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University of Reading

BARRATT INDUSTRIAL ESTATE, GILLENDER STREET, LONDON BOROUGH OF TOWER HAMLETS

Report on the Geoarchaeological Field Investigations

NGR: TQ 3819 8215

Site Code: GLL18

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1. NON-TECHNICAL SUMMARY

The aim of the geoarchaeological investigations at the Barratt Industrial Estate site was to (1) clarify the nature of the sub-surface stratigraphy across the site, in particular the presence, depth, extent and likely date of any former land surfaces, alluvial and peat deposits; and (2) evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, a programme of geoarchaeological fieldwork and deposit modelling of the surface elevation and thickness of the major stratigraphic units at the site was carried out, incorporating logs from previous geotechnical boreholes and records from two new geotechnical boreholes observed by a geoarchaeologist.

The results of the geoarchaeological investigations have contributed to our understanding of the Holocene stratigraphic sequence in this area of the Lea Valley. Overlying the London Clay bedrock at the site is a sequence of Devensian Kempton Park Gravel, and variable thicknesses of Made Ground, which in places has truncated the sequence significantly. No alluvium was recorded in any of the geotechnical boreholes at the site, and in all cases the Gravel is directly overlain by Made Ground. The palaeoenvironmental potential of the sequences at the site is therefore considered to be negligible, and no further geoarchaeological or palaeoenvironmental investigations are recommended. With regards to its archaeological potential, the site occupies an area on the margins of the floodplain of the River Lea. However, any archaeological potential is likely to be significantly limited by past development impacts at the site, since the modern Made Ground lies directly on the Gravel, and is likely to have truncated the sequence.

The Gravel within the area of the site is considered to represent the Devensian Kempton Park Gravel, and with regards to the Palaeolithic archaeological potential, no Palaeolithic artefacts appear to have been recorded anywhere from the Kempton Park Gravel (see Wymer, 1999, Map 9). The apparent absence of archaeological remains in this unit as a whole is consistent with the generally accepted absence from Britain of either Neanderthals or modern humans during the Ipswichian, and their sparse and discontinuous presence during the whole of the post-Ipswichian period into which the Kempton Park Gravel may fit stratigraphically.

2. INTRODUCTION

2.1 Site context

This report summarises the findings arising out of the geoarchaeological monitoring and deposit modelling undertaken by Quaternary Scientific (University of Reading) in connection with the proposed development of land at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets (National Grid Reference (NGR): TQ 3819 8215; Figure 1). Quaternary Scientific were commissioned by CgMs Consulting to undertake the geoarchaeological investigations. The site is in the lower valley of the River Lea - the eastern boundary of the site is adjacent to the present-day channel of the Lea, at a point where the river, known here as Bow Creek, begins to follow a very convoluted meandering course approximately 2km from its confluence with the River Thames. The site is on the western side of the floodplain, bordered to the north by Navigation Road, to the west by Gillender Street and to the south by industrial units. The British Geological Survey (http://mapapps.bgs.ac.uk/geologyofbritain/home.html) shows the site underlain by London Clay and Kempton Park Gravel. Immediately to the east of the site Alluvium is shown as the superficial geology, described as comprising clay, peat, sand and silt. In fact, the alluvial deposits of the Lower Thames and its tributaries are almost everywhere underlain by Late Devensian Late Glacial Gravels (in the Lea valley, the Lea Valley Gravel of Gibbard, 1985), and this gravel is widely recorded in boreholes to the east of the site.

The site lies within the area investigated as part of the Lea Valley Mapping Project (Corcoran *et al.,* 2011). In this project the Lea Valley has been divided into Landscape Zones characterised by their Quaternary landscape history, based largely on sedimentary evidence derived from borehole records. The Gillender Street site is located within Landscape Zone LZ1.6, which represents the deposits of a tributary valley. Within this zone, the surface of the Pleistocene Gravel is estimated as lying at 0m OD, overlain by sands that accumulated within a tributary channel draining off the river terrace from the south and west (Corcoran *et al.*, 2011). Peat is frequently recorded overlying the sands in this zone; this is generally thin (<0.3m), but significantly thicker horizons (up to 3m) are recorded towards the north of the zone. The peat is undated and may be of different age to that recorded throughout the rest of the Lower Thames Valley/Lower Lea Valley, due to the different and possibly localised processes that led to its formation (Corcoran *et al.*, 2011).

Three boreholes were put down at the site during a previous geotechnical site investigation (see CgMs Heritage, 2018). These boreholes recorded a sequence of Made Ground directly overlying London Clay bedrock at *ca.* -1m OD in the western area of the site, with Made Ground overlying Gravel at between *ca.* 0 and -2m OD in the east. No alluvium was recorded here, perhaps suggesting that the site is more similar to Corcoran *et al.*'s (2011) Landscape Zone 1.8, where the Gravel rises to form a 'low terrace' towards the edge of the floodplain, which is in places separated from the river terrace to the west by narrow scoured channels. Relatively few interventions have been undertaken in Landscape Zone 1.8 (see Corcoran *et al.*, 2011); the Gillender Street site thus offers an opportunity to contribute to our understanding of landscape evolution in this part of the Lower Lea and Lower Thames Valley. Corcoran *et al.* (2011) highlight the archaeological potential

of this zone, where prehistoric artefacts have been identified in similar ecotonal landscape positions, lying at the margins of the floodplain and the higher, drier ground of the low terrace.

2.2 Geoarchaeological, palaeoenvironmental and archaeological significance

Although limited, the existing records from the site indicate variation in the height and thickness of the main stratigraphic units across the site. Such variations are significant as they represent different environmental conditions that would have existed in a given location. For example: (1) the varying surface of the River Terrace Gravels may represent the location of former channels and bars (as outlined above); and (2) where alluvium is recorded, it represents periods of channel activity/changing hydrological conditions. Thus by studying the sub-surface stratigraphy across the site and wider area in greater detail, it will be possible to build our understanding of the former landscapes and environmental changes that took place across space and time.

Organic-rich sediments (in particular peat), if identified, have potential to provide a detailed reconstruction of past environments on both the wetland and dryland. In particular, they provide the potential to increase knowledge and understanding of the interactions between hydrology, human activity, vegetation succession and climate. Significant vegetation changes during the Holocene include the Mesolithic/Neolithic decline of elm woodland, the Neolithic colonisation and decline of yew woodland; the Late Neolithic/Early Bronze Age growth of elm on Peat, and the general decline of wetland and dryland woodland during the Bronze Age. Such investigations have successfully been carried out through the assessment/analysis of palaeoecological remains (e.g. pollen, plant macrofossils & insects) and radiocarbon dating.

Finally, areas of high gravel topography, soils and peat represent potential areas that might have been utilised or even occupied by prehistoric people, evidence of which may be preserved in the archaeological (e.g. features and structures) and palaeoenvironmental record (e.g. changes in vegetation composition). The potential for archaeological remains at the site has been considered as part of the archaeological DBA (CgMs Heritage, 2018).

2.3 Aims and objectives

On the basis of the geoarchaeological, palaeoenvironmental and archaeological potential of the site outlined above, a programme of geoarchaeological field investigations is required in order to enhance our understanding of the sub-surface stratigraphy of the site, and to make recommendations for any further geoarchaeological/palaeoenvironmental investigation of the deposits (if necessary).

Five significant research aims relevant to the geoarchaeological investigations at the site are outlined here:

1. To clarify the nature of the sub-surface stratigraphy across the site, in particular the presence, depth, extent and likely date of any former land surfaces, alluvial and peat deposits;

2. To evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs;
3. To investigate whether the sequences contain any artefact or ecofact evidence for prehistoric or historic human activity;
4. To investigate whether the sequences contain any evidence for natural and/or anthropogenic changes to the landscape (wetland and dryland);
5. To integrate the new geoarchaeological record with other recent work in the local area for publication in an academic journal (where appropriate).

In order to address the first two of these aims, a programme of geoarchaeological field investigations has been undertaken, the stratigraphic data from the existing geotechnical records used to produce a basic two-dimensional deposit model of the major depositional units across the site.

