results of the evaluation

For trench locations see Fig 2. General site photographs of the trenches, and where appropriate the excavated sondages are shown on Fig 3 to Fig 10.

4.1 Trench 11

Location	Southernmost of phase 1
Dimensions	5.6m by 1.50m by 1.2m depth (excavated to c. 3m bgl within sondage)
Modern ground level/top of slab	9.93mOD
Base of modern fill	9.54mOD
Depth of archaeological stratigraphy above natural	None seen
Level of base of lowest features or deposits observed	None seen
Top of surviving natural observed at	9.24mOD or N/A
Level of base of trench	8.09mOD

- 4.1.1 Orangey brown sandy gravel was observed at the base of a sondage within the trench (Fig 3). Above this was compact yellow orangey brown sandy clay (brickearth). This was overlain by a thin layer of brickearth mottled with light grey and brown. Overlying this was a dark grey silty clay and a thicker layer of industrial waste and dumping. The ground slab consisted of 50mm of poured concrete. No archaeology or archaeological deposits were observed.

4.2 Trench 12

Location	Northernmost of phase 1
Dimensions	20m by 1.8m by 1.2m depth (excavated to c. 3m bgl within sondage)
Modern ground level/top of slab	11.18mOD
Base of modern fill	10.28mOD
Depth of archaeological stratigraphy above natural	None seen
Level of base of lowest features or deposits observed	None seen
Top of surviving natural observed at	9.97mOD
Level of base of trench	8.18m OD

- 4.2.1 The deposits observed at the base of a sondage consisted of a compact mid orangey brown silty clay 'brickearth' that became sandier with depth (Fig 4). This was overlain by approximately 0.2m of brickearth mottled with light grey and brown. Overlying this was a mid-grey silty clay horizon with occasional post medieval pottery and CBM inclusions. These inclusions may be the result of intrusion from the layer of industrial waste and dumping overlying it. Ground level was formed of concrete. To the south only one slab of concrete was found, but to the north two slabs totalling 0.7m of concrete were observed.
- 4.2.2 Truncating the trench at various points were ceramic pipe services. Including a concrete covered service which separated the trench in to two halves. This trench

was originally meant to be 10m long but was extended to 20m to offset the reduction in other trench lengths. No archaeology or archaeological deposits were observed

4.3 Trench 13

Location	Easternmost of phase 1
Dimensions	13.85m by 1.8m by 1.2m depth (excavated to c 3m bgl within the sondage)
Modern ground level/top of slab	11.84mOD
Base of modern fill	10.86mOD
Depth of archaeological stratigraphy above natural	None seen
Level of base of lowest features or deposits observed	None seen
Top of surviving natural observed at	10.75mOD
Level of base of trench	8.84mOD

- 4.3.1 The lowest observed deposit, observed within the sondage, consisted of a compact orangey brown brickearth underlying a layer of compact grey brickearth (Fig 5). Above this was another layer of compact orangey brown brickearth with the same looser mottled brickearth lenses seen across the rest of the site. Overlying this was a grey silty clay and then a layer of industrial waste/dumping. All of this was overlain by a sandy backfill layer with frequent CBM, mortar and rubble. This was topped by reinforced concrete.
- 4.3.2 Several modern services truncated the trench, running north-south. Additionally a brick lined 19th century square soak away was observed in the eastern part of the trench. No earlier archaeological remains were observed.

4.4 Trench 14

Location	South-eastern corner
Dimensions	5.7m by 0.9m by 1.2m depth (excavated to c 3m bgl within the sondage)
Modern ground level/top of slab	11.03mOD
Base of modern fill/slab	10.53mOD
Depth of archaeological stratigraphy above natural	None seen
Level of base of lowest features or deposits observed	None seen
Top of surviving natural observed at	10.33mOD
Level of base of trench	8.03mOD

- 4.4.1 A compact mid orangey brown sandy clay (observed in the sondage only) that became sandier with depth was observed underlying approximately 0.2m of a sandy clay deposit mottled with light grey and brown. Overlying this was a layer of grey silty clay and approximately 0.3m of made ground and industrial waste. Ground surface consisted of a layer of concrete forming a car park. No archaeological remains were observed.

