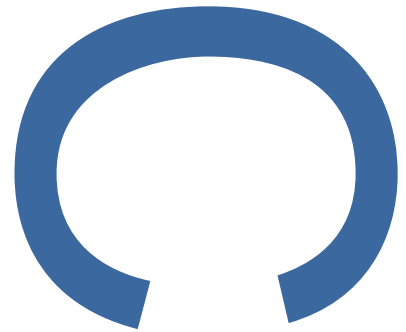


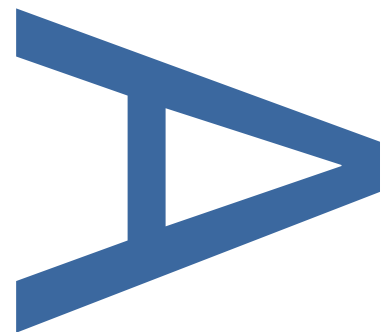
**SITE AT MIDDLESEX STREET,
WHITECHAPEL HIGH STREET AND
GOULSTON STREET,
LONDON, E1 7QA**



**AN ARCHAEOLOGICAL WATCHING
BRIEF ON GEOTECHNICAL SITE
INVESTIGATION**



SITE CODE: MWG18



OCTOBER 2018

PRE-CONSTRUCT ARCHAEOLOGY


DOCUMENT VERIFICATION

**SITE AT MIDDLESEX STREET, WHITECHAPEL HIGH STREET AND
GOULSTON STREET, LONDON, E1 7QA**

Type of project

ARCHAEOLOGICAL WATCHING BRIEF ON GEOTECHNICAL SITE INVESTIGATION

Quality Control

Pre-Construct Archaeology Limited Project Code			K5392
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Revision No.	Date	Checked	Approved
6	04/10/2018	ZP	PM

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**SITE AT MIDDLESEX STREET, WHITECHAPEL HIGH STREET AND GOULSTON
STREET, LONDON, E1 7QA**

**AN ARCHAEOLOGICAL WATCHING BRIEF ON GEOTECHNICAL
SITE INVESTIGATION**

SITE CODE: MWG18

NATIONAL GRID REFERENCE: TQ 533705 181351

LOCAL PLANNING AUTHORITY: LONDON BOROUGH OF TOWER HAMLETS

PLANNING APPLICATION NUMBER: N/A

COMMISSIONING CLIENT: CARD GEOTECHNICS LTD

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OCTOBER 2018

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CONTENTS

1	ABSTRACT.....	3
2	INTRODUCTION	4
3	PLANNING BACKGROUND	6
4	GEOLOGY AND TOPOGRAPHY	9
5	SITE DESCRIPTION	9
6	ARCHAEOLOGICAL AND HISTORICAL BACKGROUND.....	10
7	METHODOLOGY.....	11
8	THE ARCHAEOLOGICAL SEQUENCE.....	12
9	INTERPRETATIONS AND CONCLUSIONS.....	19
10	ACKNOWLEDGEMENTS	21
11	BIBLIOGRAPHY	22
	APPENDIX 1: CONTEXT INDEX	23
	APPENDIX 2: STARTIGRAPHIC MATRIX	38
	APPENDIX 3: SPECIALIST REPORTS.....	39
	APPENDIX 4: OASIS FORM.....	59

ILLUSTRATIONS

	FIGURE 1: SITE LOCATION.....	23
	FIGURE 2: DETAILED SITE LOCATION	24
	FIGURE 3: TEST PITS PLAN.....	25
	FIGURE 4: WASTE SEGREGATION TEST PITS PLAN	26
	FIGURE 5: SECTIONS.....	27
	FIGURE 6: WINDOW SAMPLE SECTIONS.....	28
	PLATES	29

1 ABSTRACT

- 1.1 This report details the results and working methods of an archaeological watching brief that took place on the site at Middlesex Street, Whitechapel High Street and Goulston Street, London, E1 7QA (TQ 533705 181351).
- 1.2 The watching brief comprised 10 geotechnical test pits (TP 5 – 14) across the southern area of site, 3 boreholes (BH 1-3), additional test pit (BH1TP) and 12 waste segregation pits (WSTP 1-13). This report also incorporates the results of earlier geotechnical investigation monitored by PCA (Cavanagh 2018) when six boreholes with window samples were executed. The aim of the project was to record and assess any archaeological remains observed within the works.
- 1.3 Natural brickearth was encountered between 11.00-10.05m OD across the site. This variation was likely due to the presence of quarry pits. In the southernmost portion of the area of investigation those layers had been truncated away by the construction of original Aldgate East tube station and natural sand and gravels were encountered between 7.29 - 7.13m OD.
- 1.4 Evidence of Roman activity survived in TP11 in the form of a small pit cut into the brickearth.
- 1.5 Evidence of medieval activity was encountered in WSTP 8, WSTP 9 and WSTP 10 and it was most likely representative of quarrying, as it was observed during the earlier site evaluation (source: MOLA 2012). Within one of these deposits, a human bone fragment (femur) along with residual Roman pottery was encountered, potentially indicating that these quarry pits may have disturbed the earlier Roman graves.
- 1.6 Evidence of post-medieval activity was encountered in TP 10 and six WSTPs (1, 2, 3, 6, 9 and 10). With an exception of WSTP 9, the remains had a form of masonry remains dating between 1450 and 1700. Deposits containing post-medieval artefacts were also present in the test pits indicating 17th century occupation. Although some of the masonry remains and pottery may have been of an earlier date, the majority of the remains point to mid to late 17th century as the period of an extensive development on the site. The masonry structures and deposits bore significant damage by later early modern and modern intrusions.
- 1.7 Assemblage of the 18th century clay pipe fragments and associated remains suggest the site was a location of clay pipe manufacturing.
- 1.8 The 19th century remains, primarily in the form of demolition rubble, backfilled basements and made ground, were present in TP 10, WSTP 1, 2, 3, 4, 6, 7, 8 and 12 and were present, in general, in the northern and central parts of the site. The southern, lower part of the site appears to have been heavily affected by the construction of the Aldgate East tube station.
- 1.9 There were significant horizons of modern activity, mostly in the form of demolition rubble and backfilled basements, present throughout the site. The backfill and post-war rubble consisted of loose deposits, adversely affecting the investigation.
- 1.10 Several layers observed could not be dated due to a lack of suitable artefacts.

2 INTRODUCTION

- 2.1 This report presents the findings of an archaeological monitoring Pre-Construct Archaeology Limited (PCA) has undertaken on geotechnical site investigation at the site bounded by Middlesex Street, Whitechapel High Street and Goulston Street, London E1 7QA (Figure 1). The site is centred at National Grid Reference TQ 34782 89475.
- 2.2 The fieldwork work was undertaken by Pre-Construct Archaeology in 2018 between 21st June and 9th July and between August 6th and August 22nd. 10 geotechnical test pits across the central/southern area of site, 3 boreholes and 13 waste segregation pits in the northern part of the site were excavated (Figure 2). Earlier works have also taken place between 5th and 8th March and comprised 6 boreholes with window samples in the central and southern parts of the site.,
- 2.3 The project was managed by Zbigniew Pozorski (PCA) and was commissioned by Card Geotechnics Limited (CGL). The archaeological work was supervised by Pat Cavanagh and Karen Deighton in March 2018 and Ellen Green and Neil Hawkins. The work was commissioned by Card Geotechnics Limited (CGL) and overseen by Adam Single of the Historic England Greater London Archaeological Advisory Service (GLAAS).
- 2.4 The work was preceded by detailed assessment of the archaeological background of the site, produced in the form of the Historic Environment Assessment (MOLA 2012) and Archaeological Desk-Based Assessment (CgMs 2018).
- 2.5 Previous archaeological works have taken place on the site. MOLA conducted an evaluation in 1999 (source: MOLA 2012) in the southern area of the site consisting of three trenches. Another evaluation and monitoring have taken place to the immediate north of the current site in 2016, then within the one, larger site. A series of geotechnical window samples was monitored by PCA earlier in 2018 (Cavanagh 2018). Results of the latter exercise are now incorporated into this report.
- 2.6 The site lies within an archaeological priority area (APA) as defined by Tower Hamlets Council. That part of the APA in which the site lies is characterised as part of the core area of the early settlement of Whitechapel, additionally with potential for Roman cemeteries. Remains of the original Aldgate East tube station are also present in the southern end of the site.
- 2.7 As outlined in the Written Scheme of Investigations (Pozorski 2018), the primary objectives of the exercise were to preserve by record the extent and significance of any surviving archaeological features and deposits within the site and to answer the following research questions:
- Is there evidence of Roman stratigraphy and burials?
 - Is there evidence of medieval quarrying and metalworking?
 - What evidence is present for the 16th century playhouse or associated features?

- What is the extent of the 19th century basement truncation?
- What is the extent of modern truncation recorded on site during previous monitoring and can any of the modern deposits present be associated with WWII damage?

2.8 The site archive was identified using the unique site code MWG18, issued by the Museum of London. The completed archive comprising written, drawn and photographic records will, upon completion of the project, be deposited with the Museum of London's London Archaeological Archive and Research Centre (LAARC), under that code.

2.9 All works were undertaken in accordance with the following documents:

- The Written Scheme of Investigation for this project (Pozorski 2018)
- Historic England Greater London Archaeology Advisory Service: *Standards for Archaeological Work* (HE GLAAS 2015)
- '*Standard and guidance for an archaeological watching brief*' (Chartered Institute for Archaeologists ClfA 2014).
- Management of Research Projects in the Historic Environment (MoRPHE) Historic England 2016)

3 PLANNING BACKGROUND

3.1 National Guidance: National Planning Policy Framework

- 3.1.1 The National Planning Policy Framework (NPPF) was adopted in 2012 and updated in 2018. The NPPF constitutes guidance for local planning authorities and decision-takers both in drawing up plans and as a material consideration in determining applications. Chapter 16 of the NPPF 2018 concerns the conservation and enhancement of the historic environment.
- 3.1.2 In considering any proposal for development, including allocations in emerging development plans, the local planning authority will be mindful of the policy framework set by government guidance, existing development plan policy and of other material considerations.

3.2 Regional Policy: The London Plan

- 3.2.1 Additional relevant planning strategy framework is provided by The London Plan, first published July 2011, updated March 2016, includes the following policy regarding the historic environment in central London, which should be implemented through the Local Development Framework (LDF) being compiled at the Borough level:

Historic environments and landscapes

POLICY 7.8 HERITAGE ASSETS AND ARCHAEOLOGY

Strategic

- A London's heritage assets and historical environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and utilising their positive role in place shaping can be taken into account.
- B Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.

Planning decision

- C Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.
- D Development affecting heritage assets and their setting should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
- E New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological assets or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that assets.

LDF preparation

- F Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.
- G Boroughs, in consultation with English Heritage, Natural England and other relevant statutory organizations, should include appropriate policies in their LDFs for identifying, protecting, enhancing and improving access to the historic environment and heritage assets and their setting where appropriate, and to archaeological assets, memorials and historic and natural landscape character within their area.

3.3 Local Policy: Archaeology in the London Borough of Tower Hamlets

- 3.3.1 The Tower Hamlets Core Strategy, which sets out the overall strategy for development in the Borough until 2026, was adopted in September 2010. It contains the following general policies which relate to the protection of heritage assets and the enhancement of the historic environment:

POLICY SP10

2. Protect and enhance the following heritage assets and their settings:

- World heritage sites
- Statutory listed buildings
- Conservation areas
- London squares
- Historic parks and gardens
- Scheduled ancient monuments
- Archaeological remains
- Archaeological priority areas
- Locally listed buildings
- Local landmarks
- Other buildings and areas that are identified through the conservation area management plans

3. Preserve or enhance the wider built heritage and historic environment of the borough, enabling the creation of locally distinctive neighbourhoods, through:

- A. Promoting and implementing placemaking across the borough to ensure that the locally distinctive character and context of each place is acknowledged and enhanced.

- B. Protecting, conserving, and promoting the beneficial reuse of, old buildings that provide suitable locations for employment uses, including small and medium enterprises.
- C. Encouraging and supporting development that preserves and enhances the heritage value of the immediate and surrounding environment and the wider setting.
- D. Working to reduce heritage at risk.

3.4 Site Specific Planning Constraints and Background

- 3.4.1 Planning permission is sought for the demolition of existing substation and construction of a part 8/16/20/24 storey building with basement, including 988 bedrooms of purpose-built student accommodation (sui generis); 573sqm of incubator floorspace and 2,919sqm of office floorspace (Use Class B1) at basement, ground, first, second and third floor levels; 228sqm of retail floorspace (Use Class A1) at ground floor level; together with cycle parking; landscaping and public realm improvements. This report may support the application and decision-making process undertaken by LB Tower Hamlets Council and Historic England. It is expected that a planning condition is likely to accompany the planning decision requesting further archaeological mitigation works.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

- 4.1.1 The British Geological Survey (BGS) records that the site is located upon sedimentary bedrock formed of the London Clay Formation, which comprises of clay and silt, formed approximately 48 to 56 million years ago in the Palaeogene Period when the local environment previously dominated by deep seas. Above this are Pleistocene fluvial deposits of the River Thames comprising gravel terraces. The site is located on the ridge of the terrace.
- 4.1.2 Previous investigations in the area of site found natural brickearth at a height of 10.70-11.50m OD and natural gravels at 10.40m OD (MOLA 2012). Modern made ground was present to the depths between 2.7m and 5.7m below existing ground level.

4.2 Topography

- 4.2.1 The site comprises a rectangular plot of land bounded by Middlesex Street to the west, Goulston Street to the east, and Whitechapel High Street to the south (Figures 1-2). The site lies on a land gradually sloping south towards the northern bank of the River Thames which is present c. 900m to the south. The site is located, in general, between 14.20m OD and 15.20m OD but the southern end of the site is lowered to c. 8.10m OD.