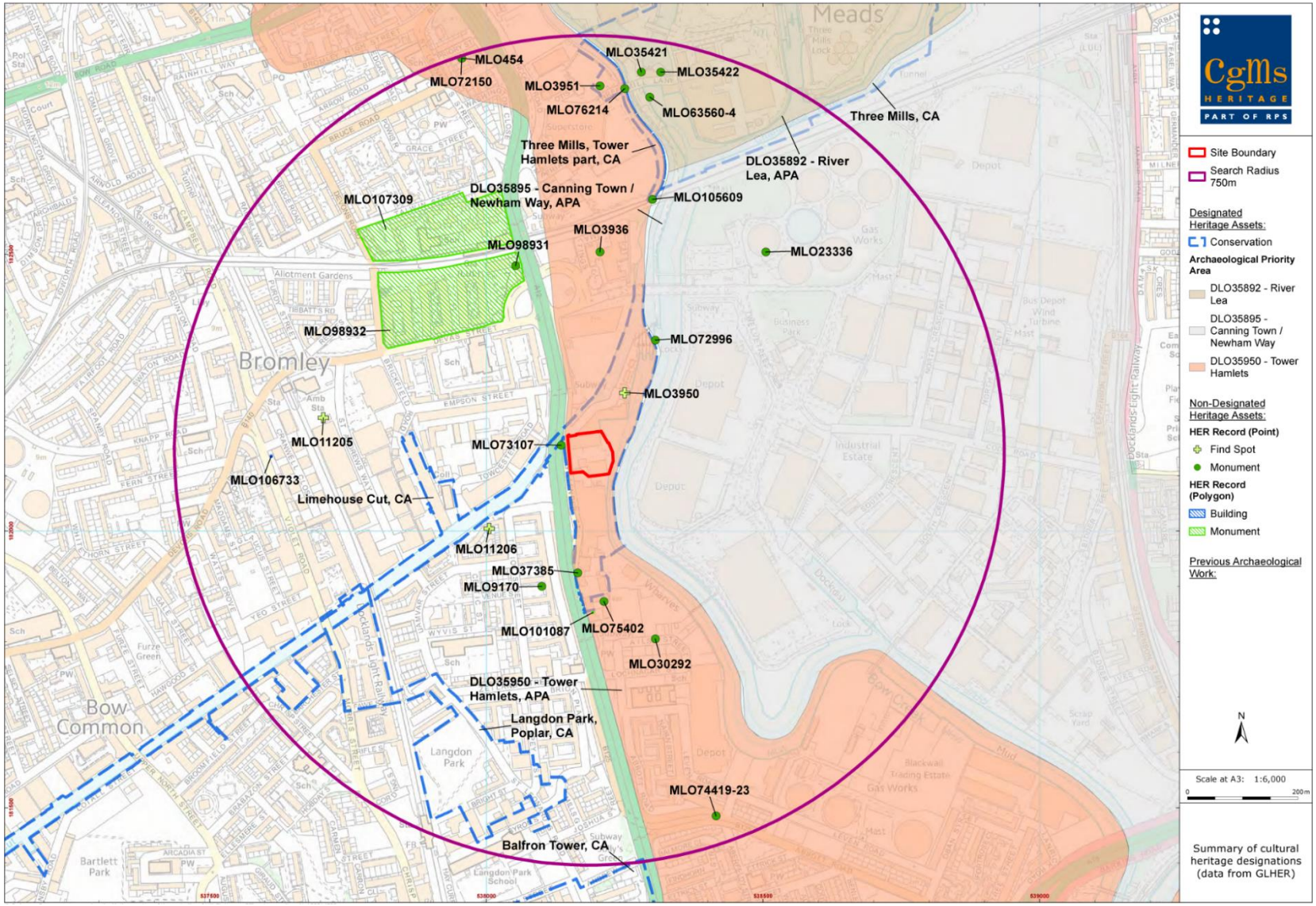

Figure 1: Location of Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets showing GLHER data (see CgMs Heritage, 2018).

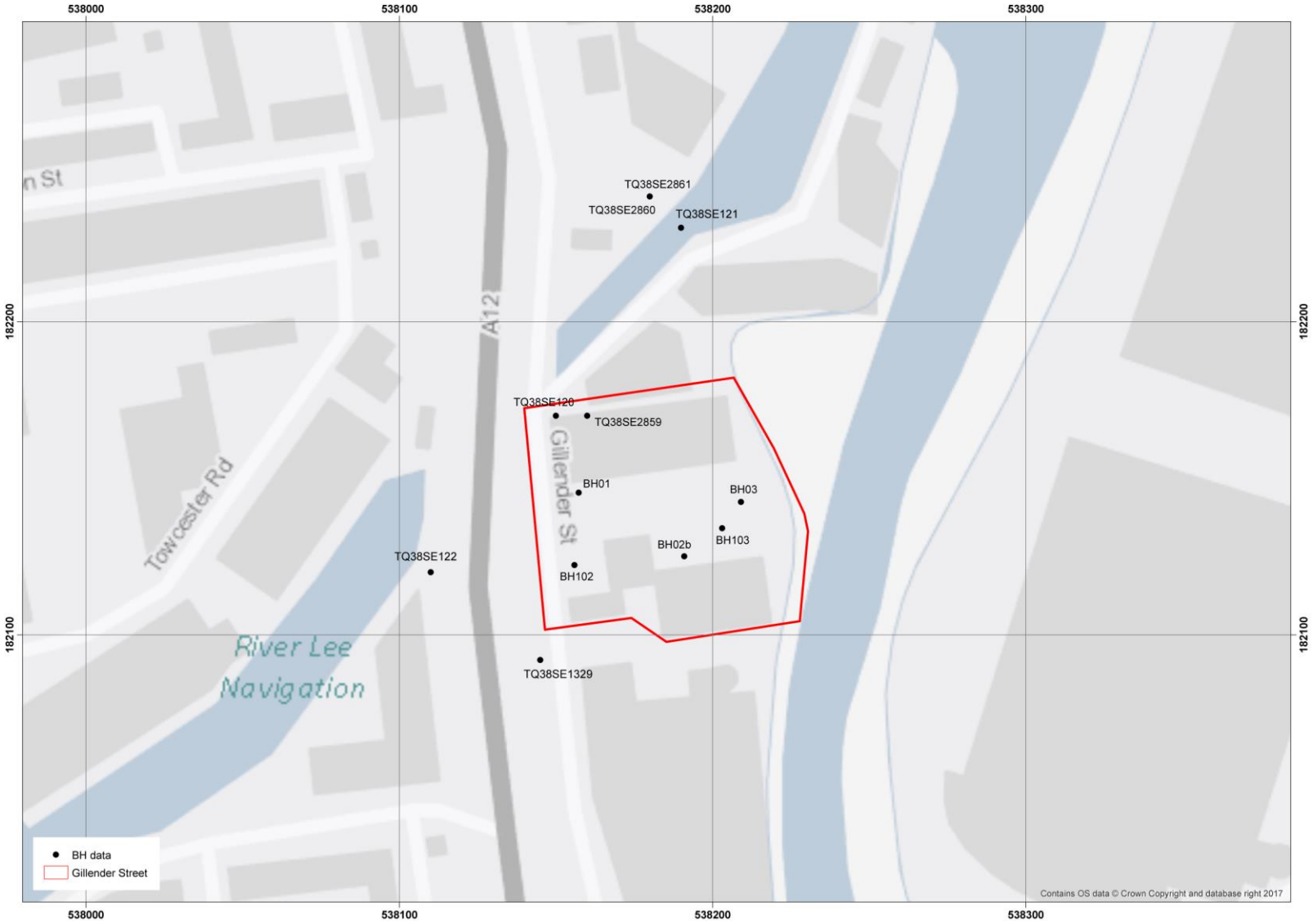

Figure 2: Location of the geotechnical and BGS archive boreholes at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

3. METHODS

3.1 Field investigations and lithostratigraphic descriptions

Two geotechnical boreholes were put down at the site in June 2018 by Soiltechnics Ltd using a rotary auger (Figure 2) under the observation of a geoarchaeologist (BH102 and BH103). This coring technique is a suitable method for the recovery of continuous, undisturbed core samples and where necessary, provides sub-samples suitable for not only sedimentary and microfossil assessment and analysis, but also macrofossil analysis. The lithostratigraphy of the core samples was described in the field using standard procedures for recording unconsolidated sediment and organic sediments, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts) (Tröels-Smith, 1955). The procedure involved: (1) cleaning the sample using a scalpel; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel (Grana glareosa; Gg), fine sand (Grana arenosa; Ga), silt (Argilla granosa; Ag) and clay (Argilla steatoides); (4) recording the degree of peat humification and (5) recording the unit boundaries e.g. sharp or diffuse. The results of the geoarchaeological descriptions of the boreholes are displayed in Tables 2 and 3, with the geotechnical logs shown in the Appendix. The spatial attributes of the boreholes are displayed in Table 1 and in Figure 2.