4.5 Test Pit 15

Location	South-eastern corner
Dimensions	2m by 1.3m by 0.4m depth
Modern ground level/top of slab	11.08mOD
Base of modern fill	Not reached
Depth of archaeological stratigraphy above natural	NA
Level of base of lowest features or deposits observed	NA
Top of surviving natural observed at	N/A
Level of base of trench	10.68mOD

- 4.5.1 Test pit 15 was excavated to compensate for the reduced length of Trench 14. Its location was the only place it could be put at that time due to issues of access and services. However, once the concrete was broken out additional services were found and therefore excavation was halted. Modern made ground was discovered under the reinforced concrete.

4.6 The site as a whole

- 4.6.1 The evaluation has shown that concrete, modern made ground and industrial dumping exists over the whole of the site, sometimes up to 1m in depth. There is further truncation extending deeper than this in the form of services and occasional 19th century features (brick-lined soak away). No archaeology (features or deposits) was observed in any of the trenches, although a better understanding of the natural topography and geology was gained.
- 4.6.2 The natural brickearth slopes towards the River Lea, from 10.75mOD in the east to 9.42mOD in the west. It is over 2m in depth at its greatest extent (limit not seen), but not less than 1m in thickness. Gravel was observed only in trench 11 at 8.27mOD. It is unclear if the gravel also slopes towards the Lea, but it definitely slopes towards the north as trenches 12 and 14 were excavated to greater depths and no gravel was seen (see Figs 3-8).
- 4.6.3 Previous geotechnical investigations support these findings (KF Geotechnical 2012). Of three boreholes sunk within the current area of investigation, only the one closest to trench 11 found the gravel terrace, and at approximately the same height. A prior study of the lower Lea valley landscapes (Corcoran et al 2011) suggests a tributary of the River Lea ran east to west, just to the north of the site. This would explain why the gravel is higher in the south, as the tributary would have eroded and removed the gravel to the north. The silty and sandy clays (brickearth) found within the trenches are most likely channel fills laid down by the tributary. The sedimentary characteristics of the 'brickearth' suggest that it was deposited sometime during the Pleistocene epoch.

5 Archaeological potential

5.1 Answering original research aims

- What is the nature and level of the natural topography?
 - The ground surface slopes from 11.84mOD in the east to 11.18mOD in the west and 9.93mOD in the south. The mid orangey brown sandy clay natural 'brickearth' deposits reflect this topographic trend. The brickearth was found to slope from 10.75mOD in the east to 9.42mOD in the west.
- Is there any evidence for deposits that can be used to reconstruct past environments?
 - Although Pleistocene fine-grained brickearth deposits were encountered on the site these were observed to be heavily oxidised, in-organic and non-fossiliferous. Therefore there is no potential for the survival of palaeoenvironmental remains that could be used to reconstruct past environments
- Is there any evidence of settlement activity on the valley slopes of the Lea?
 - There is no evidence of settlement activity.
- What are the earliest deposits identified?
 - The earliest deposits consisted of post medieval dumped deposits and a 19th-century brick lined soak away.
- What are the latest deposits identified?
 - The latest deposits consisted of post medieval dumping.
- What is the extent of modern disturbance?
 - The level of modern disturbance varied across the site. Modern services were found in all the interventions and post medieval deposits were observed extending to at least 1m below the ground surface.

5.2 General discussion of potential

5.2.1 The evaluation has shown that in this area of site the potential for the survival of ancient ground surfaces (horizontal archaeological stratification above natural ground) is limited, as is the potential for the survival of cut features. However, natural brickearth was observed c 1m below ground level suggesting that the horizon where archaeology could be expected to occur appears to be relatively untruncated.