5 SITE DESCRIPTION

- 5.1 The application site measures approximately 0.23ha and is located on the eastern side of Middlesex Street, at the Aldgate gyratory, equidistant between Aldgate and Aldgate East London Underground stations (Figure 1). It is bound by Middlesex Street to the west, Whitechapel High Street to the south and Goulston Street to the east and consists plots at 4-6 & 16-22 Middlesex Street and 3-11 Goulston Street. The site is now largely vacant having been cleared as part of the new hotel development currently being constructed on land to the north. There is however a substation located on the north east corner of the site that will be incorporated into the proposed development.
- 5.2 The site is located within 200m of both Aldgate and Aldgate East London Underground Stations which are collectively served by the District, Circle, Metropolitan and Hammersmith & City Lines. Liverpool Street Station is located approximately 800m west of the site, providing access to National Rail, London Overground and London Underground services. It will also be served by the planned Elizabeth Line services in the future. Bus services are available from St Botolph Street and Aldgate High Street. The site has a Public Transport Accessibility Level (PTAL) of 6b (best). The surrounding land uses are a mix of commercial, residential and office accommodation with neighbouring buildings varying in height including Aldgate Tower at 26 storeys and 1 Commercial Street at 22 storeys both located approximately 70m to the east of the site.

6 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 6.1 The following archaeological and historical background is summarised from the Historic Environment Assessment (MOLA 2012) and Archaeological Desk-Based Assessment (CgMs 2018).
- 6.2 No prehistoric finds have been recorded within the vicinity of the site. Previous investigations have not revealed evidence to suggest prehistoric occupation of the area and understanding of the site in this period is limited. Any prehistoric remains may have been removed by later Roman burial activity and medieval or later quarrying.
- 6.3 Residual Roman pottery was recovered during an evaluation of the southern part of the site in 1999, which suggests activity within the site or its immediate vicinity. The site is located immediately to the north of a known Roman road (on the line of Whitechapel High Street) and road surfaces were found in several locations beneath existing street. To the south of the site the Roman road remains were located c. 3m below existing ground level.
- 6.4 A Roman cemetery was located along the road, although its north extent is not clear. No Roman burials were discovered during the evaluation on the site; the site may have been part of a roadside settlement in this period, although later quarrying may have removed Roman remains. Several burials and finds relating to funerary activity have also been recovered by chance in the vicinity of the site.
- 6.5 The site lay some distance from the main settlements in the early medieval period. There is no evidence for Saxon activity within the site and very little in the vicinity. The site probably lay in open fields or marshland in this period.
- 6.6 Medieval pits and quarry pits were discovered in the southern part of the site during an archaeological evaluation and there is high potential for evidence of further medieval quarrying across the site, although these may have been severely truncated and possibly entirely removed by 19th century or later basements in localised areas of the site. Numerous investigations within the study area have recorded medieval quarrying activity, as well as evidence of later medieval metal-working.
- 6.7 The southern part of the site is a known location of the Boar's Head public house, built in 1530s, and its playhouse built within the courtyard to the rear of the public house. The playhouse functioned in the last years of the 16th and early 17th century (c. 1598 – 1616). The theatre, unlike other better known playhouses, was not a free standing building but rather a set of galleries created by extensions and alterations to surrounding buildings with a centrally located square playing area. The stage of the playhouse was demolished around 1618.
- 6.8 The remains of late 19th century in-filled basements were discovered in all three of the trenches as part of the previous evaluation on the site. The remains of earlier probable 17th century cellars, walls and foundations, which may be related to structures making up part of the former Boar's Head Inn, were also discovered.

- 6.9 Aldgate East tube station was built immediately to the south and beneath the southern part of the site in 1884. Its remains still occupy the southern end of the site. The station was moved east in 1938.
- 6.10 The site was directly hit during WWII bombing and most of existing structures were destroyed or damaged beyond repair. The site remained unoccupied until the early 1960s when three single-storey shops were built fronting Whitechapel High Street (Nos 138-141) in the southern end of the site and a large partly eight-storey office building (United Standards House) was constructed in the northern/central part of the site. The southern part of this office building was demolished in the early 1990s, as were the shops and the main part of the United Standards House was removed recently.

7 METHODOLOGY

- 7.1 All The methodology of the archaeological work applied for the project was fully compatible with that widely used elsewhere in the LB Tower Hamlets and in London and conformed to relevant guidelines and practices (see Paragraph 2.9). All recording systems conformed to those developed out of the Department of Urban Archaeology Site Manual, now presented in PCAs Operations Manual 1 (Taylor & Brown 2009, updated 2018).
- 7.2 All groundworks were carried out by CGL Ltd using their equipment under PCA's archaeological supervision. For the southern test pits the concrete was broken out by hand using both power tools and a breaking bar, and the trial pits were hand excavated down to a depth of approximately 1.20m below ground level (BGL). In the northern portion of the site the concrete was broken out using a mechanical breaker on a 22-ton 360 machine. The waste segregation trial pits were then excavated to a depth of approximately 5m BGL, in 100mm spits using a flat bladed ditching bucket. The boreholes for window samples (WS) were excavated to a depth between 1.20 and 5m whilst the remaining boreholes (BH) reached the depth of 35m below ground level. The boreholes, except for BH 3, were placed in the bases of waste segregation trial pits in order to avoid obstructions.
- 7.3 Five of the waste segregation test pits (WSTP) were either abandoned or reduced in size before reaching full depth. Three were abandoned early during the excavation due to safety concerns (WSTP 5, WSTP 7, WSTP 11) after section collapse undermined the concrete slab (Plate 4). The excavation of WSTP 1 was cut short when the wall potentially dated to 1450 – 1700 was discovered (Plate 1; see Section 8.4.5). In order to preserve the wall, the test pit was abandoned and immediately backfilled. The excavation of WSTP 13 was also stopped early (3m BGL) when existing foundations prevented further extensions of the trench.
- 7.4 During the insertion of the boreholes the attending archaeologist monitored excavation through all deposits to the level of the geological sub-strata. Due to the extreme depth of the waste segregation trial pits, all archaeology was observed and recorded from the top of the pits. All

archaeological features were hand-paned along with pit/trench sections at a scale of 1:20 in most cases and 1:10 where practical. The deposits they contained were recorded on pro forma context sheets and a full digital photographic record was compiled. Finds were collected according to standard retrieval methods as outlined in the WSI (Pozorski 2018).

- 7.5 Levels on archaeologically relevant strata were recorded using a topographic survey of the site. These showed the OD height of the site to be between 15.4m OD in the northern portion of the site to 11.25m OD in the southern most portion of the site within the old station box.
- 7.6 The completed site archive, comprising written and photographic records, will be deposited at the Museum of London's Archaeological Archive and Resource Centre (LAARC) under the site code MWG18.

8 THE ARCHAEOLOGICAL SEQUENCE

8.1 Phase 1: Natural

- 8.1.1 Natural brickearth was encountered in seven of the monitored works, at heights ranging between 9.04-11.00m OD. This is consistent with the previous work on the site, which encountered brickearth at heights of 10.70 - 11.50m OD in the earlier evaluation trenches (source: MOLA 2012).

Trench	Context	Hight of Natural (m BGL)	Hight of Natural (m OD)
TP 12	[59], [63]	0.55	11.00
WSTP 3	[80]	5.20	10.05
WSTP 4	[114]	4.20	10.99
WSTP 6	[91]	5.00	10.30
WSTP 8	[73]	4.70	10.46
BH1TP	[69]	4.40	10.65
BH 3	[131]	6.00	9.04

- 8.1.2 In the southernmost portion of the area of excavation (**TP 7, 8 and 9**), the tube station had truncated away the brickearth, and natural gravels and sands [64], [65], [66] and [67] were encountered between 7.13 - 7.29m OD directly below the modern disturbance.

8.2 Phase 2: Roman (43 AD- 410 AD)

- 8.2.1 A Roman feature was observed within **TP 11** in the south-eastern area of investigation (Figure 5). Pit [62] was cut into the natural brickearth [63] at 10.71m OD. The pit measured 1.10m north-south and 0.80m east-west, and its fill [61] contained fragments of Roman pottery dating, in general, to 50-400 AD.
- 8.2.2 Residual Roman pottery was observed in a number of later contexts, indicating further Roman activity in the vicinity of site.

8.3 Phase 3: Medieval (1066-1539)

- 8.3.1 Medieval material was encountered in three trenches in the northern portion of the site; WSTP 8, WSTP 9, WSTP 10.
- 8.3.2 In **WSTP 8**, a 0.20m thick layer of mottled grey and orange clay [72] overlay the natural brickearth [73]. This layer was located at 10.66m OD and contained pottery dated to 1270-1500.
- 8.3.3 In **WSTP 9**, three layers of medieval material were encountered. Layer [128] was composed of reddish brown gravelly clay and contained frequent charcoal inclusions as well as fragments of Roman pottery. It stretched over the entire trench was located 9.75m OD. A single fragment of a peg tile was recovered from this layer dating to 1180-1800 as well as a fragment of a copper alloy object, possibly of Roman date.
- 8.3.4 Above layer [128] was a 0.30m thick layer of silty clay mottled with large amounts of decayed organic matter [127]. A single sherd of Roman pottery was recovered from this layer, along with a fragment of human long bone (femur) and two fragments of medieval peg tile spot dated to 1180-1450. A fragment of a leather shoe or sandal was also recovered from the deposit. The layer was present at 10.05m OD.
- 8.3.5 A 1m thick layer of dark greenish grey material [126] overlaid layer [127]. This layer was observed at 11.05m OD and contained frequent charcoal flecks as well as pottery dated to 1270-1340.
- 8.3.6 In **WSTP 10**, a thick layer of greenish grey clay, containing frequent small pebbles as well as occasional shells and pottery sherds, was observed at 11.85m OD. This layer was not fully excavated, and the pottery dated to 1270-1500. A single clay pipe stem was also found in this layer; however, it is considered to be intrusive. It is likely that this layer, given its depth, is representative of a medieval quarrying of which the evidence was found during the 1999 evaluation.

8.4 Phase 4: Post-medieval (1486-1799)

- 8.4.1 Material dated to the post medieval period was observed in; TP 10, WSTP 1, WSTP 2, WSTP 3, WSTP 6, WSTP 9 and WSTP 10.
- 8.4.2 In **TP 10** a chalk wall [52] was encountered at 11.29m OD. The wall measured 0.45m wide and ran north/south across the test pit. It was truncated to the south by the station.

- 8.4.3 Also, in TP 10, a layer of greyish brown made ground with frequent demolition rubble [54] was observed. This layer was not fully excavated and measured 0.40m by 0.30m. The highest instance of this layer was located at 10.61m OD.
- 8.4.4 Layer [54] was overlain by a brick wall [53]. The wall was made up of unfrosted red bricks bonded together with soft light brown mortar. The bricks were laid as stretchers and the highest instance of the wall was located at 10.79m OD.
- 8.4.5 In **WSTP 1**, a brick wall [116] running north/south was observed in the section of the trench, the highest point of which was located at 14.00m OD (Plate 1). The bricks constructing the wall were handmade, with an orangish red fabric, and were very thin. Due to the depth of the feature, a closer study of the wall could not be made, however the wall may have been based upon the bricks. Based on the observation it is believed the wall may have been of the 16th – 17th century origin.
- 8.4.6 Banked up against wall [116] was a later brick wall [115]. This wall was constructed of a mixture of red and brown unfrosted bricks of variable sizes (230-240mm x 95-110mm x 60-70mm) bonded with a soft sandy grey mortar with patches of a sandy brown mortar. The bricks were laid in Flemish bond, alternating headers and stretchers, and the wall measured 1m by 1.90m. The wall was not fully excavated and was located at 14m OD. The bricks from this feature were spot dated to 1780-1900 and it is likely that wall [115] represents later (late 18th – 19th century) modifications to the structure defined by wall [116].
- 8.4.7 In **WSTP 2** a large pit [108] was observed cutting into the natural brickearth [106]. This pit, only one edge of which was visible in the trench, was characterised by straight, vertical sides and was not bottomed (Plate 2). The portions of the pit visible measured 4.10m north-south and 0.62m east-west, however the pit continued outside the area of excavation to the north, south and west. It was located at 11.79m OD and fragments of pottery spot dated to 1630- 1846 were recovered from the fill [107] along with an ivory needle case (Plate 11; see specialist report).
- 8.4.8 Overlaying pit [108] was a thick layer silty dark clay [105], very similar to fill [107]. The layer was 0.71m thick and stretched over the entire trench. Layer [105] contained a single residual sherd of pottery spot dated to 1350-1500 and CBM broadly spot dated to 1180-1800.
- 8.4.9 A 0.20m thick layer of mortar and gravel [104] overlaid clay layer [105]. This surface layer ran the entire length of the trench and contained frequent CBM fragments broadly spot dated to 1480-1900. The surface was located at 12.70m OD and likely represents a floor.
- 8.4.10 Overlaying floor [104] was a layer of made ground [103], 0.60m thick. The layer contained occasional flecks of CBM however no finds were recovered. The top of the made ground was located at 13.30m OD.
- 8.4.11 Two wooden beams [102], [109] were observed in section above layer [103]. The beams were roughly square in cross section measuring 0.20m by 0.16m. One beam ran north/south [109] and one east/west [102]. The wood was very degraded, and the beams were located at between 13.30m OD and 13.75m OD.
-