3.2 Deposit modelling

The deposit model for the Barratt Industrial Estate site was based on a review of the existing geotechnical data for the site (see CgMs Heritage, 2018), British Geological Survey archive boreholes (http://mapapps.bgs.ac.uk/geologyofbritain/home.html) and the two new geotechnical boreholes monitored in the field. This review resulted in a total of 12 borehole records (see Figure 2 and Table 1). Sedimentary units from the boreholes/test pits were classified into three main groups: (1) Bedrock, (2) Gravel, and (3) Made Ground. The classified data for groups 1-3 were then input into a database within the RockWorks 16 geological utilities software, the output from which was displayed using ArcMAP 10. Models of surface height were generated for the Bedrock (Figure 4) and Gravel (Figure 5) using an Inverse Distance Weighted algorithm. Thickness of the Made Ground (Figure 6) were also modelled (also using an Inverse Distance Weighted algorithm). A west to east stratigraphic profile of selected boreholes across the site is shown in Figure 3.

Because the boreholes are not uniformly distributed over the area of investigation, the reliability of the models generated using RockWorks is variable. In general, reliability improves from outlying areas where the models are largely supported by scattered archival records towards the core area of commissioned boreholes. The distribution of records across the site itself is generally good, with no significant gaps in the model when a 50m radius around each borehole is applied to the models. Because of the 'smoothing' effect of the modelling procedure, the modelled levels of stratigraphic contacts may differ slightly from the levels recorded in borehole logs and section drawings. As a consequence of this, the modelling procedure has been manually adjusted so that only those areas for which sufficient stratigraphic data is present will be modelled. In order to achieve this, a maximum distance cut-off filter equivalent to a 50m radius around each record is applied to all deposit models. In addition, it is important to recognise that multiple sets of boreholes are

represented, put down at different times and recorded using different descriptive terms and subject to differing technical constraints in terms of recorded detail including the exact levels of the stratigraphic boundaries.

Table 1: Borehole attributes for the records used in the deposit model (including stratigraphic data), Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

Name	Easting	Northing	Elevation (m OD)	Total Depth (m)	Made Ground thickness (m)	Top of Gravel (m OD)	Gravel thickness (m)	Top of Bedrock (m OD)
BH01	538157.26	182145.40	5.00	20.45	6.20	Not present	Not present	-1.20
BH02b	538190.95	182125.08	5.00	30.00	7.10	-2.10	0.40	-2.50
BH03	538209.13	182142.46	5.00	20.45	4.90	0.10	3.60	-3.50
BH103	538203.11	182134.04	5.11	10.00	4.50	0.61	3.50	-2.89
BH102	538155.93	182122.27	5.13	10.00	3.50	1.63	0.20	1.43
TQ38SE122	538110.00	182120.00	4.83	18.65	0.00	4.83	0.61	4.22
TQ38SE1329	538145.00	182092.00	5.66	25.20	3.80	Not present	Not present	1.86
TQ38SE120	538150.00	182170.00	7.42	18.29	3.96	3.46	3.05	0.41
TQ38SE2859	538160.00	182170.00	6.98	25.00	3.80	3.18	2.60	0.58
TQ38SE2860	538180.00	182240.00	5.39	18.30	2.50	2.89	4.00	-1.11
TQ38SE2861	538180.00	182240.00	5.34	25.00	3.10	2.24	4.10	-1.86
TQ38SE121	538190.00	182230.00	4.42	19.13	3.96	0.46	2.52	-2.06

4. RESULTS, INTERPRETATION & DISCUSSION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS & DEPOSIT MODELLING

The results of the deposit modelling are displayed in Figures 3 to 7. Figures 4 to 6 provide surface elevation models for the main stratigraphic units (Bedrock London Clay and Gravel), whilst Figure 6 provides a thickness model for the Made Ground. A two-dimensional stratigraphic profile across the site (west-east) is shown in Figure 3. The results of the lithostratigraphic description of the two new geoarchaeological boreholes are shown in Tables 2 and 3. Including the BGS archive boreholes, the results indicate that a sufficient number and spread of boreholes have been put down in the area of the site to permit deposit modelling of the major stratigraphic units. The full sequence of sediments at the site comprises:

1. Bedrock – widely present; rises to the west
2. Gravel – widely present; rises to the west
3. Made Ground – widely present

4.1 Pre-Pleistocene Bedrock

The basal unit recorded at the site is the bedrock London Clay, described as a grey, stiff clay or silty clay in the geotechnical logs. The surface of this unit rises significantly to the west as it rises up out of the present floodplain of the Lower Lea, recorded at between *ca.* -3.5 (BH03) and -2.89m OD (BH103) towards the east, and rising to 1.43m OD towards the west (BH102) (see Figures 3 and 4).

4.2 Pleistocene Gravel

The London Clay bedrock is overlain by a horizon of sandy gravel across the site. The surface of the Gravel rises towards the west, recorded at between -2.1 (BH02b) and 0.61m OD (BH103) in the eastern area of the site, and between 1.63 (BH102) and 3.46m OD (TQ38SE120) towards the west. In most cases the Gravel lies above 0.1m OD, and the lower level of -2.1m OD in borehole BH02b is considered to represent artificial truncation during subsequent development at the site or the emplacement of the overlying Made Ground. The sandy gravel here is indicative of a high-energy braided river system which, while it was active, would have been characterised by longitudinal gravel bars and intervening low-water channels in which finer-grained sediments might have been deposited.

Across the majority of the site the Gravel is considered to represent the Kempton Park Gravel of Gibbard (1985), deposited during the Middle to Late Devensian (80,000 to 30,000 years before present) and forming a 'low terrace' at the edge of the present floodplain of the River Lea. Although it is difficult to separate the various Gravel terraces in the Lower Thames Valley on the basis of elevation alone, where the Gravel rises above *ca.* 4m OD just to the west of the site (TQ38SE122; 4.83m OD) it most likely represents the Wolstonian (MIS 6-10; 352-130,000 years before present) Taplow Gravel. Gibbard (1985) shows the Taplow Gravel lying at about 10m OD in the Stratford area, although it is noted that it both thins and falls towards the valley of the River Lea. Corcoran *et*

al. (2011) show the surface of the Taplow Gravel in Landscape Zone LZ1.9 (mapped to the west of the site) at above *ca*. 4m OD.

4.3 Made Ground

The sequence at the site is capped by significant thicknesses of Made Ground, between 3.5 (BH102) and 7.1m thick (BH02b) (Figure 6). In general the Made Ground is thicker towards the southeast, where the underlying Gravel topography is lower. No alluvium was recorded in any of the geotechnical boreholes at the site, and in all cases the Gravel is directly overlain by Made Ground. As stated above, in places the surface of the Gravel may be a result of artificial truncation during subsequent development of the site, or during the emplacement of the Made Ground.