5.3 Significance

5.3.1 No archaeological remains of any level of significance were identified.

5.4 Assessment of the evaluation

5.4.1 All the trenches (apart from test pit 15) were excavated to a depth where it could be expected, if present, to encounter archaeological remains. All the trenches produced negative results. This suggests that the potential for archaeological remains surviving on this part of the site should be considered low.

5.4.2 The location of the trenches provided good coverage of the area currently available. However, due to access issues and existing services the initial scope of the

evaluation was reduced slightly. Only two of the trenches reached full size, with the other two needing to be relocated and shortened. However trench 12 was extended to compensate. With the abundance of live services running through the site it is unlikely that any further trenches can be excavated at this point. Later phases of evaluation are planned for other parts of the site and these will provide a large sampling percentage of the overall site.

6 Proposed development impact and conclusions

- 6.1.1 The development comprises the demolition of the existing commercial and industrial buildings and the redevelopment of the site in to separate blocks for residential apartments, commercial and retail premises and student accommodation. Part of one building, the Blackhorse Lane frontage of the former Gnome Works, is to be refurbished. The foundations of the new buildings would be made up of piles and ground beams. The redevelopment does not include new basements.
- 6.1.2 If present, archaeological remains would be impacted upon by the piled foundations and the ground beams. However, taking into account the results of the evaluation it appears that there are no archaeological deposits surviving on this part of the site. Therefore it is recommended that no further archaeological investigations are undertaken with respect to the Phase 1 development (see Fig 2 for Phase 1 outline). However the final decision rests with the Local Planning Authority as advised by English Heritage.

7 Acknowledgements

- 7.1.1 The author would like to thank Robert Clarke of MacDonald Egan and Gary, Mark and Matt of CCP Ltd for their help on site.

8 Bibliography

- Corcoran, J, Halsey, C, Spurr, G, Burton, E and Jamieson, D, 2011 *Mapping past landscapes in the lower Lea valley* MOLA Monogr 55, London
- English Heritage Greater London Archaeology Advisory Service, 2014 *Standards for archaeological work*
- Institute for Archaeologists, (IFA), 2008 *By-Laws, Standards and Policy Statements of the Institute for Archaeologists, Standard and guidance: field evaluation*
- Institute for Archaeologists (IFA), supplement 2008, *By-Laws, Standards and Policy Statements of the Institute for Archaeologists: Standards and guidance – the collection, documentation conservation and research of archaeological materials*
- KF Geotechnical, 2012 *Report on Ground Investigation and Preliminary Contamination Testing at Blackhorse Lane, Waltham Forest, E17 6DS*, unpub report
- MOLA, 2014, *Written Scheme of Investigation for an evaluation*, MOLA unpub report
- MOLA, 2013, *Historic Environment Assessment for Blackhorse Lane*, MOLA unpub report
- Museum of London, 2002 *A research framework for London archaeology 2002*