- 8.4.12 A long brick wall [100], running north/south, was also present on the western edge of the trench (Plate 2). The bricks were laid in stretchers and were bonded with grey sandy mortar. The bricks were spot dated to 1500-1700.
- 8.4.13 In **WSTP 3** a thick layer of dark clay [79] overlay the natural brickearth [80]. The layer was archaeologically sterile and ran the entirety of the trench and was 1.30m thick. The layer was located at 11.35m OD.
- 8.4.14 Cut into this layer, there were two brick and mortar foundations [76], [77] (Plate 3). Foundation [76] was located in the south western portion of the trench and was constructed of brick fragments bonded with a large amount hard grey mortar with frequent white flecks. The foundation measured 1.90m north-south and 1.20m east-west and was 1.40m high. The highest point was located at 12.75m OD.
- 8.4.15 Foundation [77] was located in the north-eastern corner of the trench and measured 1.70m north-south, 0.70m east-west and 1.40m high. The foundation was constructed of hard brownish yellow mortar with occasional brick fragments. The building material was spot dated to 1450-1700 and the foundation was located at 12.75m OD.
- 8.4.16 Sitting above foundations [76] and [77] was a large brick wall [78]. Due to the depth of the trench it was impossible to discern if this wall was cut into the foundation or laid on top of. The wall was not fully excavated and was only visible in section. It measured at least 1.40m north-south and 0.80m high and was located at 13.25m OD.
- 8.4.17 In **WSTP 6** the natural brickearth [91] was overlain by a 0.40m thick layer of mottled clay [90]. This layer contained pottery spot dated to 1580-1900 and was located at 10.70m OD. It is likely that this layer represents an undisturbed early post medieval horizon.
- 8.4.18 Overlaying layer [90] was a layer of made ground [88] and it was 1.16m thick. This layer contained frequent demolition rubble and was located at 11.90m OD.
- 8.4.19 Cut into layer [88] was a wall [83] constructed of red unfrogged bricks bonded with a soft sandy grey mortar. The wall measured 0.72m in width, 2.5m in length and was 0.90m high. The bricks were spot dated to 1450-1700. The wall at its highest instance was located at 12.20m OD.
- 8.4.20 Wall [83] was truncated by two later structures. To the west, the wall is truncated by chalk wall [99]. It was L-shaped and located in the northwest corner of the trench. The wall measured 2.00m east-west and 0.84m north. The wall was constructed of chalk boulders and was located at 12.20m OD in its highest instance.
- 8.4.21 To the west, wall [83] was truncated by brick wall [82]. Wall [82] was constructed of unfrogged red bricks bonded with a soft sandy yellow brown mortar and measured 2.50m north-south, 0.50m east-west and 0.50m high. The bricks were spot dated to 1450-1700 and the wall was located at 12.70m OD in its highest instance.
- 8.4.22 Banked up against wall [82] was a layer of made ground [87]. This layer was 0.44m thick and measured 1.70m east-west. It was only observed in section and no archaeological material was
-

recovered from this layer. The highest instance of layer [87] was located at 12.30m OD.

- 8.4.23 Overlaying chalk wall [99] was brick wall [81]. Wall [81] was composed of red unfrogged brick laid in a Flemish bond. The bricks were bonded with a mid grey sandy mortar with frequent white flecks. The wall measured 0.90m east-west and was 1.10m high. It was only observed in section and was located at 13.20m OD. The bricks were spot dated to 1450-1700.
- 8.4.24 In **WSTP 9** the medieval horizon [126] was overlain by a horizon of post medieval made ground [125], [124]. This horizon measured 2.00m thick and contained pottery spot dated to 1620-1650 and clay tobacco pipes dated to 1660-1680. The highest instance of this layer was located at 13.05m OD.
- 8.4.25 In **WSTP 10** the medieval horizon [123] was overlain by a 0.70m thick layer of made ground [122] containing pottery spot dated to 1580-1600. The highest instance of layer [122] was 12.75m OD. This layer was overlain by a later layer of made ground [121] which contained clay tobacco pipe spot dated to 1660-1680. The highest instance of layer [121] was 13.65m OD.
- 8.4.26 Over layer [121] was a brick wall [119] running east-west across the northern most portion of the trench. This wall was constructed of unfrogged bricks with a range of fabrics. The walls measured 0.60m wide and 0.90m of its length was exposed. It extended beyond the LOE to the east and west and was 1.10m high. The highest instance of the wall was located at 14.55m OD. The bricks were bonded with soft white mortar and were spot dated to 1500-1700.
- 8.4.27 Banked up against wall [119] was 0.80m thick layer of made ground containing frequent ashy inclusions [120]. This layer measured 0.90m by 3.00m and contained a high volume of clay tobacco pipes including evidence for manufacture. The pipes were spot dated to 1700-1740. The highest instance of this layer was located at 14.55m OD.

8.5 Phase 5: Late post-medieval/early modern (1800-1900)

- 8.5.1 19th century material was present in; TP 10, TP 11, WSTP1, WSTP 2, WSTP 3, WSTP 4, WSTP 6, WSTP 8 and BH 3.
- 8.5.2 In **TP 10** brick wall [53] was overlain by a layer of made ground [51]. The layer was located at 11.29m OD and contained frequent rooting, iron fragments and occasional pottery and glass shards and lead fragments. The pottery was spot dated to 1550-1700, however this is likely to be residual since the glass was dated to 1810+.
- 8.5.3 In **TP 11** a horizon of 19th century made ground was observed [60], [58], overlaying Roman pit fill [61]. The highest recorded point of this made ground was located at 11.33m OD
- 8.5.4 Overlaying both layer [51] and chalk wall [52] was another layer of made ground [50]. This layer was spot dated to 1810-1910. This was layer located at 11.62m OD.
- 8.5.5 In **WSTP 1** layer [118] was overlain by 0.60m thick layer of made ground [117]. The layer contained frequent glass shards and occasional fragments of CBM, pottery and animal bone. The layer was located at 14.00m OD and the finds assemblage was sport dated to 1830-1900.

- 8.5.6 In **WSTP 2**, the two timbers [102], [109] were sealed by a layer of made ground [101]. The layer contained frequent demolition rubble along with pottery and clay tobacco pipe fragments. The assemblage was spot dated to the 19th century, however a several residual sherds of 17th c. pottery were also recovered from this layer.
- 8.5.7 In **WSTP 3**, foundations [76] and [77] were sealed by a 0.90m thick layer of made ground [75]. This layer stretched the entire extent of the trench and comprised of demolition rubble. An assemblage of pottery, CBM fragments and glass was recovered from this layer along with a single Victorian penny dated to the later half of the 19th century. The artefact assemblage dates this layer to the 19th century; however residual material from the 18th and 17th century was present.
- 8.5.8 In **WSTP 4**, a 1.00m wide 19th century wall ran east-west across the trench. The wall was 2.90m high and was constructed of yellow and red bricks bonded with a very hard grey mortar. The highest instance of the wall was located at 13.39m OD.
- 8.5.9 In **WSTP 6** layer [87] was sealed by a layer of made ground [84]. This layer was 1.40m thick and contained a large amount of demolition rubble. It was located at 13.30m OD and pottery spot dated to 1830-1900 was recovered from the layer.
- 8.5.10 Cut into layer [84] were two rubbish pits, [96] and [86]. Both of these were only recorded in section and no finds were recovered. However, finds assemblages composed of tile, animal bone, shell and pottery could be observed from the top of the trench in the pit fills [97] [85].
- 8.5.11 A brick culvert [92] was also cut into layer [84]. The culvert was only seen in section and measured 0.5m east-west and 0.64m high and ran north/south. The culvert contained a silt fill [89].
- 8.5.12 A brick wall [95] was visible in the section, running east-west in the northern section of the trench. The wall was laid in stretchers and was 0.54m high. It was located at 13.00m OD.
- 8.5.13 Overlaying layer [84] was a spread of demolition rubble [94], located at 13.00m OD. It is likely that this layer is banked up against wall [95] however due to the depth of the trench it is impossible to discern the exact relationship of the two features.
- 8.5.14 Overlaying both the demolition rubble [94] and the brick wall [95] was a 0.30m thick layer of dark blackish brown silt. The layer contained frequent CBM and was located at 13.30m OD.
- 8.5.15 **WSTP 7** contained a brick wall visible in the section in the eastern section. The wall was constructed with yellow frogged bricks bonded with a light grey cement mortar and was probably part of a basement. It could not be investigated further as loose demolition rubble present within the pit forced it to be abandoned and backfilled.
- 8.5.16 In **WSTP 8** a structure and layer dated to the 19th century was present, however due to the depth of the trench their relationship was impossible to determine (Plate 6).
- 8.5.17 Layer [71] was a layer of made ground overlaying the medieval horizon [72]. It was composed

of dark grey clay with frequent inclusions of shell and CBM fragments and measured 1.10m thick. The pottery assemblage recovered from this layer was spot dated to the 19th century.

- 8.5.18 Also overlaying the medieval horizon [72] in the north eastern portion of the trench was a stepped brick foundation [74]. The foundation extended outside of the LOE, and the visible portions measured 0,70m by 1.60m and it was 0.60m high. The bricks were laid as stretchers, and the highest visible point of the foundation was located at 11.36m OD.
- 8.5.19 **WSTP 12** contained late 19th century brick foundation/basement walls and drainage (Plate 9). The walls extended outside of the LOE and were built with pale yellow and red frogged bricks with a very hard grey mortar. The structures reached at least 3m BGL (11.90m OD) and are believed to have truncated the area of the test pit further.
- 8.5.20 In **BH 3**, a layer of made ground [130] containing CBM, shell and animal bone was observed at 10.04m OD. This is likely indicative of the 19th century basement backfill.

8.6 Phase 6: Undated

- 8.6.1 Deposits that could not be assigned a date due to a lack of archaeological material were present in TP 5, TP 12, WSTP 4, WSTP 12, WSTP 13.
- 8.6.2 In **TP 5** two layers of made ground, [56] and [57] were present. Layer [57] was composed of dark greenish brown silt and was located at 10.35m OD. Layer [56] was composed of yellowish brown sand and was 0.45m thick. The layer was located at 10.66m OD.
- 8.6.3 A layer of made ground was present in **TP 12**, however no dating material was recovered. The highest instance of the layer was located at 11.21m OD.
- 8.6.4 Three layers of undated ground were observed in **WSTP 4**. The earliest of these layers, [113], was 0.50m thick and comprised of mottled clay very similar to layers [105] and [90]. The layer is likely to date to the early post medieval period. The highest recorded point was 11.49m OD
- 8.6.5 Overlaying this layer was a horizon of made ground made up of layers [112] and [110]. This horizon was 1.94m thick and its highest recorded instance was at 13.39m OD.
- 8.6.6 A layer of undated made ground [68] was present in the top of WSTP 12. The layer stretched over the entire trench and was located at 11.75m OD.
- 8.6.7 The very top of a layer of clay [129], likely a made ground, could be observed between the modern obstructions in the base of **WSTP 12**. No finds were recovered from this layer which was located at 12.40m OD.
- 8.6.8 In **WS03D** a light brown sand silt layer recorded between the depth of 1.80m to 4m with inclusions of frequent brick fragments, fleck of mortar and occasional small sub rounded sub angular flints were observed. Below was [3], a red brick and clay rubble. The limit of excavation was 5m.
- 8.6.9 In **WS04** below modern concrete was context [1], described as a greyish brown sandy silt with moderate CBM fragments and occasional small sub angular flints/ pebbles. A fragment of glass

and clay tobacco pipe were retrieved as finds. Beneath this deposit more demolition rubble with loose yellowish/grey sandy gravels [2] was present at 13.04m OD.

8.7 Phase 7: Modern

8.7.1 A large amount of modern demolition rubble was present over the majority of the site, at thicknesses ranging from 3.20m in WSTP 8 to 1.30m in WSTP 3. Above this rubble are concrete slabs of varying thicknesses related to, now demolished, modern 20th century buildings.

9 INTERPRETATIONS AND CONCLUSIONS

9.1 The results of the monitoring have enabled the research questions that were set out in the Written Scheme of Investigations to be addressed as follows:

9.1.1 Is there an evidence of Roman stratigraphy and burials?

A single Roman feature was encountered during the works. Pit [62] in the south-eastern part of site contained pottery spot dated, in general, to 50-400 AD. However, residual Roman pottery was found in later quarry pit [108] and within layer [127]. The latter also contained a fragment of human bone and while the context itself is medieval it is probable that the presence of human remains is the result of disturbed Roman burials rather than later medieval inhumations in the area. It is possible that Roman burials are present in the vicinity of the site, if not on the site itself.

Given the site's proximity to both the Roman road and Roman cemetery sites it seems likely that these remains represent a grave which was disturbed while digging a medieval quarry pit, similar to those found at 27-29 Whitechapel Street which also produced some residual human remains.

9.1.2 Is there an evidence of medieval quarrying and metalworking?

The evidence for medieval quarrying was present in the northern portion of the site in WSTP 9 and WSTP 10. While the edges of a presumed quarry pit were not observed, the depth of the medieval material suggests that it cut into the natural brickearth, while the residual Roman pottery and human remains suggests the disturbance of earlier strata within WSTP 9.

Another quarry pit was observed within WSTP 2; however, its fill contained early post-medieval pottery indicating that the site was used as a quarry outside of the medieval period, or alternatively that the pit itself was backfilled later.

No evidence of metal working was encountered during the monitored works.

9.1.3 What evidence is present for the 16th century playhouse or associated features?

No archaeological remains which could directly be associated with the playhouse were found although several structures that could potentially date to the 16th century were identified within

the central part of the site, where the theatre is thought to have existed. Wall [116] in WSTP 1 was constructed of very thin, early bricks and has the potential to be of Tudor period; however, due to the depth of the feature this could not be confirmed. The visual observation of the wall concluded the wall may have been of the 16th – 17th century origin but with an inclination towards the late 17th century. The foundations present in WSTP 3 were generally spot dated to 1450-1700, as were walls [81], [82] and [83] in WSTP 6. Similarly, walls spot dated to 1500-1700 were present in WSTP 10. Within WSTP 2, a wall spot dated 1500-1700 was observed along with a floor surface containing peg tile dated 1180-1800. Two wooden beams were also observed within WSTP 2 although these cannot be dated with any degree of certainty.