Table 2: Lithostratigraphic description of borehole BH102, Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

Depth (m OD)	Depth (m bgs)	Description	Stratigraphic unit
5.13 to 4.63	0.00 to 0.50	Made Ground of concrete, tarmac and gravel.	MADE GROUND
4.63 to 3.93	0.50 to 1.20	Made Ground of brown sandy clay with frequent brick and concrete rubble.	
3.93 to 1.93	1.20 to 3.20	Made Ground of brown sandy clay with frequent gravel, brick and concrete rubble.	
1.93 to 1.63	3.20 to 3.50	Made Ground of reworked gravel.	
1.63 to 1.43	3.50 to 3.70	Gg2 Ga2; orange sand and gravel. Clasts are flint, average diameter 30mm; well-rounded to sub-angular. Diffuse contact in to:	KEMPTON PARK GRAVEL
1.43 to 0.93	3.70 to 4.20	As4 Ga+ Ag+; very stiff grey clay with a trace of sand and silt.	LONDON CLAY

Table 3: Lithostratigraphic description of borehole BH103, Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

Depth (m OD)	Depth (m bgs)	Description	Stratigraphic unit
5.11 to 4.62	0.00 to 0.49	Concrete	MADE GROUND
4.62 to 3.76	0.49 to 1.35	Made Ground of dark brown clayey sandy gravel with brick and concrete rubble.	
3.76 to 0.61	1.35 to 4.50	Masonry wall foundation	
0.61 to -2.89	4.50 to 8.00	Gg2 Ga2; orange sand and gravel. Clasts are flint, average diameter 30mm; well-rounded to sub-angular. Diffuse contact in to:	KEMPTON PARK GRAVEL
-2.89 to -4.89	8.00 to 10.00	As4 Ga+ Ag+; very stiff grey clay with a trace of sand and silt.	LONDON CLAY

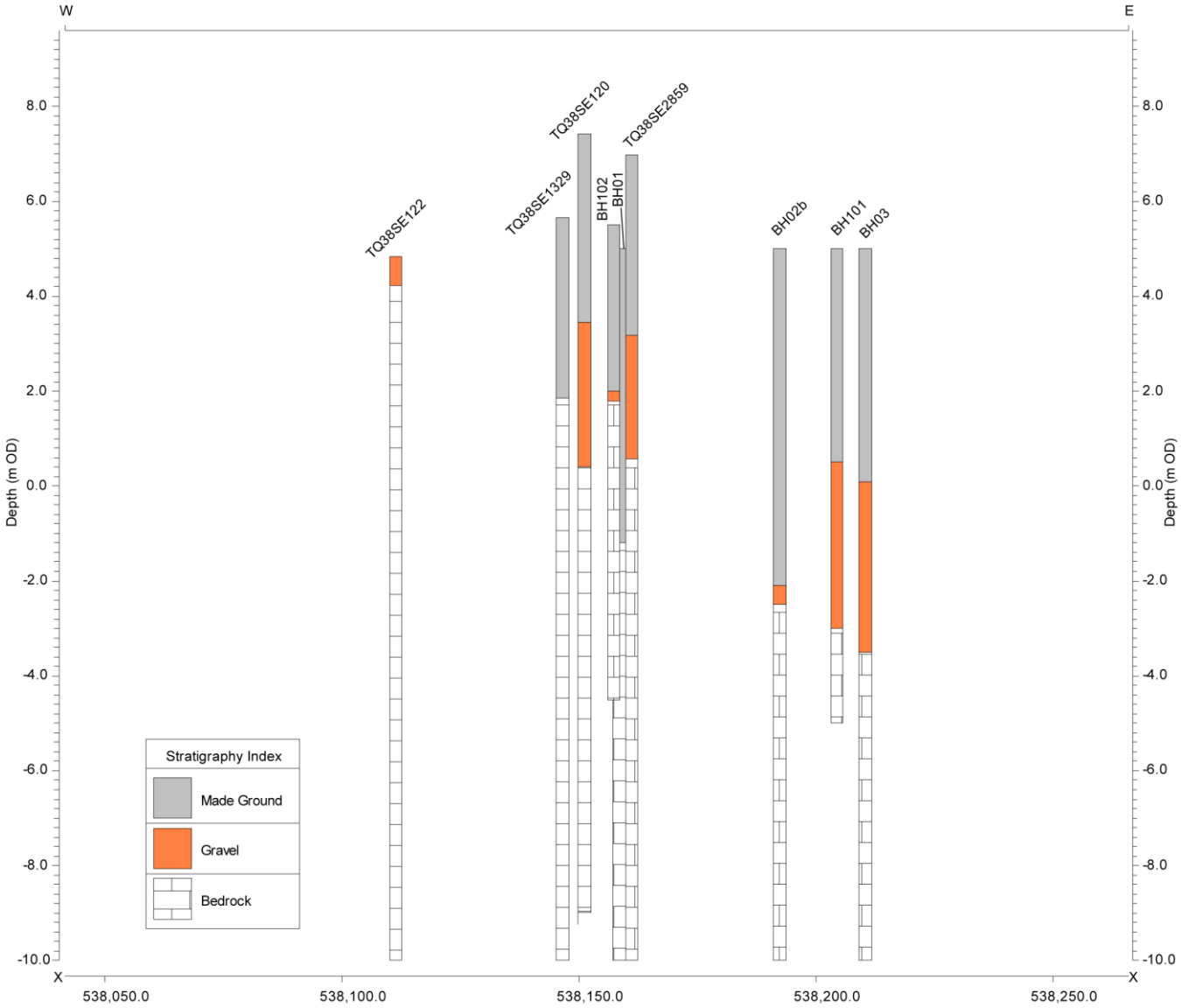

Figure 3: West-east stratigraphic profile across the site at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

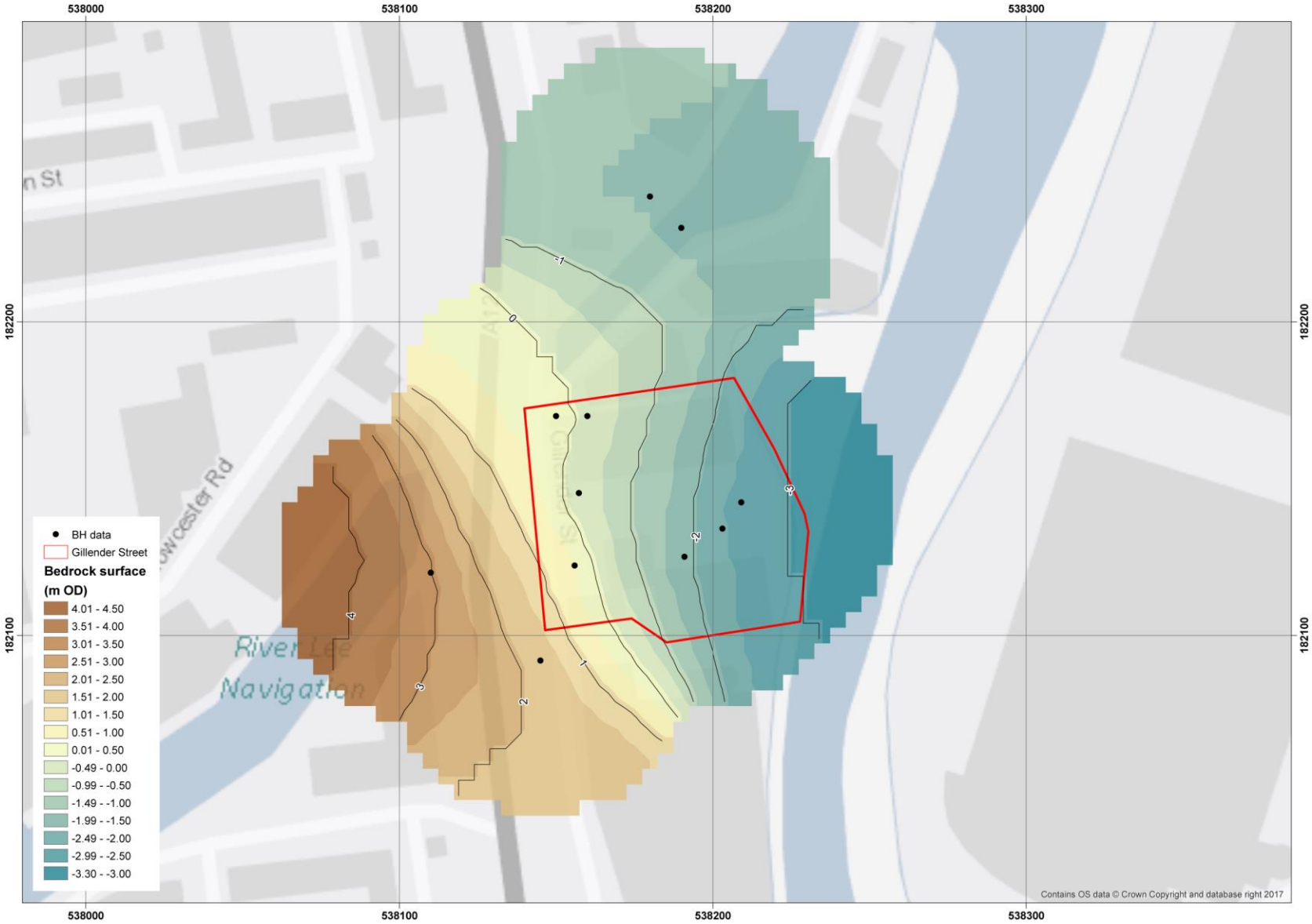

Figure 4: Surface of the bedrock (m OD) at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