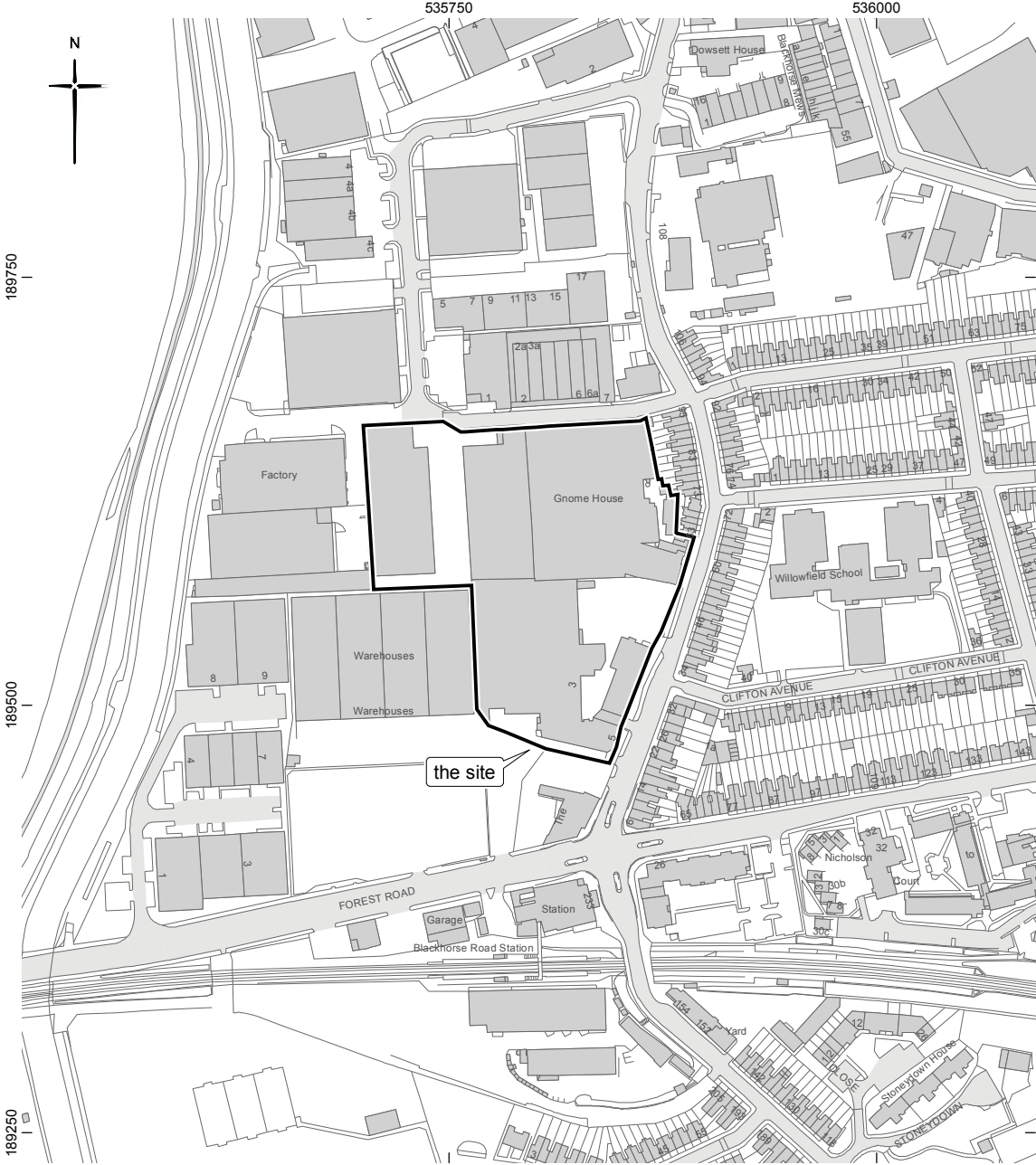
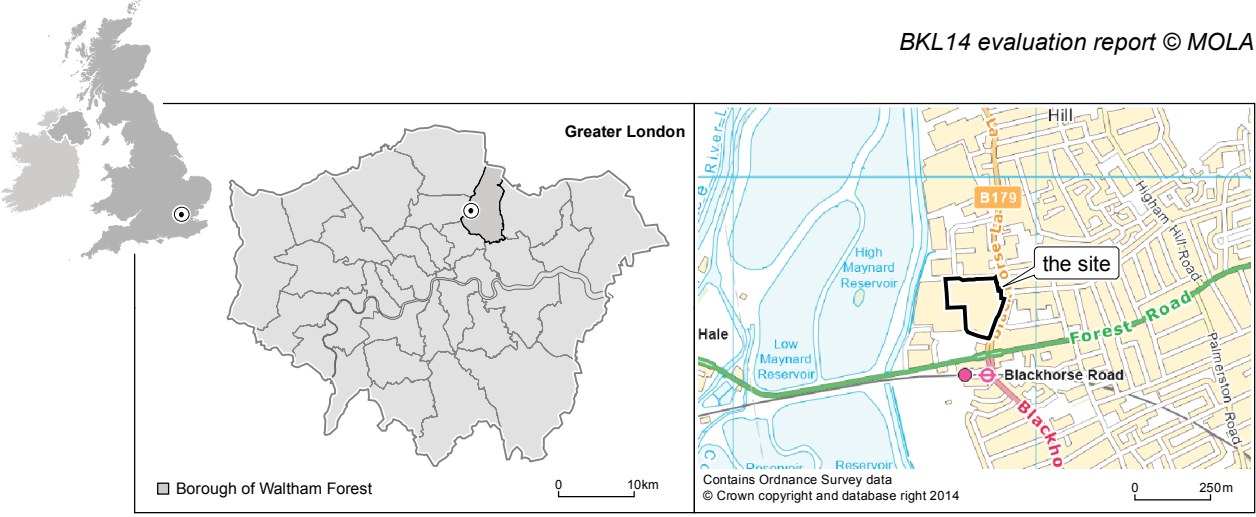