The results are not conclusive. Later 19th and 20th century interventions may have negatively affected the archaeological remains of the playhouse. No remains of the post-medieval date could be seen in WSTP 12 which cross-sectioned part of the area of purported location of the theatre. Nearby WSTPs 1 and 2, although containing numerous post-medieval (16th – 17th century) remains, did not produce evidence precisely dated to the early 17th century which would help to identify the theatre. As it was not a purposely-built free-standing structure it may be particularly difficult to point the exact remains which could be associated with it.

The ceramic building materials dating, together with that of pottery from associated deposits, suggest most of the uncovered post-medieval remains were of the mid to late 17th century date. This would point to the period shortly after the theatre ceased its activity and was dismantled. The growth in the site's development can be seen on historic maps where numerous new structures are visible dating from the mid-17th century onwards.

9.1.4 What is the extent of the 19th century basement truncation?

The 19th century material was found at varying thicknesses within trenches TP 10, WSTP 1, WSTP 2, WSTP 3, WSTP 7, WSTP 8, BH1TP and BH 3. None of these layers of made ground could specifically be identified as building backfill, however given the depth of the material in BH 3, TP 10, WSTP 3, 7 and 8 that they are likely the result of 19th century basements, in case of BH 3 and WSTPs possibly those of the large clothiers building dating to 1880s which occupied north-eastern part of the site. WSTP 12 contained deep late 19th century foundation, probably of one of the Brunswick Buildings (Nos 1-12), described as being five-storey with basements. Within TP 10 and WSTP 3, material from the early post medieval period is still present beneath the truncation including a chalk wall [52] and building foundations [76] and [77], which date to 1450-1700. The truncation in WSTP 8 is much deeper, and no early post medieval material was recovered, however the medieval horizon was relatively undisturbed under the layer of 19th century made ground.

9.1.5 What is the extent of modern truncation recorded on site during previous monitoring and can any of the modern deposits present be associated with WWII damage?

The site was a subject of significant early modern and modern truncation. Several deep foundations of the 20th century date were present within the investigated area. This truncation

seems to have had a mixed effect on the survival of archaeological material on the site. Whilst relatively thick layers of modern demolition rubble were present over the entire north part of the site, ranging in thickness from 1.30m to 3.20m, the 19th century made ground was still present, indicating that earlier archaeology may have not been truncated away by the modern intrusions. The medieval remains on the site were found within its northern part. The southern part of the site appeared to have been disturbed at higher degree although the Roman remains survived close to the south-eastern site boundary.

None of the demolition rubble could be identified explicitly as 'blitz' rubble; however, the layers encountered within the southernmost portion of the site are almost certainly associated with the destruction of the station.

- 9.2 In addition, the watching brief results suggest that the site may have been a location of the 18th century clay pipe manufacturing. Several waste fragments, including part of a muffle from WSTP 10 (Plate 10) and an assemblage of the pipes from the same maker suggest this activity on the site.

10 ACKNOWLEDGEMENTS

- 10.1 Pre-Construct Archaeology Limited would like to thank Sam Stanton and Tom Fairweather of Card Geotechnics Limited for commissioning the work and for their assistance.
- 10.2 PCA would also like to thank Adam Single of Historic England Greater London Archaeology Advisory Service for his input and advice.

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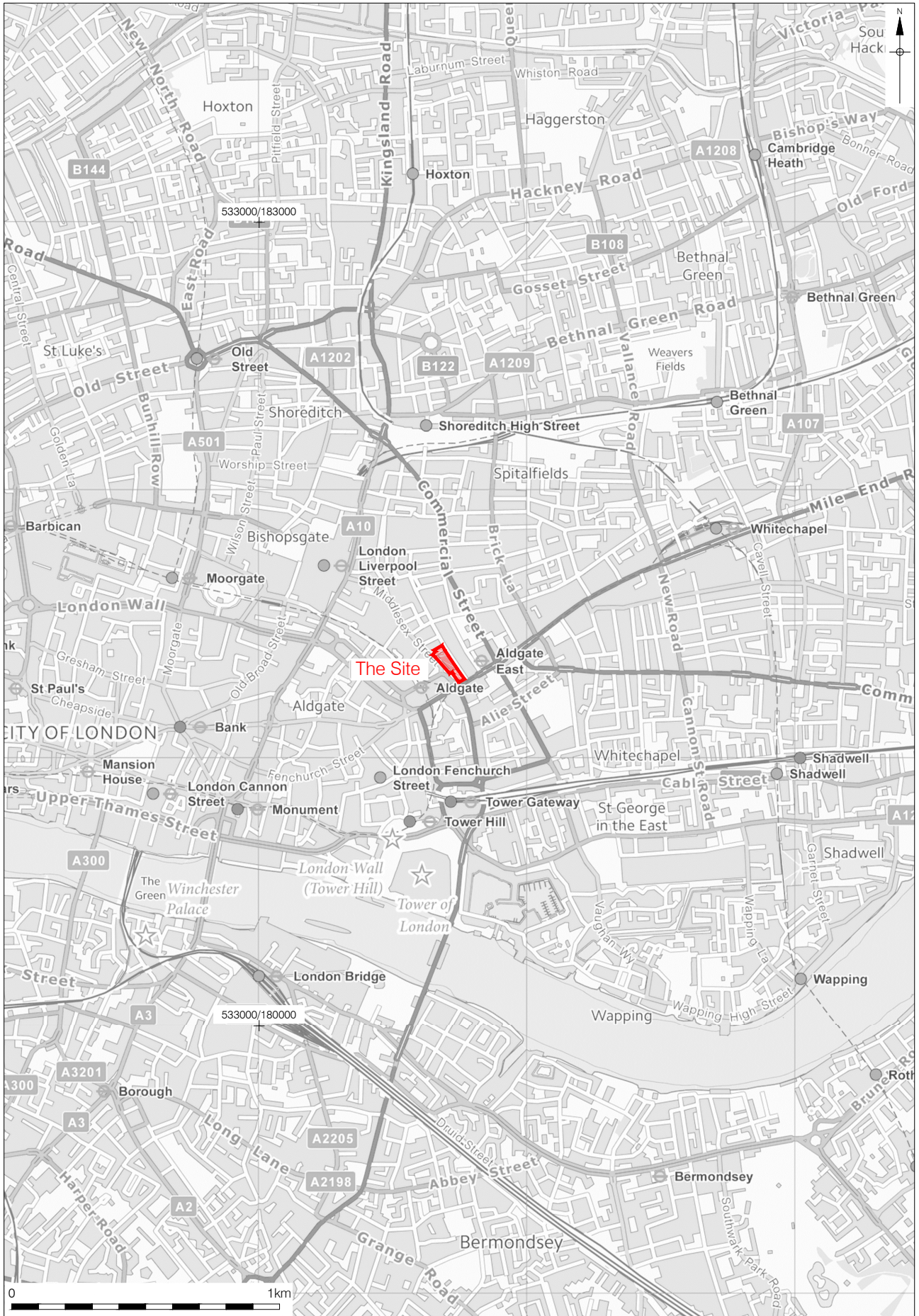
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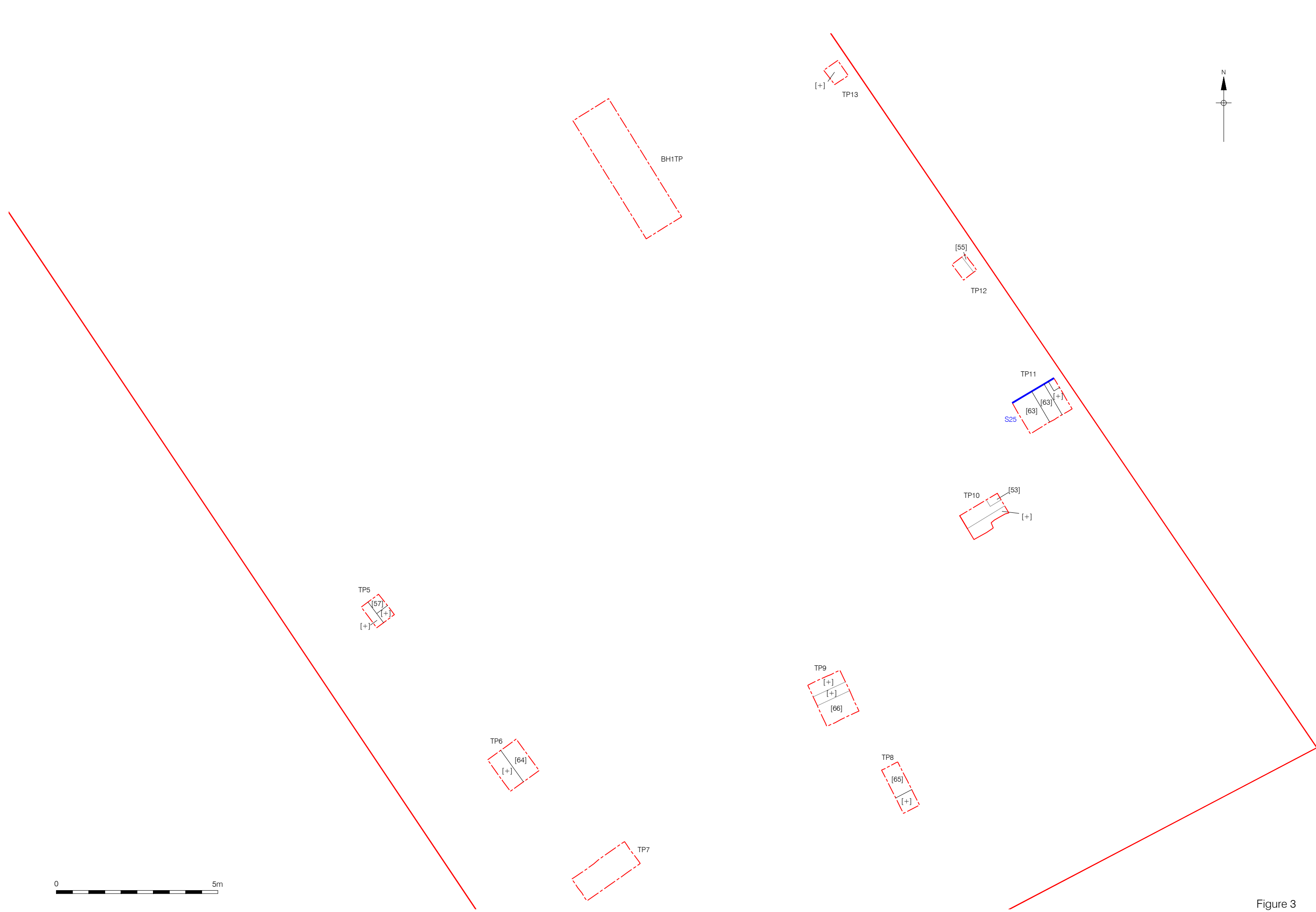
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 29/08/18 RM

Figure 1
 Site Location
 1:20,000 at A4



Ordnance Survey Mapping provided by the client
 © Pre-Construct Archaeology Ltd 2018
 29/08/18 RM & 03/09/18 MS & 06/09/18 DV