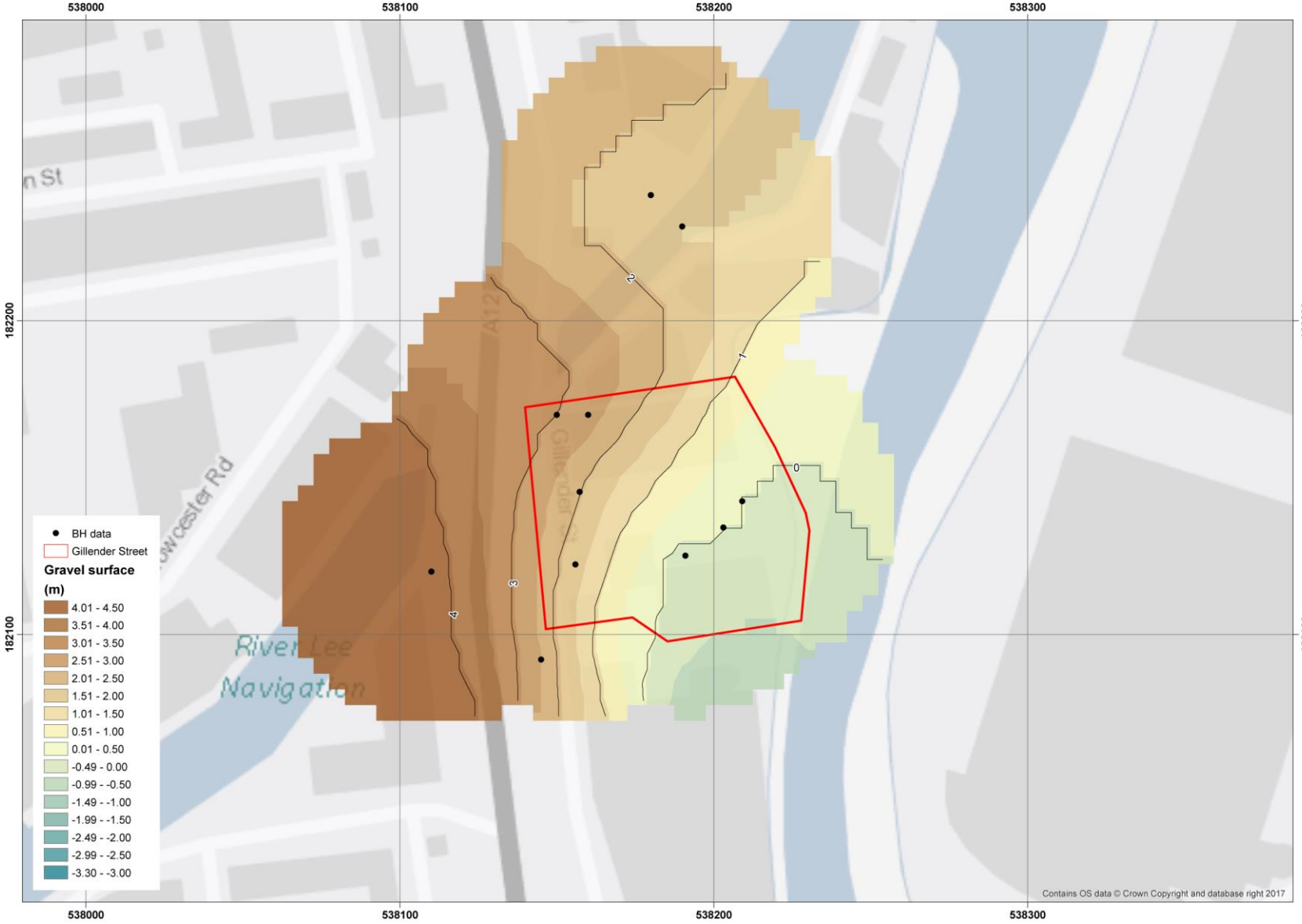

Figure 5: Surface of the Gravel (m OD) at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

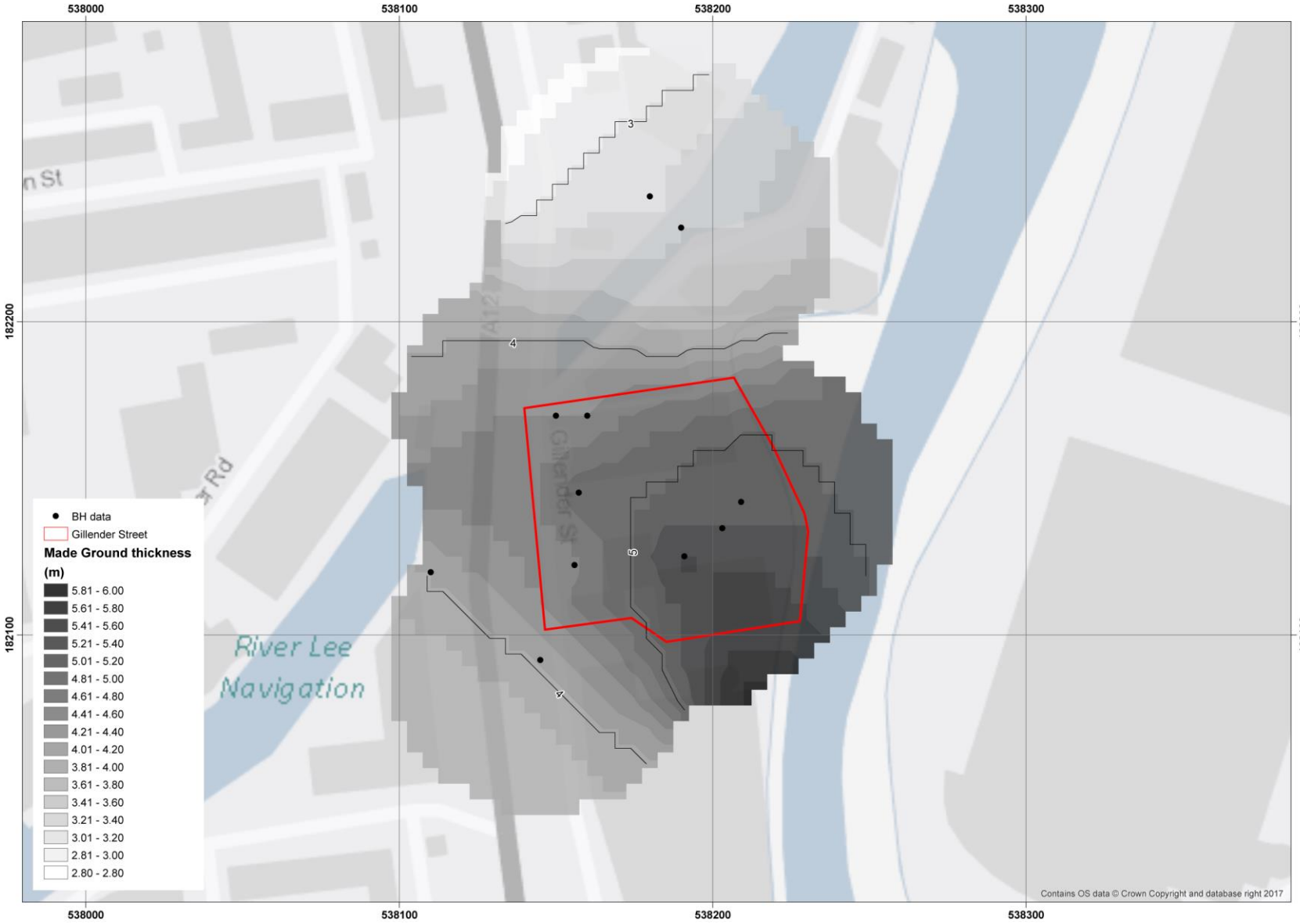

Figure 6: Thickness of the Made Ground (m) at Barratt Industrial Estate, Gillender Street, London Borough of Tower Hamlets.