Fig 1 Site location



Fig 2 Location of evaluation trenches

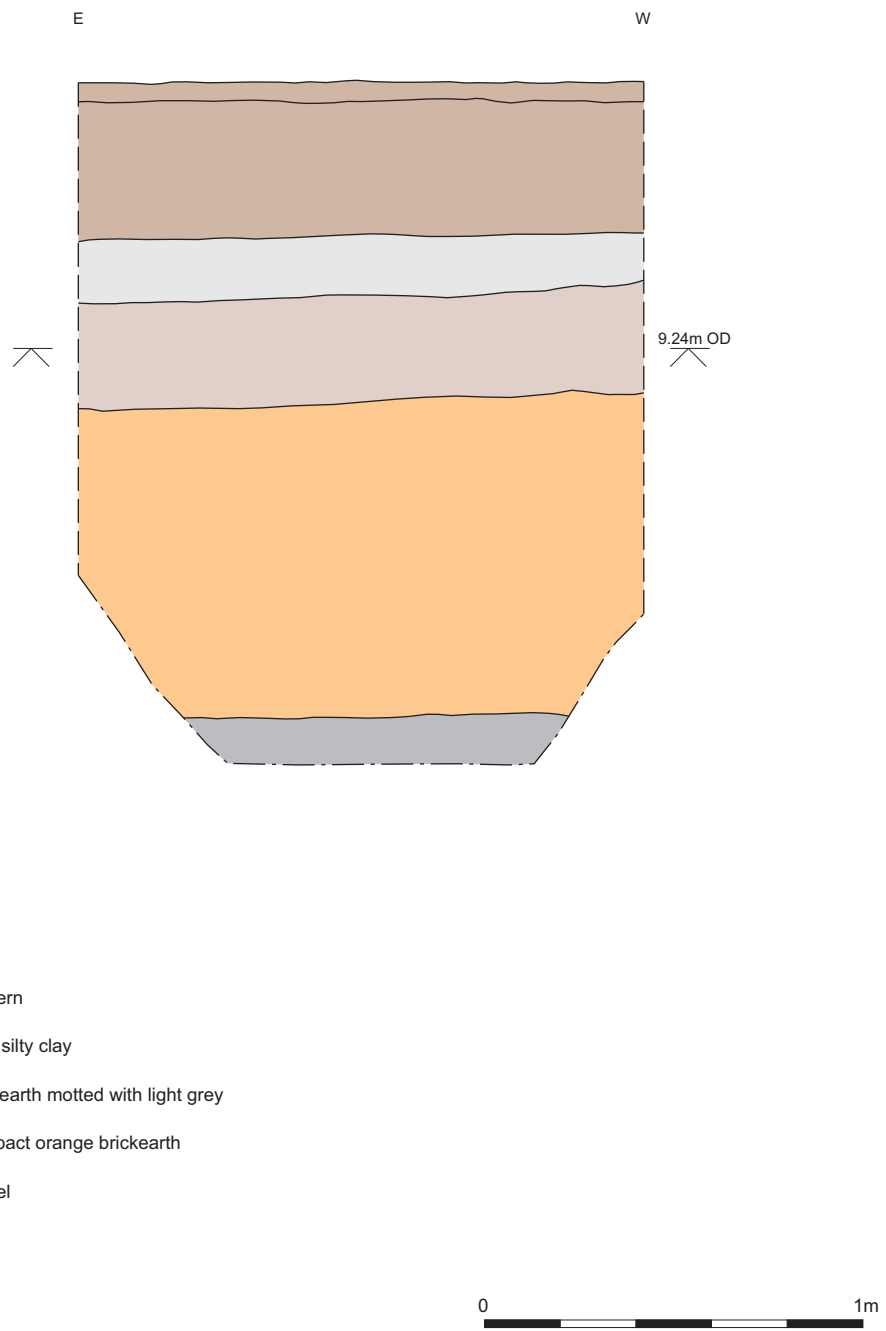
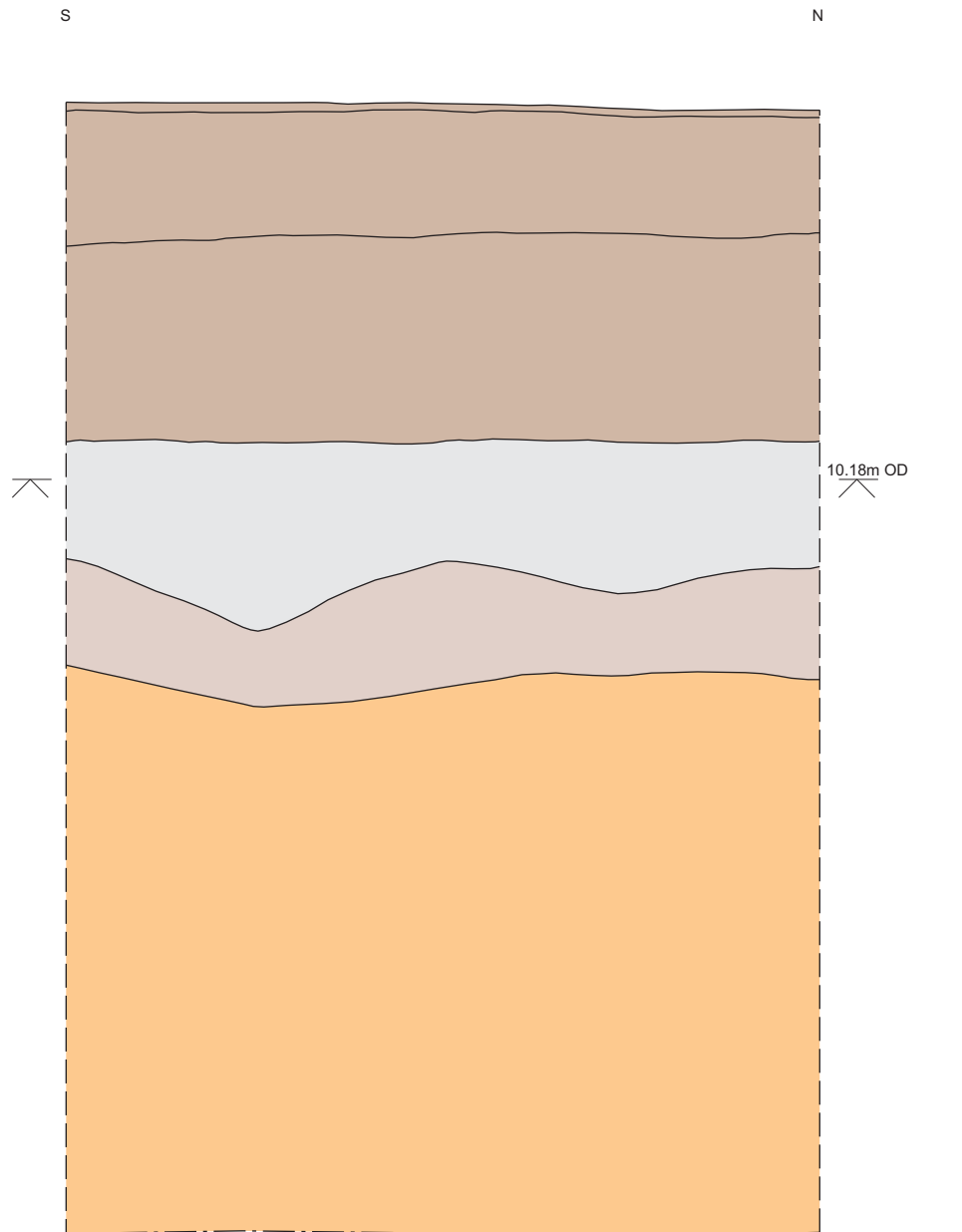