Figure 2
 Detailed Site Location
 1:500 at A4



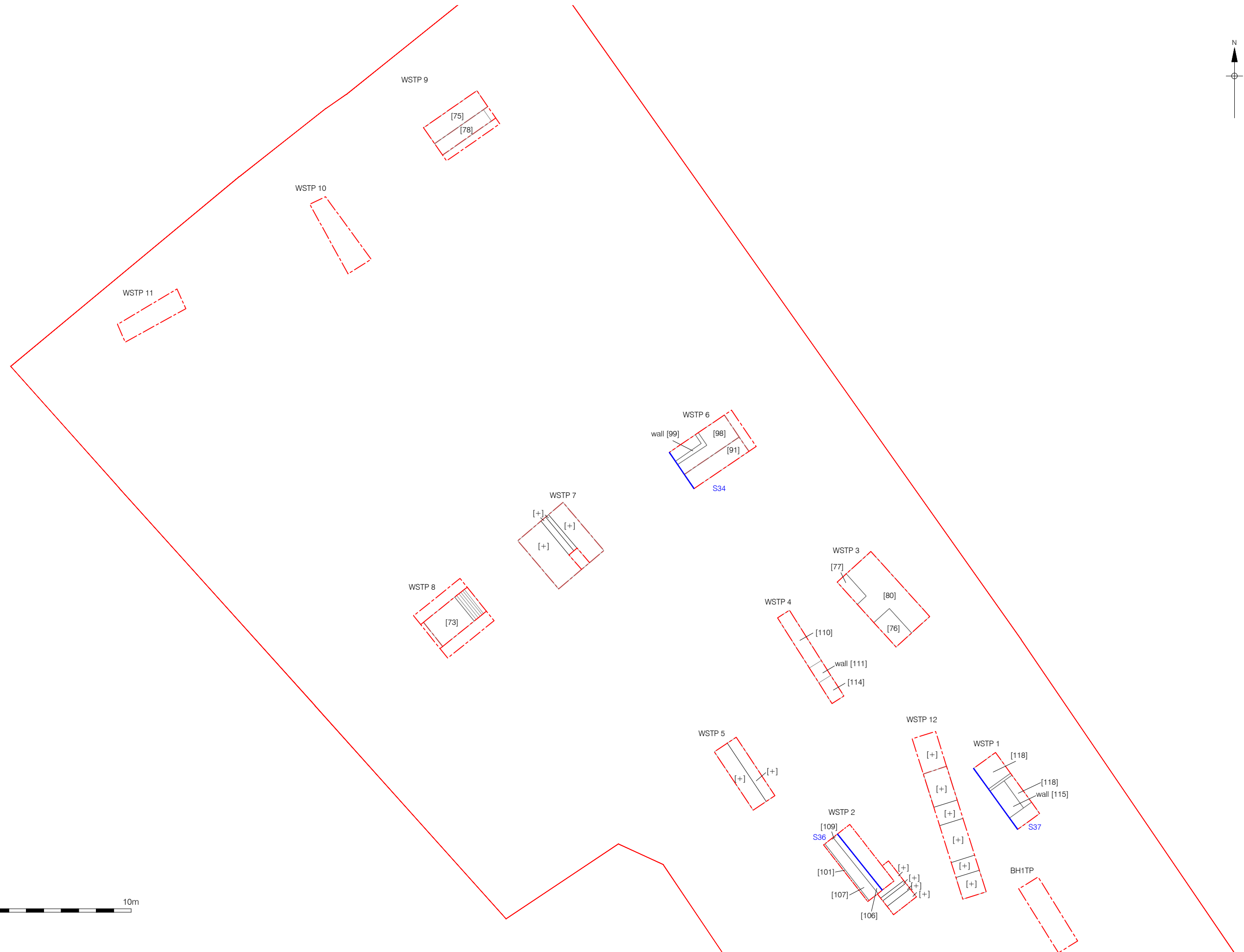
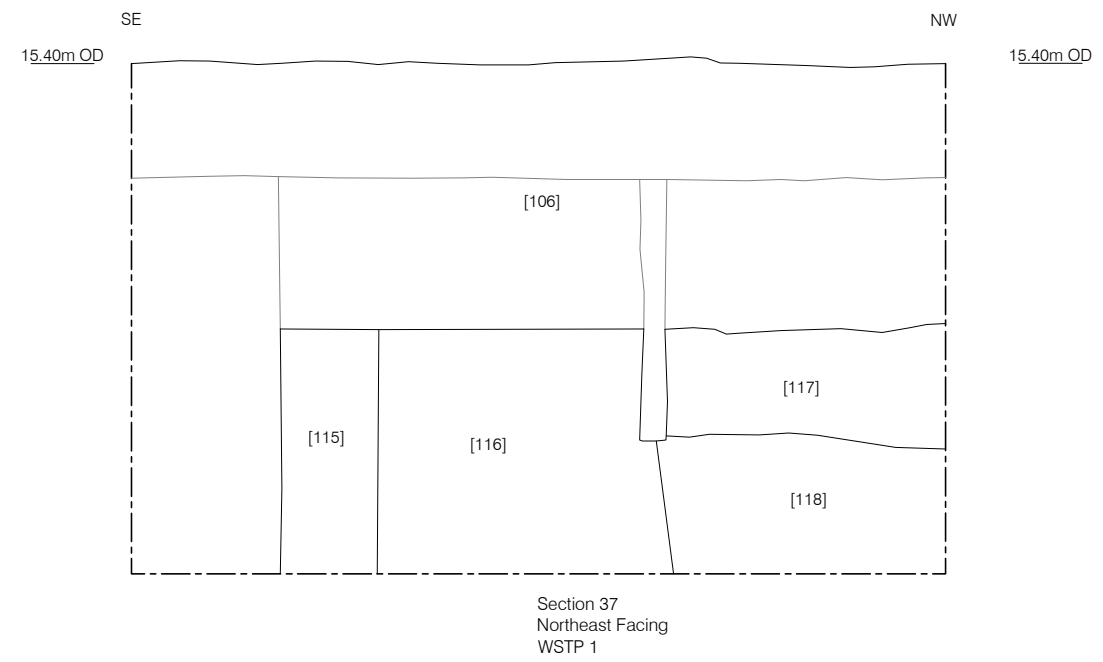
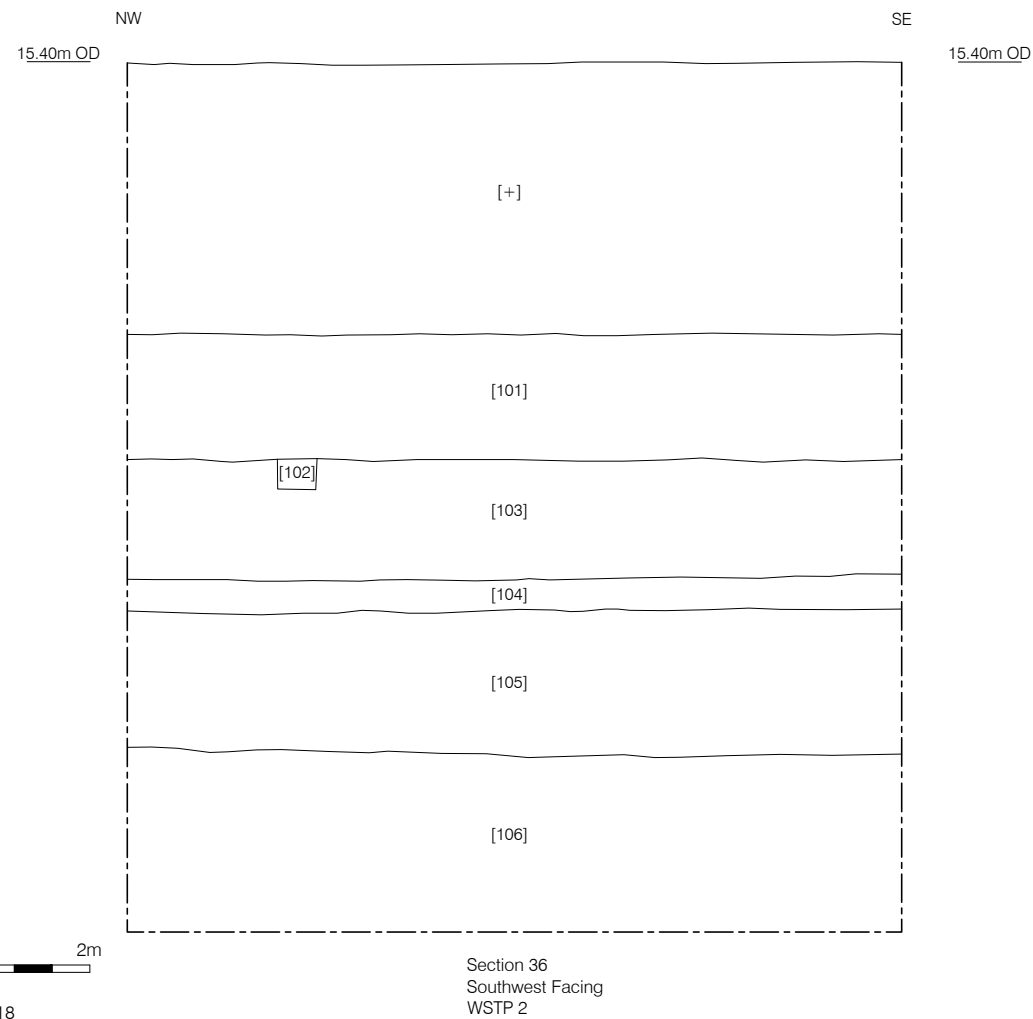
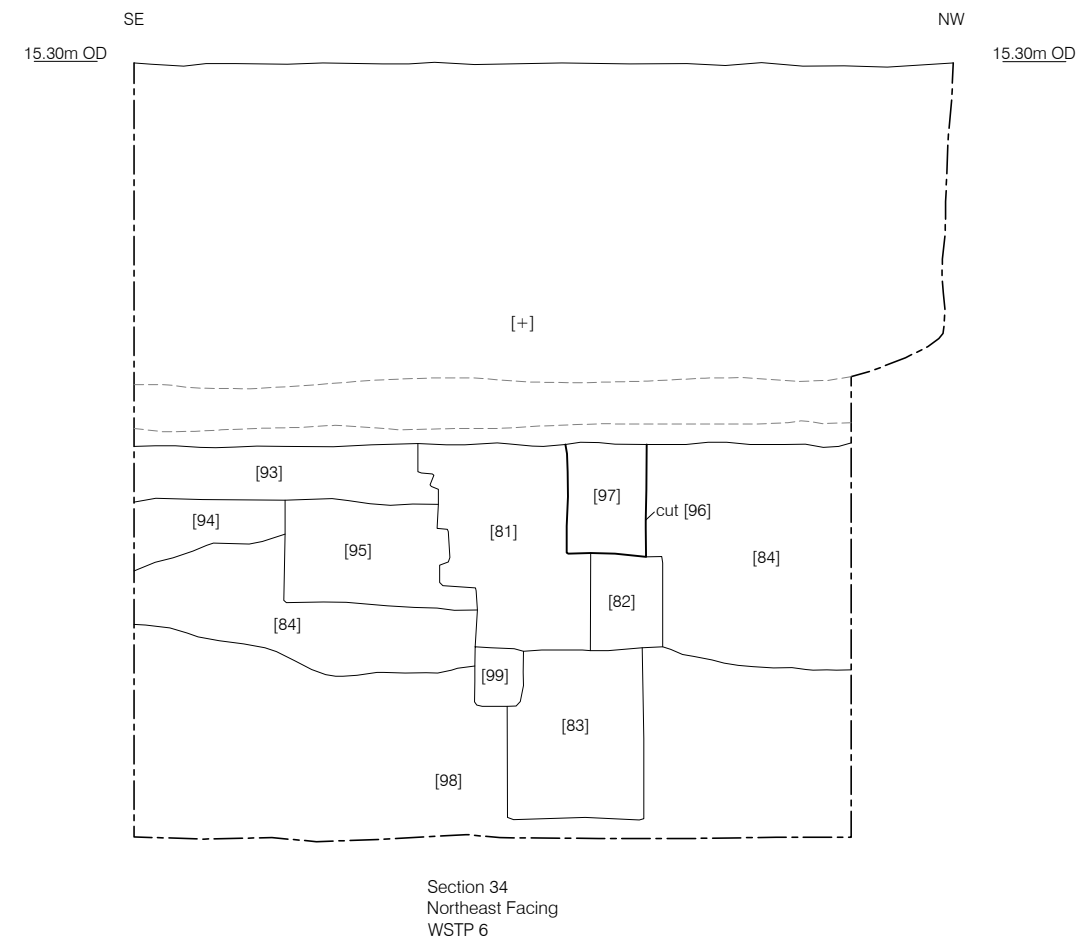
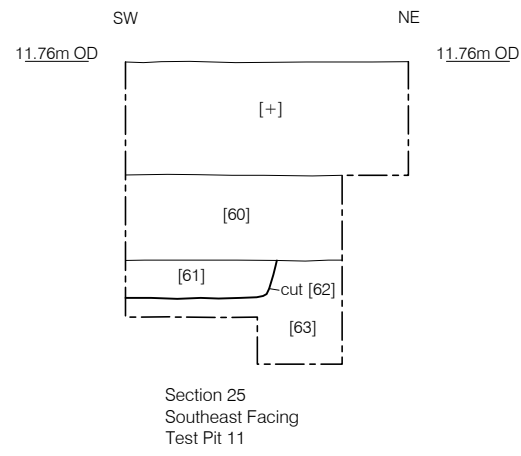
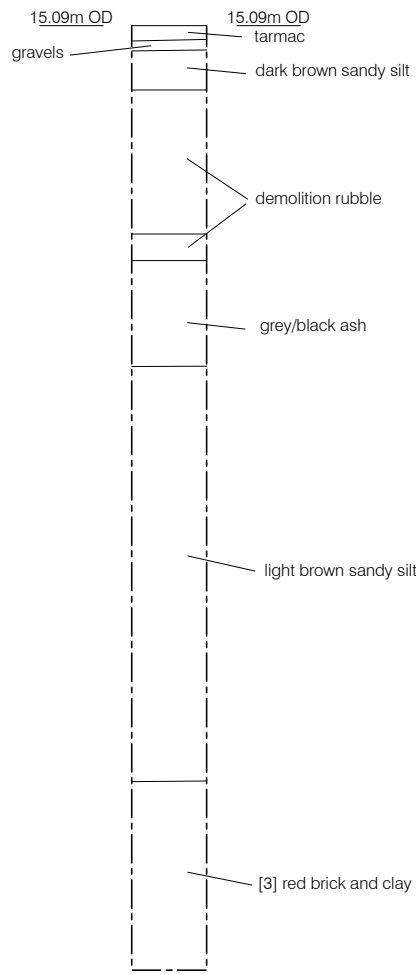
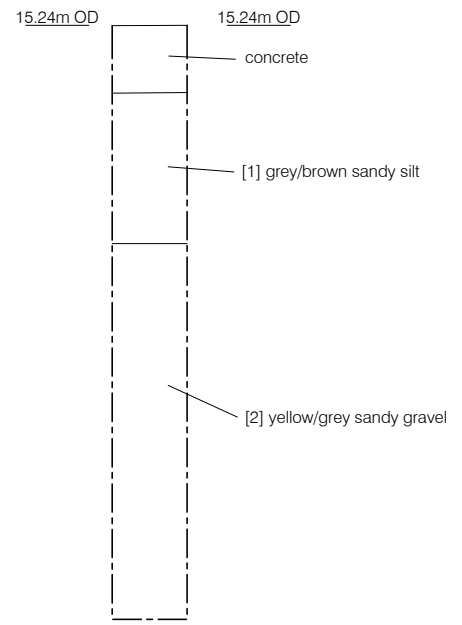


Figure 4
Waste Segregation Test Pits 1-13
1:200 at A3

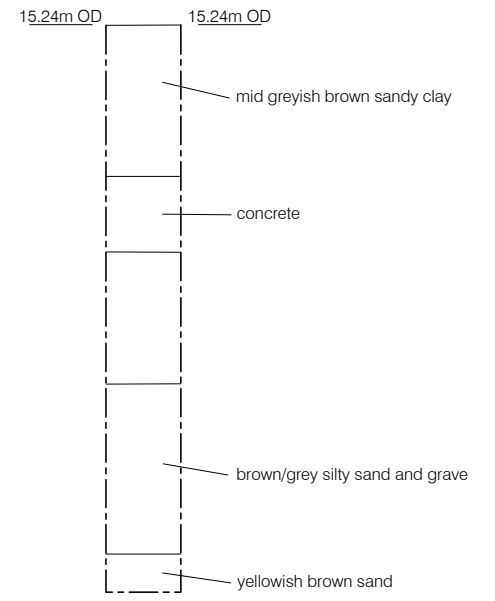
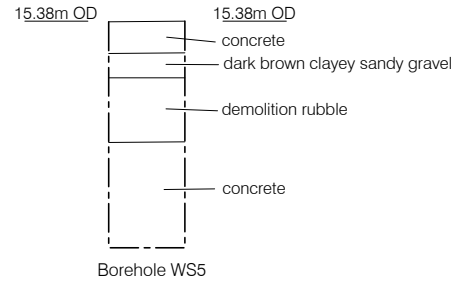




Borehole WS03D



Borehole WS4



Borehole WS6



Figure 6
Borehole (Window Sample) Sections
1:40 at A3

PLATES



Plate 1: Wall [116] in WSTP 1. Looking west.