5. CONCLUSIONS & RECOMMENDATIONS

The aim of the geoarchaeological investigations at the Barratt Industrial Estate site was to (1) clarify the nature of the sub-surface stratigraphy across the site, in particular the presence, depth, extent and likely date of any former land surfaces, alluvial and peat deposits; and (2) evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, a programme of geoarchaeological fieldwork and deposit modelling of the surface elevation and thickness of the major stratigraphic units at the site was carried out, incorporating logs from previous geotechnical boreholes and records from two new geotechnical boreholes observed by a geoarchaeologist.

The results of the geoarchaeological investigations have contributed to our understanding of the Holocene stratigraphic sequence in this area of the Lea Valley. Overlying the London Clay bedrock at the site is a sequence of Devensian Kempton Park Gravel, and variable thicknesses of Made Ground, which in places has truncated the sequence significantly. As described above, the site lies within Corcoran *et al.*'s (2011) Landscape Zone LZ1.6, characterised by a Gravel surface that lies at or above approximately 0m OD. These levels are consistent with the new records from the site, which indicate (where it is not artificially truncated) that the Gravel rises from east to west, from *ca.* 0.1 in the east to 3.46m OD in the west. Corcoran *et al.* (2011) describe the Gravel surface in zone LZ1.6 as overlain by sand deposits which 'probably accumulated within a tributary channel draining off the river terrace to the south and west' (p61). No distinct sand units were recorded overlying the Gravel at the present site, although it is possible that the Made Ground directly overlying the Gravel has disturbed or truncated this unit.

No alluvium was recorded in any of the geotechnical boreholes at the site, and in all cases the Gravel is directly overlain by Made Ground. The palaeoenvironmental potential of the sequences at the site is therefore considered to be negligible, and no further geoarchaeological or palaeoenvironmental investigations are recommended. With regards to its archaeological potential, the site occupies an area on the margins of the floodplain of the River Lea; such locations can provide an area of higher, drier ground and an attractive location for human activity. However, any archaeological potential is likely to be significantly limited by past development impacts at the site, since the modern Made Ground lies directly on the Gravel and is likely to have truncated the sequence in places. The Gravel within the area of the site is considered to represent the Devensian Kempton Park Gravel, and with regards to the site's Palaeolithic archaeological potential, no Palaeolithic artefacts appear to have been recorded anywhere from the Kempton Park Gravel (see Wymer, 1999, Map 9). The apparent absence of archaeological remains in this unit as a whole is consistent with the generally accepted absence from Britain of either Neanderthals or modern humans during the Ipswichian, and their sparse and discontinuous presence during the whole of the post-Ipswichian period into which the Kempton Park Gravel may fit stratigraphically.

6. REFERENCES

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7. APPENDIX

Figure A1: Draft geotechnical log for borehole BH102 (provided by Soiltechnics).

Proposed redevelopment
Gillender Street, London

soiltechnics
environmental and geotechnical consultants

WELL	STRATA DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	WATER STRIKES	CORING RUN NO.	CORE DEPTH (m)	TCR (%)	SCR (%)	RQD (%)	FRACTURE INDEX (%)	SPT TESTING TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	OTHER IN SITU TESTING TYPE / DEPTH (m)	RESULT	SAMPLING FROM (m)	TO (m)	TYPE
	Black BITUMINOUS BOUND MATERIAL. (MADE GROUND)	0.12	5.01																	
	Dense grey sandy GRAVEL. Gravel consists of concrete and flint. (MADE GROUND)	0.30	4.83																	
	Medium dense orange brown sandy very clayey GRAVEL. Gravel consists of brick, concrete and flint. Occasional whole brick. (MADE GROUND)																	1.00		D
																		1.50		D
																		3.00		D
	[Medium dense] orange brown sandy GRAVEL. Gravel consists of fine to coarse, angular to rounded flint. (KEMPTON PARK GRAVEL)	3.40	1.73																	
	Firm to stiff orange brown (grading to grey brown by 4.2m) slightly sandy silty CLAY. (LONDON CLAY FORMATION)	3.75	1.38									S 4.20-4.65	(5) 19	4.20				4.20	4.65	D
		4.80	0.33															4.20	4.80	D
	Firm dark brown silty CLAY. (LONDON CLAY FORMATION)																	5.20	5.60	C
						1	5.70 - 7.20	33	0	0										
	Firm to stiff dark brown slightly sandy silty CLAY. (LONDON CLAY FORMATION)	7.20	-2.07									S 7.20-7.65	(5) 13	7.20				7.20	7.65	D
						2	7.20 - 8.70	100	0	0								8.00		D
																		8.50		D
						3	8.70 - 10.20	93	0	0								9.20	9.70	C
	...at 10.6m depth, cobble of extremely weak grey claystone.																	10.50		D
						4	10.20 - 11.70	93	0	0								11.00	11.25	C
	CONTINUED ON NEXT SHEET												(6) 20	11.70				11.70	12.15	D

Key
D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Hand pit to 1.2m. Electric breaker used to remove surface hardstanding Core samples taken as sub-samples from rotary core liners. Window sampling used to 5.7m.

Groundwater observations
Water added to aid drilling. Unable to determine natural water levels. Water monitoring standpipes installed.

Title
Rotary core record

Method: Wireline Rotary
Logged by: ID
Date(s): 11/06/2018 - 15/06/2018
Level (m OD): -
Compiled by: AM
Sheet number: Sheet 1 of 4
Co-ordinates: -
Checked by:
BH102

Report ref: STN3786D-G01
Revision: 0

Figure A2: Draft geotechnical log for borehole BH103 (provided by Soiltechnics).

Proposed redevelopment
Gillender Street, London

soiltechnics
environmental and geotechnical consultants

WELL	STRATA DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	WATER STRIKES	CORING RUN NO.	CORING CORE DEPTH (m)	CORING TCR (%)	CORING SCR (%)	CORING RQD (%)	CORING FRACTURE INDEX (%)	SPT TESTING TYPE / DEPTH (m)	SPT TESTING RESULT	SPT TESTING CASING DEPTH (m)	SPT TESTING WATER LEVEL (m)	OTHER IN SITU TESTING TYPE / DEPTH (m)	OTHER IN SITU TESTING RESULT	SAMPLING FROM (m)	SAMPLING TO (m)	SAMPLING TYPE
	Light grey reinforced CONCRETE with aggregates of flint. 8mm diameter plain reinforcement bar at 0.23m depth. (MADE GROUND)	0.29	4.82																	
		0.40	4.71															0.70		D
	Medium dense dark grey gravelly SAND. Gravel consists of brick, flint and concrete. (MADE GROUND)	0.49	4.62															0.70		T
		1.40	3.71															1.10		D
	Light grey unreinforced CONCRETE. (MADE GROUND)																	1.10		D
	Medium dense dark brown slightly clayey sandy GRAVEL with many cobbles of brick. Gravel consists of brick, flint and concrete. Relic mass masonry observed in side of trial pit (suspected former wall). (MADE GROUND)																			
	...from 0.7m depth, becoming clayey																			
	MASS MASONRY - Drilled using open hole techniques. (MADE GROUND)																			
	Orange brown sandy GRAVEL. Gravel consists of fine to coarse angular to rounded flint. (KEMPTON PARK GRAVEL)	4.50	0.61															4.50	6.00	B
	Grey brown and orange brown GRAVEL. Gravel consists of fine to coarse angular to rounded flint. (KEMPTON PARK GRAVEL)	6.00	-0.89									S 6.00-6.45	(19) 43	6.00				6.00	6.45	D
		6.45	-1.34															6.45	7.00	D
	Orange brown, grey and dark grey SAND and GRAVEL. Gravel consists of fine to coarse angular to rounded flint. (KEMPTON PARK GRAVEL)	7.50	-2.39															6.50		B
	Orange brown sandy GRAVEL. Gravel consists of fine to coarse angular to rounded flint. (KEMPTON PARK GRAVEL)	8.00	-2.89															8.10	8.40	C
	Stiff dark grey silty CLAY. (LONDON CLAY FORMATION)	9.00	-3.89									S 9.00-9.45	(4) 16	9.00				9.00	9.45	D
	Stiff grey brown silty CLAY (LONDON CLAY FORMATION)					1	9.00 - 10.50	90	0	0								9.80		D
																		10.00	10.50	C
																		10.20		D
																		10.60		D
						2	10.50 - 12.00	100	0	0								11.20	11.45	C
	CONTINUED ON NEXT SHEET																			