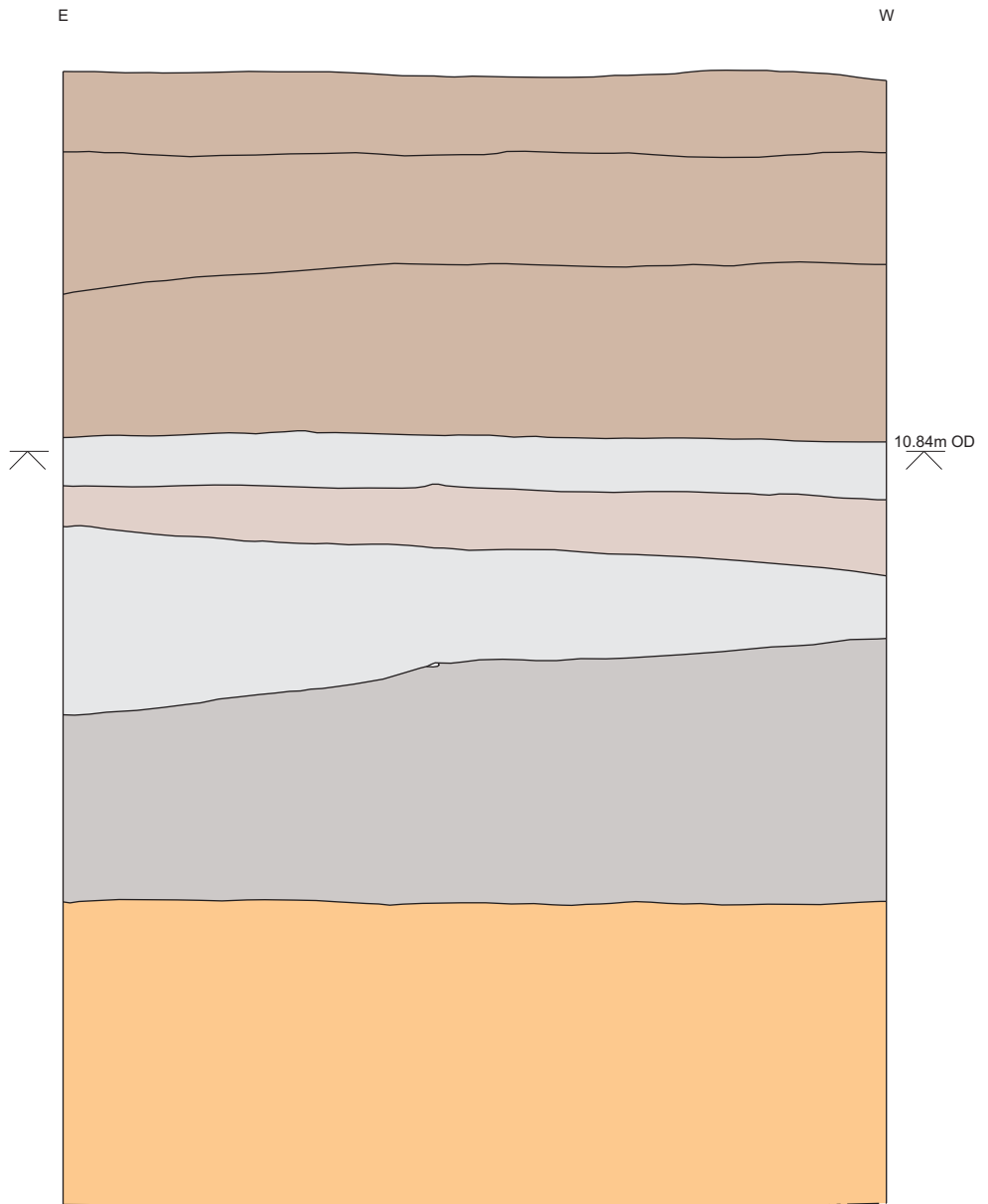