Plate 2: WSTP 2 with wall [100]. Looking north.



Plate 3: WSTP 3. Looking south.



Plate 4: WSTP 7. Looking north-west.



Plate 5: WSTP 8. Looking north-west.



Plate 6: WSTP 9. Looking west



Plate 7: WSTP 10. Looking west.



Plate 8: WSTP 13. Looking south-west.



Plate 9: TP 5. Looking north.



Plate 10: Clay pipe muffle from [120] in WSTP10.



Plate 11: Ivory needle case from [107] in WSTP2.

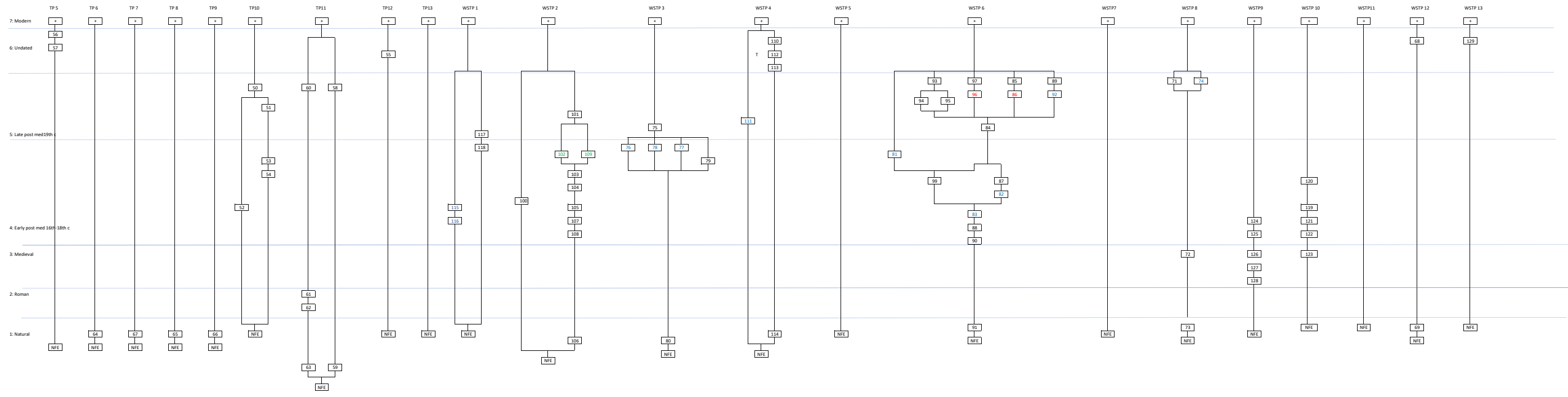
APPENDIX 1: CONTEXT INDEX

Context	CTX_Type	Trench	CTX_ Interpretation	CTX_Levels _high	CTX_Levels _low
1	Layer	WS4	Layer of made ground	14.90	
2	Layer	WS4	Layer of made ground	13.04	
3	Layer	WS03D	Demolition layer	11.09	
50	Layer	TP10	Layer of made ground	11.62	
51	Layer	TP10	Layer of made ground	11.29	
52	Masonry	TP10	Chalk Wall	11.29	
53	Masonry	TP10	Red brick wall	10.79	
54	Layer	TP10	Layer of made ground	10.61	
55	Layer	TP13	Layer of made ground	11.21	
56	Layer	TP5	Layer of made ground	10.6	
57	Layer	TP 5	Layer of made ground	10.35	
58	Layer	TP12	Layer of made ground	11.33	
59	Layer	TP12	Natural Brickearth	11	
60	Layer	TP12	Layer of made ground	11.16	
61	Fill	TP12	Fill of shallow cut. Roman	10.71	
62	Cut	TP12	Shallow cut feature	10.71	10.51
63	Layer	TP12	Layer of Brickearth	10.71	
64	Layer	TP6	Natural sands and gravels	7.27	
65	Layer	TP8	Natural sands and gravels	7.13	
66	Layer	TP9	Natural sands and gravels	7.29	
67	Layer	TP7	Natural sands and gravels	7.14	
68	Layer	WSTP12	Made ground	11.75	
69	Layer	WSTP12	Brickearth	10.65	
70	Layer	BH1	Natural gravels		
71	Layer	WSTP8	Made Ground	11.76	
72	Layer	WSTP8	Potential medieval horizon	10.66	
73	Layer	WSTP8	Natural Brickearth	10.46	
74	Masonry	WSTP8	Stepped Foundation	11.36	10.86
75	Layer	WSTP3	Demolition Rubble	13.95	

76	Masonry	WSTP3	Foundation. Possibly associated with [77] and [78]	12.75	
77	Masonry	WSTP3	Foundation. Possibly associated with [76] and [78]	12.75	
78	Masonry	WSTP3	Brick wall. Possibly associated with [76] and [77]	13.25	
79	Layer	WSTP3	Layer of silty clay.	11.35	
80	Layer	WSTP3	Brickearth	10.05	
81	Masonry	WSTP6	Brick wall.	13.2	
82	Masonry	WSTP6	Brick wall	12.7	12.3
83	Masonry	WSTP6	Brick walls with sandy soft grey mortar	12.2	
84	Layer	WSTP6	Made ground	13.3	
85	Fill	WSTP6	Fill of rubbish pit	13.3	
86	Cut	WSTP6	Cut of rubbish pit	13.3	
87	Layer	WSTP6	Made ground	12.3	
88	Layer	WSTP6	Made Ground	11.9	
89	Fill	WSTP6	Fill of culvert	13.17	
90	Layer	WSTP6	Potential medieval horizon	10.7	
91	Layer	WSTP6	Brickearth	10.3	
92	Masonry	WSTP6	Culvert	13.3	
93	Layer	WSTP6	Made ground	13.3	
94	Layer	WSTP6	Demolition rubble	13	
95	Masonry	WSTP6	Brick Wall, only seen in section	13	
96	Cut	WSTP6	Cut of rubbish pit	13.3	12.7
97	Fill	WSTP6	Fill of rubbish pit	13.3	
98	Layer	WSTP6	Made ground	12.3	
99	Masonry	WSTP6	Chalk Wall	12.2	12.15
100	Masonry	WSTP2	Brick Wall. NFE	14	
101	Layer	WSTP2	Made ground	14	
102	Timber	WSTP2	Potential Beam associated with [109]	13.3	13.14
103	Layer	WSTP2	Made ground	13.3	

104	Layer	WSTP2	Surface	12.7
105	Layer	WSTP2	Made ground	12.5
106	Layer	WSTP2	Brickearth	11.79
107	Fill	WSTP2	Potential fill of quarry pit	11.79
108	Cut	WSTP2	Cut of medieval quarry pit	11.79
109	Timber	WSTP2	Potential beam. Associated with [102]	13.75
110	Layer	WSTP4	Made ground	13.39
111	Masonry	WSTP4	19 th C. brick wall	13.39
112	Layer	WSTP4	Made ground	11.79
113	Layer	WSTP4	Mottled clay layer. Potential Medieval horizon	11.49
114	Layer	WSTP4	Brickearth	10.99
115	Masonry	WSTP1	Brick wall	14
116	Masonry	WSTP1	Brick wall. Potentially Tudor	14
117	Layer	WSTP1	Made ground	14
118	Layer	WSTP1	Made ground	13.4
119	Masonry	WSTP10	Brick wall	14.55
120	Layer	WSTP10	Made ground	14.55
121	Layer	WSTP10	Made ground	13.65
122	Layer	WSTP10	Made ground	12.75
123	Layer	WSTP10	Layer of made ground, potentially fill of quarry pit considering the height relative to rest of site	11.85
124	Layer	WSTP9	Made ground	13.05
125	Layer	WSTP9	Very soft green grey layer	11.55
126	Layer	WSTP9	Made ground	11.05
127	Layer	WSTP9	Layer with high organic content	10.05
128	Layer	WSTP9	Layer of gravelly clay	9.75
129	Layer	WSTP 13	Made ground	12.4
130	Layer	BH 3	Made ground	10.04
131	Layer	BH 3	Natural	9.04

APPENDIX 2: STARTIGRAPHIC MATRIX



APPENDIX 3: SPECIALIST REPORTS

POTTERY ASSESSMENT

By Chris Jarrett

Introduction

Pottery previously recovered from a watching brief on boreholes (window samples) at the study area has already been reported upon. That assemblage comprised two sherds (11g) of burnt pottery are recorded as conjoining fragments from a refined whiteware plate rim with a moulded scalloped edge and curved fluted brim. The vessel was most likely to date to the late 19th century.

The pottery assemblage from further phase of archaeological work consists of 83 sherds, representing 77 estimated number of vessels (ENV) and weighing 1.855kg, of which five sherds, 5 ENV, 206g was unstratified. The pottery dates to the Roman, medieval and post-medieval periods. The condition of the pottery is generally good and only one sherd is abraded, while only 12% by sherd count is residual and this consists of mostly Roman sherds. The assemblage is largely fragmentary, although four vessels have a complete profile, while diagnostic parts, e.g. bases and rims are represented, which allowed for most vessels to be assigned to vessel shape. The pottery appears to have been largely deposited under secondary circumstances. Pottery was quantified by sherd count, estimated number of vessels (ENV) and weight. The coding of the pottery types is according to the system employed by the Museum of London Archaeology (2014). The pottery was recovered from nineteen contexts as only small sized groups (fewer than 30 sherds). The assemblage is discussed by its types and distribution.

Pottery types

The quantification of the assemblage by period is as follows:

Roman: 13 sherds, 13 ENV, 378g

Medieval: 10 sherds, 10 ENV, 75g

Post-medieval: 60 sherds, 54 ENV, 1.402kg

The range of pottery types, their quantification and the forms that occur in the wares is shown in Table 1.

Pottery type	Code	Date range	SC	ENV	Wt (g)	Forms
Roman						
Roman pottery	RPOT	50-400	13	13	378	Amphora, unidentified
Medieval						
Coarse Surrey-Hampshire border ware	CBW	1270-1500	6	6	52	Jug, unidentified
Cheam whiteware	CHEA	1350-1500	2	2	15	Jug
Kingston-type ware	KING	1240-1400	1	1	3	Jug
Mill Green ware	MG	1270-1350	1	1	5	Jug
Post-medieval						

Pottery type	Code	Date range	SC	ENV	Wt (g)	Forms
Bone china with under-glaze blue transfer-printed decoration	BONE TR	1807-1900	1	1	16	Tea cup
Surrey-Hampshire border whiteware with green glaze	BORDG	1550-1700	3	3	64	Bowl or dish, unidentified, porringer
Surrey-Hampshire border whiteware with clear (yellow) glaze	BORDY	1550-1700	2	2	29	Tripod pipkin, unidentified
Creamware	CREA	1740-1830	7	5	64	Bowl or dish, dinner plate
Creamware with polychrome-painted decoration	CREA PNTD	1760-1800	1	1	3	Saucer
Dutch red earthenware	DUTR	1300-1650	1	1	38	Rounded jar
English stoneware with Bristol glaze	ENGS BRST	1830-1900	1	1	51	Upright bottle
Frechen stoneware	FREC	1550-1700	3	3	152	Rounded jug
Ligurian berettino maiolica	LIGU BERR	1520-1700	1	1	5	Dish
Miscellaneous unsourced post-medieval pottery	MISC	900-1500	5	5	82	Flower pot, horticultural dish, unidentified,
Pearlware with under-glaze blue-painted decoration	PEAR BW	1770-1820	2	1	13	Cylindrical mug
Essex-type post-medieval fine redware	PMFR	1580-1700	4	4	88	Unidentified Flared bowl, porringer, unidentified
London-area post-medieval redware	PMR	1580-1900	6	3	128	
London-area early post-medieval redware	PMRE	1480-1600	1	1	96	Dripping dish
London-area post-medieval slipped redware with clear (yellow) glaze	PMSRY	1480-1650	1	1	33	Unidentified
Surrey-Hampshire border redware	RBOR	1550-1900	2	2	239	Chamber pot, squat rounded jar
Refined white earthenware	REFW	1805-1900	1	1	5	Cylindrical jar
Refined white earthenware with under-glaze polychrome-painted decoration in 'chrome' colours	REFW CHROM	1830-1900	1	1	3	Saucer
Refined white earthenware with sponged or spattered decoration	REFW SPON	1805-1900	2	2	19	Ogee-shaped tea cup, unidentified,
English tin-glazed ware	TGW	1570-1846	1	1	13	Unidentified
London tin-glazed ware with blue- or polychrome-painted decoration and external lead glaze (Orton style A)	TGW A	1570-1650	1	1	46	Charger: Britton shape B-D
London tin-glazed ware with blue- or polychrome-painted decoration and external lead glaze (Orton style D)	TGW D	1630-1680	2	2	70	Albarello, charger: Britton shape B-D,
Refined whiteware with under-glaze transfer-printed decoration	TPW	1780-1900	8	8	100	Deep rounded bowl, plate, dessert plate breakfast teacup,
Refined whiteware with under-glaze blue transfer-printed stipple and line decoration	TPW2	1807-1900	1	1	3	Tea cup
Refined whiteware with under-glaze brown or black transfer-printed decoration	TPW3	1810-1900	1	1	27	Saucer
Yellow ware	YELL	1820-1900	1	1	15	Oval dish

Table 1. MWG18: pottery types and their quantification by sherd count (SC), estimated number of vessels and weight (g) and the forms present in each ware.