Key
D Small Disturbed Sample
B Bulk Disturbed Sample
ES Environmental Sample
W Water Sample
C Core sample
UT Undisturbed Sample

S Standard Penetration Test
C Standard Penetration Test (solid cone)

PP Pocket Penetrometer test
SV Shear Vane test
PID Photo Ionisation Detector test

Notes
Hand pit to 1.2m. Breaker attachment on a 360 excavator used to remove surface hardstanding Core samples taken as sub-samples from rotary core liners. Window sampling used to 9.0m.

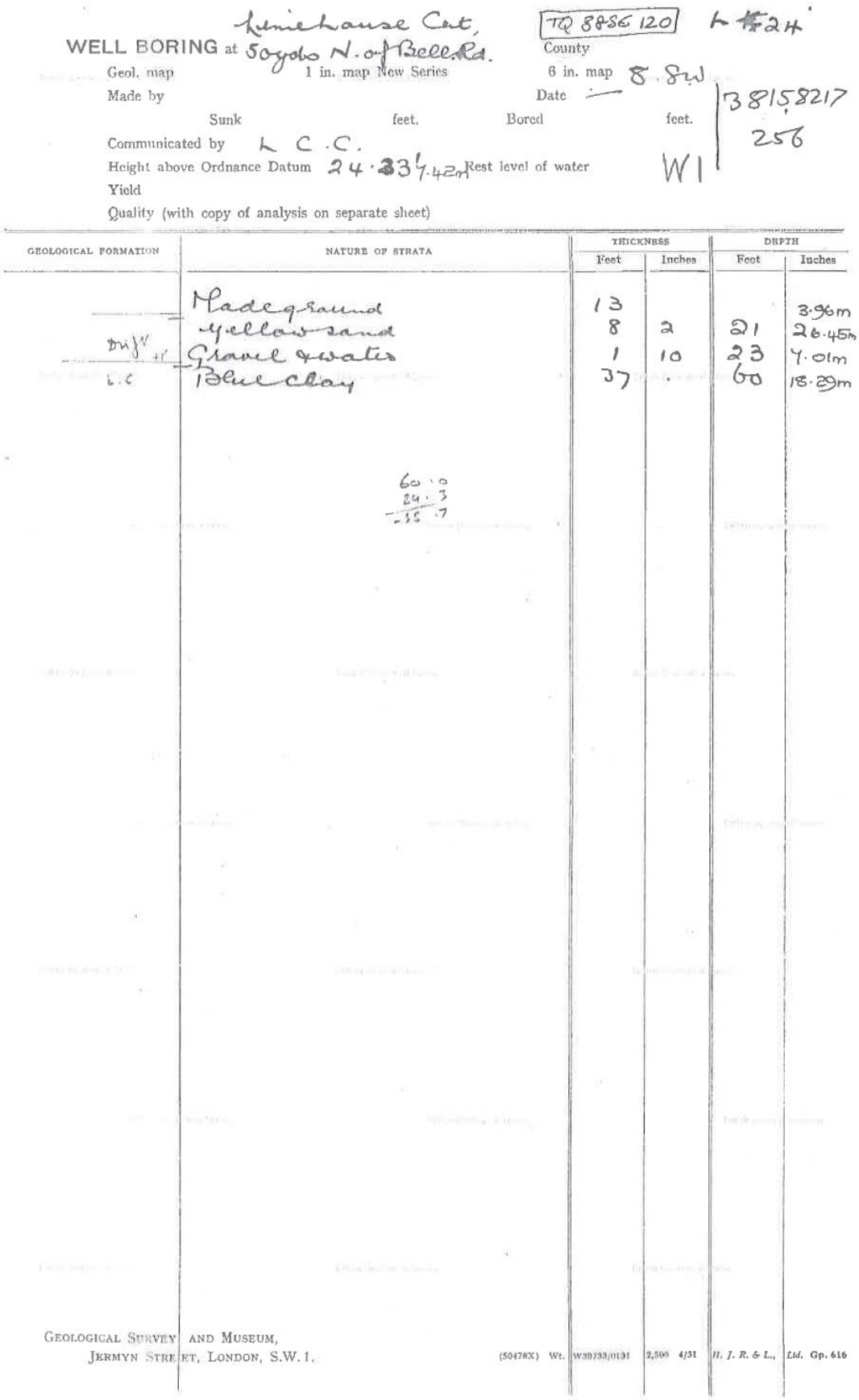
Groundwater observations
Water added to aid drilling. Unable to determine natural water levels. Water monitoring standpipes installed.

Title: Rotary core record

Method	Logged by	Date(s)
Wireline Rotary	GE	11/06/2018 - 15/06/2018
Level (m OD): -	Compiled by: AM	Sheet number: Sheet 1 of 5
Co-ordinates: -	Checked by	BH103

Report ref: STN3786D-G01 Revision: 0

Figure A3: BGS archive borehole scan for borehole TQ38SE120



WELL BORING at Limehouse Cut, Sogobo N. of Bell Rd.

TQ 8856 120 L #24

County

Geol. map 1 in. map New Series 6 in. map 8. SW

Made by Date —

Sunk feet. Bored feet.

Communicated by L C C.

Height above Ordnance Datum 24·33½ 7.42m Rest level of water W1

Yield

Quality (with copy of analysis on separate sheet)