Fig 3 Trench 11 north facing section



- modern
- grey silty clay
- brickearth mottled with light grey
- compact orange brickearth

Fig 4 Trench 12 east facing section



-  modern
-  grey silty clay
-  brickearth mottled with light grey
-  compact orange brickearth
-  gray brickearth

0  1m

Fig 5 Trench 13 north facing section



Fig 6 Photograph of sondage in Trench 11



Fig 7 Photograph of sondage in Trench 12



Fig 8 Photograph of sondage in Trench 13



Fig 9 Trench 11 facing west



Fig 10 Trench 12 facing north



Fig 11 Trench 13 facing east



Fig 12 Trench 14 facing south



Fig 13 Test Pit 15 facing east

9 NMR OASIS archaeological report form

9.1 OASIS ID: molas1-190311

Project details

Project name	Blackhorse Lane
Short description of the project	Four evaluation trenches and a test pit were excavated on the site between 01.09.14 and 12.09.14. It was found that the first c 1m of ground across site consists of made ground and industrial waste, as well as numerous services. Additionally there are also services which extend beyond this depth and truncate the natural. Despite this, the natural brickearth still exists relatively untruncated which suggests there is potential for surviving archaeology. Within the four trenches no archaeology or archaeological deposits were discovered. However, two of the trenches had to be reduced in size and relocated due to presence of live services, which greatly reduced the area of analysis covered.
Project dates	Start: 01-09-2014 End: 12-09-2014
Previous/future work	No / Yes
Any associated project reference codes	BKL14 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Industry and Commerce 1 - Industrial
Current Land use	Industry and Commerce 2 - Offices
Monument type	N/A None
Significant Finds	N/A None
Methods & techniques	"Sample Trenches"
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)
Project location	
Country	England
Site location	GREATER LONDON WALTHAM FOREST WALTHAMSTOW Blackhorse Lane
Postcode	E17 6DS
Study area	5000.00 Square metres
Site coordinates	TQ 35800 89600 51.5883752276 -0.0395168381692 51 35 18 N 000 02 22 W Point

Height OD / Depth	Min: 9.42m Max: 10.75m
Project creators	
Name of Organisation	MOLA
Project brief originator	English Heritage
Project design originator	MOLA
Project director/manager	Craig Halsey
Project supervisor	Helen Vernon
Type of sponsor/funding body	Developer
Name of sponsor/funding body	MacDonald Egan
Project archives	
Physical Archive Exists?	No
Digital Archive recipient	LAARC
Digital Contents	"none"
Digital Media available	"GIS","Images raster / digital photography"
Paper Archive recipient	LAARC
Paper Contents	"none"
Paper Media available	"Context sheet","Report"
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Blackhorse Lane, Waltham Forest, London, E17 6DS, Report on archaeological evaluation
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