Distribution

The distribution of the post-Roman pottery is shown in Table 2, where each context containing pottery displays the size of the context, the number of sherds, ENV and weight, the *terminus post-quem* and *terminus ante quem* for the latest pottery type (Context ED and LD), the range of wares present and a suggested deposition date for the context.

Context	Fill of	SIZE	SC	ENV	Wt (g)	Context ED	Context LD	FABRIC	Spot date
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0			5	5	206			FREC, PMFR, TGW D, PMR, TPW3	
51	S		1	1	54	1550	1700	BORDG	1550–1700
61	62	S	2	2	117	50	400	RPOT	50–400
71	S		1	1	17	1480	1900	MISC	19th century
72	S		2	2	16	1270	1500	CBW	1270/1350–1500
75	S		15	12	145	1807	1900	TPW2, TPW, CREA, CREA PNTD, REFW SPON, PEAR BW, MISC	Mid 19th century
84	S		9	9	164	1830	1900	REFW CHROM, REFW SPON, TPW, YELL, RBOR	1830–1900
90	S		1	1	198	1550	1900	RBOR	1550–1900
101	S		3	3	14	1780	1900	TPW, LIGU BERR	Mid 19th century
105	S		1	1	5	1350	1500	CHEA	1350–1500
107	108	S	10	10	64	1570	1846	TGW, MISC, MG, CHEA, KING, CBW, RPOT	1570–1630
117	S		3	3	72	1830	1900	ENGS BRST, REFW, BONE TR	1830–1900
120	S		1	1	55	1630	1680	TGW D	1630–1680
121	S		5	2	123	1580	1900	PMR	18th century
122	S		3	3	85	1580	1700	PMFR, DUTR, PMSRY	1580–1600
123	S		1	1	20	1270	1500	CBW	1270/1340–1500
123	S		3	3	131	1612	1650	RPOT	1270/1340–1500
123	S		1	1	17	50	400	RPOT	50–400
124	S		9	9	226	1612	1650	PMFR, PMRE, TGW A, FREC, BORDY, BORDG	1620–1650
125	S		2	2	23	1794	1900	BONE PNTD, FREC	19th century
126	S		4	4	47	1270	1500	CBW, RPOT	1270/1350–1500
127	S		1	1	56	50	400	RPOT	50–400

Table 2. MWG18: Distribution of pottery types showing individual contexts containing pottery, the size of the context, the number of sherds (SC), ENV and weight (Wt g), the date range of the latest pottery type (Context ED/LD), the pottery types present and a suggested deposition (spot) date.

Significance, potential and recommendations for further work

The assemblage has the significance and potential for demonstrating Roman, medieval and post-medieval activity on the on the study area. There are present discrete small groups of pottery (context [61] and [127]) that are comprised solely of Roman wares, which include reduced wares and amphora, while a sherd of Samian is residual (context [107]). Medieval activity dated c. 1270–1350 may be represented by a residual sherd of Mill Green ware (MG) and found in deposit [107], while later medieval activity is more intense and indicated by the presence of coarse Surrey-Hampshire border whiteware found solely in deposits [72] and [126], while a sherd of Cheam whiteware was the only sherd of pottery found in context [105]. The post-medieval pottery largely falls into two chronological periods. Firstly there are groups of pottery that are dated to the mid-17th century, although a few sherds of pottery, including

tin-glazed wares possibly from the Aldgate pottery, are dated to the late 16th-early 17th century. On the whole, the 17th-century pottery largely consists of typical wares found in London, such as Surrey-Hampshire border wares and red earthenwares, besides tin-glazed wares and Essex fine red earthenwares, the latter being fairly well represented. It is comparable to the nearby Aldgate (ALD74) assemblage that was formative for an understanding of London post-medieval ceramics (Orton and Pearce 1984). The imported pottery consists typically of German Frechen stoneware, although a rare, residual sherd of a Ligurian berettino maiolica dish (context [101]), together with the occurrence of Essex fine redware, may indicate that the residents on the study area chose to spend some of their income on better quality ceramics compared to that of the norm. The second period represented in the post-medieval pottery dates to the mid-late 19th century and the pottery types typically consist of mostly creamware and transfer-printed whiteware. These later ceramics were concentrated in deposits [84], [101] and [117]. Of note was an upright bottle made in English stoneware with a Bristol glaze that has stamped on the shoulder the address of a local victualler and survives as 'FROM/...USSEL & .../140 HIGH STREET/ WHITECHAPEL' (context [117]).

The pottery has the potential to date the context it was recovered from and to indicate Roman, medieval and post-medieval activity on the site and adds to an understanding of how the local area developed as a suburb of both Roman and post-Roman London.

There are no recommendations for further work on the assemblage at this stage, although its importance should be reviewed if new finds of pottery are recovered from future archaeological work on the study area.

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
50	2276;2271	Post-medieval peg tiles	2	1180	1900	1480	1900	1480-1900	No mortar
71	2276;2271	Post-medieval peg tiles	4	1180	1900	1480	1900	1480-1700	No mortar
75	3064W	Dutch Wall tile, biblical or landscape design,	1	1620	1800	1620	1800	1700-1800	No mortar
77	3046;3101PM	Early post-medieval sandy red brick; Mortar T1	1	1450	1700	1450	1700	1450-1700	1450-1700
81	3033	Early post-medieval sandy red brick; Mortar T1	2	1450	1700	1450	1700	1450-1700	1450-1700
82	3046	Early post-medieval sandy red brick	1	1450	1700	1450	1700	1450-1700	No mortar
83	3046	Early post-medieval sandy red brick	2	1450	1700	1450	1700	1450-1700	No mortar
100	3046	Early post-medieval sandy red brick	2	1450	1700	1450	1700	1500-1700	No mortar
104	2276	Post-medieval peg tiles	2	1480	1900	1480	1900	1480-1900	No mortar
105	2586	Medieval/post-medieval peg tile	1	1180	1800	1180	1800	1180-1800	No mortar
107	3102;2276	Abraded daub; post-medieval peg tiles	4	1500B C	1900	1480	1900	1480-1900	No mortar
115	3032;3101PM	Post-great fire narrow	3	1666	1900	1666	1900	1780-1900	1780-1900

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
		bricks; Mortar T2							
119	3046;3101PM	Early post-medieval sandy red brick; Mortar T1	1	1450	1700	1450	1700	1500-1700	1500-1700
121	2276	Post-medieval peg tile	1	1480	1900	1480	1900	1480-1900	No mortar
122	3120	Coal	1	50	1900	50	1900	50-1900	No mortar
123	2271	Medieval/post-medieval peg tile	1	1180	1800	1180	1900	1180-1800	No mortar
124	2276	Post-medieval peg tile	1	1480	1900	1480	1900	1600-1800	No mortar
127	2271;2586	Medieval peg tiles	2	1180	1800	1180	1800	1180-1450	No mortar
128	2586	Medieval/post-medieval peg tile	1	1180	1800	1180	1800	1180-1800	No mortar

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CLAY TOBACCO PIPE AND PRODUCTION WASTE ASSESSMENT

By Chris Jarrett

Introduction

Clay tobacco pipes recovered from earlier archaeological work monitoring boreholes has been previously reported upon (Jarrett 2018). A small sized assemblage of tobacco pipes was recovered from the site (less than one box). Most fragments are in a good condition and only one of the bowls appears to be residual, indicating the material was mostly deposited soon after breakage. Clay tobacco pipes occur in seven contexts, as small sized (under 30 fragments) groups.

All of the clay tobacco pipes (30 fragments and none are unstratified) were recorded in a database format and classified by Atkinson and Oswald's (1969) typology (AO) and 18th-century examples are by Oswald's (1975) typology and prefixed OS. The pipes are further coded by decoration and quantified by fragment count. The degree of milling on 17th-century examples has been noted and recorded in quarters, besides their quality of finish. The assemblage is notable for containing one fragment of muffle (the inner chamber of the clay tobacco pipe kiln) and production waste in the form of three stems and five bowls, which were all made by the same I D maker. The clay tobacco pipes are discussed by their types and distribution.

THE CLAY TOBACCO PIPE TYPES

The clay tobacco pipe assemblage from the site consists of thirteen fragments each of bowls and stems, besides two mouthpieces. The pipe bowls range in date between 1660 and 1740, while later dated stems and a c. 1840 onwards dated mouthpiece are also present. All of the bowls show evidence for being smoked, except for the I D marked bowls recovered from context [120].

1660-1680

AO15: one spurred, rounded profile, shorter variant bowl with half milling of the rim and an average finish. Context [124].

AO18: one heeled bowl with a barrel-shaped profile, half milling of the rim and an average finish. Context [121].

1680-1710

AO20: one heeled, rounded profile bowl with a damaged rim that shows evidence for at least a quarter milling of the rim and an average burnish. Context [101].

AO22: two heeled, almost straight-sided angled bowls with no or half milling of the rim and a fair finish. Context [33].

1700-1770

OS10: eight heeled upright bowls with rounded fronts and a straight back and all of the examples were noted in context [120]. Two makers are represented by initials found on the sides of the heel:

T C: one bowl with the rim missing. Oswald (1975, 134) records seven London pipe makers working during the period c. 1700–40, although none of the individuals can be specifically identified as working in this area of London.

I D: five bowls, of which four have an additional dot above the I. At least three different moulds can be identified in which the bowls were made. All of these bowls have the appearance of not being smoked and have the characteristics of being wasters. The firing faults mostly take the form of orange or reddish brown stains on the surfaces of the bowls and their stems, which probably resulted from a flash of contaminated smoke accidentally entering the muffle chamber. Two bowls additionally have dark reddish-brown slag-like deposits and one of these items additionally has the most firing faults recorded in the group. These consist of the bowl being fired to a semi-vitrified state with grey surfaces while the break for the missing rim subsequently 'healed'. The slaggy deposit on this item covers the broken end of the stem and has additional inclusions, which possibly represents debris from the floor of the kiln, which the bowl may have fallen on to. The surfaces of the bowl additionally have fine specks of white clay, indicating that the bowl had been incorporated as strengthening material during construction of the muffle chamber. Another of the bowls has a distorted, oval in plan, rim. There are four London pipe makers recorded by Oswald (1975, 135) working during the time frame of the waster bowls, although their actual location within the city and its suburbs is unknown.

Stems

The stems were broadly dated according to their thickness and more pertinently the size of the bore. Three of the stems recovered from context [120] appear to be wasters: one example is long and slightly warped and has a surface partially orange stained from fire flashes, while two fragments are reduced pale grey and appear to have been part of the muffle chamber construction.

Mouthparts

There are two mouthparts recorded. The earliest was found in context [120] and is dated by association with the pipes to c. 1700–40 and has a bevelled tip. The latest mouthpart occurred in context [123] and consists of a moulded, flattened oval-type dated from c. 1840 (Higgins 2017).

The muffle fragment

The fragment of muffle was recorded in context [120] and survives as a sub-rectangular piece measuring 97mm in length x 48mm wide and x31 mm thick. The muffle (Plate 9) consists of pale grey-fired pipeclay with moderate brown iron ore inclusions. One broken surface has two placed parallel stems with pale grey surfaces. The fragment of muffle is missing both the internal and external surfaces.

Distribution

The distribution of the clay tobacco pipes is shown in Table 1.

Context	FC	Assemblage size	Context ED	Context LD	Bowl types (pipe makers)	Context considered date
50	1	S	1580	1910	Stem	1730–1910
75	5	S	1680	1710	x2 bowls: AO22, x3 stems	1680–1710
101	5	S	1580	1910	Stems	1730–1910
120	15	S	1700	1740	x8 bowls : OS10 (x1 TC, x5 I D), x1 mouthpiece, x5 stems, x1 fragment of muffle	1700–1740
121	1	S	1660	1680	x1 bowl: AO18	1660–1680
123	1	S	1580	1910	mouthpiece	1840+
124	1	S	1660	1680	x1 bowl: AO15	1660–1680

Table 1. MWG18. Distribution of the clay tobacco pipes showing the number of fragments (FC) and size of the group, the dates of the latest clay tobacco pipe bowl present (Context ED and LD), the bowls (and initials) found in that deposit and a context considered (spot) date for each context.

Significance, potential of the collection and recommendations for further work

The assemblage is of significance for demonstrating the presence of clay tobacco pipe production waste on the site and recorded in the form of the fragment of muffle kiln wall and the five I D marked OS10 bowls and three stems, all of which have firing faults and were found in deposit [120]. The wasters may indicate the presence of a clay tobacco pipe kiln on or close to the study area and operated by a master pipe maker with the initials I D. The presence of a possible clay tobacco pipe kiln on the site is important as to date only eight structures of this type have been excavated in the Greater London area (Jarrett and Hammond 2013: J. Pearce pers. comm.), which is surprisingly small considering that London was a major location for this industry. One of these kilns, of a c. 1660–80 date, was excavated immediately to the south of the site (ALD74: Thompson *et al* 1984).