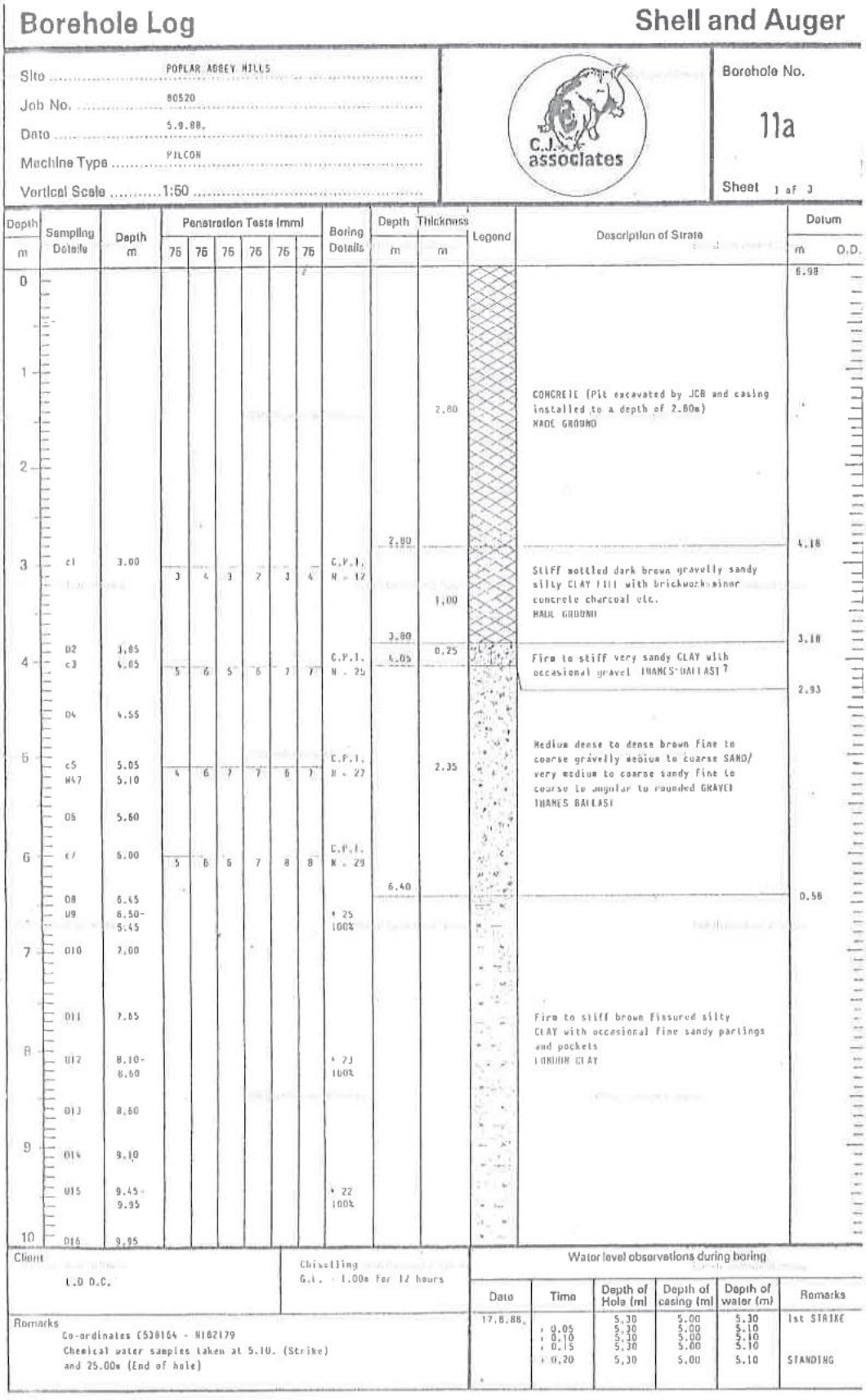
38158217 256

GEOLOGICAL FORMATION	NATURE OF STRATA	THICKNESS Feet	THICKNESS Inches	DEPTH Feet	DEPTH Inches
	Made ground	13			3.96m
Drift	Yellow sand	8	2	21	26.45m
	Gravel & water	1	10	23	7.01m
L.C	Blue clay	37		60	18.29m

60·0
24·3
35·7

GEOLOGICAL SURVEY AND MUSEUM, JERMYN STREET, LONDON, S.W.1. (50478X) Wt. W30733/0131 2,500 4/31 H. J. R. & L., Ltd. Gp. 616

Figure A4: BGS archive borehole scan for borehole TQ38SE2859



Borehole Log — Shell and Auger

Site: POPLAR ABBEY HILLS
Job No.: 80520
Date: 5.9.88.
Machine Type: FALCON
Vertical Scale: 1:50

C.J. associates

Borehole No. 11a
Sheet 1 of 3

Depth m	Sampling Details	Depth m	Penetration Tests (mm) 75	75	75	75	75	75	Boring Details	Depth m	Thickness m	Legend	Description of Strata	Datum m O.D.
0														6.98
1											2.80		CONCRETE (Pit excavated by JCB and casing installed to a depth of 2.80m) MADE GROUND	
2										2.80				
3	C1	3.00	3	4	3	2	3	4	C.P.I. N = 12		1.00		Stiff mottled dark brown gravelly sandy silty CLAY fill with brickwork, miner concrete charcoal etc. MADE GROUND	4.18
4	D2 C3	3.85 4.05	5	6	5	6	7	7	C.P.I. N = 25	3.80 4.05	0.25		Firm to stiff very sandy CLAY with occasional gravel THAMES BALLAST?	3.18
	D4	4.55												2.93
5	C5 W47	5.05 5.10	4	6	7	7	6	7	C.P.I. N = 27		2.35		Medium dense to dense brown fine to coarse gravelly medium to coarse SAND/ very medium to coarse sandy fine to coarse to angular to rounded GRAVEL THAMES BALLAST	
	D6	5.60												
6	C7	6.00	5	6	5	7	8	8	C.P.I. N = 29	6.40				0.58
	D8	6.45												
	U9	6.50-5.45							* 25 100%					
7	D10	7.00												
	D11	7.65											Firm to stiff brown fissured silty CLAY with occasional fine sandy partings and pockets LONDON CLAY	
8	U12	8.10-8.60							* 23 100%					
	D13	8.60												
9	D14	9.10												
	U15	9.45-9.95							* 22 100%					
10	D16	9.95												

Client: L.B.D.C.

Chiselling: G.L. - 1.00m for 12 hours

Water level observations during boring

Date	Time	Depth of Hole (m)	Depth of casing (m)	Depth of water (m)	Remarks
17.8.88.	+ 0.05	5.30	5.00	5.30	1st STRIKE
	+ 0.10	5.30	5.00	5.10	
	+ 0.15	5.30	5.00	5.10	
	+ 0.20	5.30	5.00	5.10	STANDING

Remarks
Co-ordinates E538164 - N182179
Chemical water samples taken at 5.10. (Strike) and 25.00m (End of hole)

8. OASIS FORM

OASIS ID: quaterna1-321163

Project details

Project name	Barratt Industrial Estate, Gillender Street
Short description of the project	The aim of the geoarchaeological investigations at the Barratt Industrial Estate site was to (1) clarify the nature of the sub-surface stratigraphy across the site, in particular the presence, depth, extent and likely date of any former land surfaces, alluvial and peat deposits; and (2) evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, a programme of geoarchaeological fieldwork and deposit modelling of the surface elevation and thickness of the major stratigraphic units at the site was carried out, incorporating logs from previous geotechnical boreholes and records from two new geotechnical boreholes observed by a geoarchaeologist. Overlying the London Clay bedrock at the site is a sequence of Devensian Kempton Park Gravel, and variable thicknesses of Made Ground, which in places has truncated the sequence significantly. No alluvium was recorded in any of the geotechnical boreholes at the site, and in all cases the Gravel is directly overlain by Made Ground. The palaeoenvironmental potential of the sequences at the site is therefore considered to be negligible. With regards to its archaeological potential, the site occupies an area on the margins of the floodplain of the River Lea, and it would most likely have represented an area of higher, drier ground that might have been an attractive location for human activity. However, any archaeological potential may be significantly limited by past development impacts at the site, since the modern Made Ground lies directly on the Gravel and is likely to have truncated the sequence in places. The Gravel within the area of the site is considered to represent the Devensian Kempton Park Gravel, and with regards to the site's Palaeolithic archaeological potential, no Palaeolithic artefacts appear to have been recorded anywhere from the Kempton Park Gravel (see Wymer, 1999, Map 9).
Project dates	Start: 01-03-2018 End: 29-06-2018
Previous/future work	No / Not known
Any associated project reference	GLL18 - Sitecode

codes	
Type of project	Environmental assessment
Survey techniques	Landscape

Project location

Country	England
Site location	GREATER LONDON NEWHAM CANNING TOWN Barratt Industrial Estate, Gillender Street
Postcode	E14 6RN
Site coordinates	TQ 3819 8215 51.52083994737 -0.00796367339 51 31 15 N 000 00 28 W Point

Project creators

Name of Organisation	Quaternary Scientific (QUEST)
Project brief originator	CgMs Consulting
Project design originator	D.S. Young
Project director/manager	D.S. Young
Project supervisor	D.S. Young
Type of sponsor/funding body	Developer

Project archives

Physical Archive Exists?	No
Digital Archive Exists?	No
Paper Archive recipient	LAARC
Paper Contents	"Environmental","Stratigraphic"
Paper Media	"Report"

available	
Entered by	Daniel Young (d.s.young@reading.ac.uk)
Entered on	29 June 2018