The potential for the tobacco pipes is as an aide to dating the contexts in which they were found and to provide a sequence for them. Additionally, the wasters found in context [120] indicate that a clay tobacco pipe kiln was located on the site or very nearby and further evidence for the uncovering of this structure

would add greatly to an understanding of the London clay tobacco pipe industry. No further work on the clay tobacco pipe assemblage is recommended at this stage, although its importance should be reviewed in the light of further archaeological work on the study area.

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THE METAL AND SMALL FINDS

By Märit Gaimster

A total of eleven metal and small finds were recovered from the excavations, along with a fragment of leather. One object, a copper-alloy coin (SF 1) is reported separately (Andrews, this report). Other finds are all listed in the table below and will be discussed here by phase.

Phase 3: Medieval

A probable iron nail, incomplete and heavily corroded was retrieved from layer [123]. Two other finds came from this phase although they may be of Roman origin and residual. One was in the form of an oval fragment of tanned leather with a smooth grain side. Recovered from layer [127] this is likely the remains of the sole of a shoe or sandal. The other find, from layer [128], is the fragment of a thinly cast copper-alloy object with one plain thickened edge or rim. Reminiscent of a vessel fragment the fragment has no discernible curve to the body, although a slight curve to the rim/edge suggests it originates from a large round or oval object, perhaps a tray, table top or mirror.

Phase 4: Post-Medieval (16th –18th centuries)

This phase produced three finds, including an incomplete and heavily corroded but substantial iron nail from layer [54]. A possible iron knife blade, heavily corroded and slightly twisted, came from layer [12]. Of particular interest is a lathe-turned implement of elephant ivory (SF 2). One end is finished with a knob finial on a tapering moulded neck while the other end is open with internal threading. The object has some parallels in medieval and early modern bone styli which were similarly lathe turned with knob finials, although these writing implements are far narrower with the working end holding a metal point (cf. Egan 1998, fig. 210; McGregor *et al.* 1999, fig. 930; Egan 2005, fig. 115). The wide and straight body of the Middlesex Street implement, with one threaded opening, may suggest this is the upper part of a needle case or a similar container, perhaps for a bodkin or tooth pick (cf. Biddle and Elmhurst 1990, fig. 238 no. 2532). It was retrieved from the fill of medieval Quarry Pit [107], where it was associated with pottery dating from 1570–1630. At this time, secular ivory products included items such as combs, cutlery handles and seal matrices (cf. MacGregor 2001, 377–78); Thompson *et al.* 1984, 100–3).

Phase 5: Late post-medieval/early modern (19th century)

Five finds came from this phase, all from Layer [51]. They include two substantial but heavily corroded iron nails and an iron structural fitting with L-shaped head. Two lead objects are represented by a tapering plate or strap, and a length of narrow tube.

Significance and recommendations for further work

Metal and small finds potentially provide key elements of domestic material culture and activities related to the investigated site. While the assemblage from Middlesex Street is small, and dominated by iron nails and other structural fittings, it does represent most phases recorded on site from the Roman period and through to the 19th century. Two objects are identified which have a potential or special interest, in the form of a thin-cast object of copper alloy from a Roman context and a lathe-turned ivory implement from the early modern period. No further work is recommended at this stage; however, any future publication or extended work on the site would require further identification of some finds. For that purpose, it is recommended that at least two of the corroded iron objects from early phases are x-rayed.

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POST-ROMAN COIN

By Murray Andrews

One post-Roman coin was recovered during a watching brief at Middlesex Street, Tower Hamlets. It is described in the table below.

Assemblage composition

The sole coin from the site is a copper-alloy penny of Victoria and belongs to either the 'Bun Head' issue of 1860-1895 or the 'Old Head' issue of 1895-1901. It constitutes a typical example of the kind of petty coinage that found mass circulation during the mid- to late nineteenth century as a means of payment for wages and small-scale purchases, and, as a 'single find', almost certainly represents an accidental loss. As domestic currency was not subject to a systematic recoinage until the introduction of decimalisation in 1971, coins of this type could theoretically have remained in circulation well into the 1960s; however, historical sources suggest that most Victorian pennies had fallen out of circulation by the early twentieth century. Consequently, this specimen probably constitutes a coin accidentally lost from currency in the mid-nineteenth to early twentieth centuries, and quite probably within the first half of this date range.

Significance

The post-Roman coin from Middlesex Street constitutes a key element of the archaeological data from the site and provides valuable evidence for site chronology. Furthermore, it provides material evidence for the 'small change' economy of London and its hinterland during the mid- to late Victorian period.

Recommendations

- Any further publication should include this coin within a wider small finds catalogue.

Catalogue

Context	SF	Description	Date
75	1	Copper-alloy penny of Victoria. 1860-1901. 'Bun Head' or 'Old Head' issue. Obverse: Illegible, indeterminate. Reverse: Illegible, indeterminate. Die axis uncertain, weight 8.7g. Moderate wear. Heavy corrosion.	1860-1901

GLASS ASSESSMENT

By Chris Jarrett

Introduction

A small sized assemblage of glass was recovered from the site (less than one box). The glass dates entirely to the post-medieval period and mostly the 19th century or later. The fragments show no evidence for abrasion, except for the presence of naturally weathered items. The assemblage consists of fragmentary items, except for one bottle that is intact. The majority of the glass appears to have been discarded soon after it was broken, or the contents were no longer needed. The glass was quantified by the number of fragments, estimated number of vessels and weight and was recovered from five contexts and individual deposits produced small (fewer than 30 fragments) groups.

All of the glass (11 fragments, representing 10 ENV and weighing 1.996kg) of which none are unstratified) was recorded in a database format, by type, colour and form. The assemblage is discussed as an index.

Index

Context [50], spot date: 1810 onwards

Bottle, cylindrical-section: clear soda glass, 2 fragments, 1 ENV, 21g. Wall sherd, slightly weathered

Tumbler: clear soda glass, 1 fragment, 1 ENV, 125g. Base, concave underside, the wall has 14 panels with rounded ends. Slightly weathered.

Context [52], spot date: 1810 onwards

English wine bottle, cylindrical, late-type: dark olive green HLLA glass, 1 fragment, 1 ENV, 196g. Wall sherd.

Context [75], spot date: 1906 onwards

Bottle, shouldered: grey-blue soda glass, 1 fragment, 1 ENV, 340g. Conical neck, rounded shoulder, the bottom of which is embossed 'GRIMWADES PATENT MILK'. Cylindrical wall, concave base (diameter: 71mm). Weathered.

Bottle, square-section: green-tinted soda glass, 1 fragment, 1 ENV, 1.025kg. Intact (height: 284mm), applied packer rim (28mm in diameter), conical neck, with at the base diagonal ribs above a cordon. The

conical shoulder has vertical ribbing and the rounded corners are plain. Square section body (72mm x 72mm), although one side is concave, one flat panel is embossed 'O-T' over a circular disc containing a pepper and leaves, above 'REGISTERED/TRADE MARK/THE PROPERTY OF/O-T Co/LONDON N', concave underside. The embossed lettering on the bottle refers to a pepper (capsicum) cordial made by John Dixon O. T. Ltd., Prahran, Ice and Aerated Water Co, Prahran, Australia. The company was established in 1898 and by 1906 it was manufacturing "Hot Chilli Punch" and the probable contents of the bottle. The date a factory was set up in North London by this company, as indicated by the mark on the bottle, is not presently understood.

Context [117], spot date: 1810 onwards

Bottle: blue soda glass, 1 fragment, 1 ENV, 146g. Rim: applied mineral or double oil-type (diameter: 18mm), conical neck. Weathered.

Bottle, cylindrical-section: green-tinted soda glass, 1 fragment, 1 ENV, 146g. Rounded shoulder, cylindrical wall with sixteen vertical panels, concave underside embossed with four small bosses and illegible lettering, probably for the bottle maker. Base diameter: 50mm. Weathered.

Jug: clear soda glass, 1 fragment, 1 ENV, 46g. Wall sherd with a seam mark and a vertical loop strap handle terminal which has been twice folded. Weathered.

Lid/cover: green soda glass, 1 fragment, 1 ENV, 92g. Intact. Rounded top with a rounded concave centre, bevelled edge. Pedestal base with a footring and a pontil scar/ rim diameter: 60mm, base: 43mm. Ht: 21mm

Context [122], spot date: 16th-early 17th century

Drinking vessel: white *latimo* glass 1 fragment, 1 ENV, 2g. Rim, simple. Enamelled decoration consisting of an internal and external border of blue dots in an uncertain pattern and external red and blue curving lines. Rim diameter: 110mm. slightly weathered. 16th-early 17th century

Significance, potential and recommendations for further work

The majority of the glass has little significance at a local level, the assemblage containing frequently occurring 19th-century and later forms recorded in the London area. However, the O-T "Hot Chilli Punch" square-section bottle found in context [75], although late in date, is an unusual find. Of interest is the rim of a drinking vessel made in imported, 16th-early 17th century dated enamelled white *latimo* glass and recovered from context [122]. This item represents a conspicuous consumption item that came from a wealthy household. The main potential of the glass is to date the contexts it was recovered from. There

are no recommendations for further work at this time, although the importance of the assemblage should be reviewed if new glass finds are recovered from further archaeological work on the site.

STONE AND CERAMIC BUILDING MATERIAL

By Amparo Valcarcel

Two crates of ceramic building material, mortar and stone were retained from the archaeological evaluation at Middlesex Street, Whitechapel High Street and Goulston Street, London E1 7QA (MGW18) National Grid Reference: TQ 533705 181351.

This small sized assemblage (33 examples 28.09 kg) was assessed in order to:

- Identify (under binocular microscope) the fabric and forms of the Roman, medieval, post-medieval ceramic building material recovered from MGW18.
- Identify the fabric of the unworked stone on order to determine what the material was made of and from where it was coming from.
- Assess and make recommendations for further study.

METHODOLOGY

The application of a 1kg masons hammer and sharp chisel to each example ensured that a small fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10). The appropriate Museum of London building material fabric code is then allocated to each item.

All the materials were found in layers, fill of quarrying pit, made ground deposits, and walls, mostly consisting of post-medieval materials.

CERAMIC BUILDING MATERIAL (29 examples 28.06 kg)

More than 74.41% of the assemblage consists of post-medieval ceramic building material, with much smaller quantities of medieval (27.58%). No Roman material was found.

MEDIEVAL (8 examples, 0.26 g)

A small size assemblage of medieval roofing tile, defined by fabric type, form and the presence of coarse moulding sand, attest to redeposition episodes of medieval activity. Many are thin tiles, have coarse-moulding sand or have a fabric that is typical of medieval roofing tile. The predominant fabrics are the finer sandy groups, consisting of the thin-reduced core 2271 and iron oxide fabric 2586 (12th to 13th century). All the medieval building material is in a fragmentary condition.

POST-MEDIEVAL (21 examples, 27.8 kg)

Early post-medieval (17 examples, 21.12 kg)

Bricks (9 examples, 20.51 kg)

Local London sandy red fabrics [1450-1700]

3033; 2 examples, 5.57 g.

3046; 7 examples, 14.94 kg.

Two different sandy red brick fabric types were identified; the fine sandy 3033 and the very sandy red 3046. All bricks were shallow (51-56mm), wide (106-109 mm) with sunken margins, uneven surfaces and unfroged. All were manufactured using local London brick clay. The bricks were collected from different walls and were bonded with a yellow or dark grey sandy mortar mixed with charcoal and chalk. All the structures built up with these bricks are dated between 1450 and 1700.

Peg tile (8 examples 0.6 kg)

2276 (1480-1900)

Peg tiles belonging to the very common sandy red fabric 2276, dominate the post-medieval roofing tile assemblage.

LATE POST-MEDIEVAL (4 examples, 6.67 g)

A few late post-medieval fragments were recovered. All these materials reflected the city expansion and the increase of the population in the post-medieval period. Three complete post-great fire bricks were collected in contexts [115]. The presence of these bricks shows a phase of redevelopment at the end of 18th century.

One small example of Dutch tin-glazed wall tile, preserves a double blue line, normally associated with biblical and landscape designs, dated 1700-1800 AD.

DAUB

Three small fragments of daub (22 g.) were found in fill [107] of a quarrying pit. The material only represents the existence of a timber and wattle structure nearby.

Stone

The only stone collected from the site, was a small fragment of coal, used as fuel from context [122].

BUILDING MATERIALS SPOT DATES

Context	Fabric	Form	Size	Date range of material		Latest dated material		Spot date	Spot date with mortar
50	2276;2271	Post-medieval peg tiles	2	1180	1900	1480	1900	1480-1900	No mortar
71	2276;2271	Post-medieval peg tiles	4	1180	1900	1480	1900	1480-1700	No mortar
75	3064W	Dutch Wall tile, biblical or landscape design,	1	1620	1800	1620	1800	1700-1800	No mortar
77	3046;3101PM	Early post-medieval sandy red brick; Mortar T1	1	1450	1700	1450	1700	1450-1700	1450-1700
81	3033	Early post-medieval sandy red brick; Mortar T1	2	1450	1700	1450	1700	1450-1700	1450-1700
82	3046	Early post-medieval sandy red brick	1	1450	1700	1450	1700	1450-1700	No mortar
83	3046	Early post-medieval sandy red brick	2	1450	1700	1450	1700	1450-1700	No mortar
100	3046	Early post-medieval sandy red brick	2	1450	1700	1450	1700	1500-1700	No mortar
104	2276	Post-medieval peg tiles	2	1480	1900	1480	1900	1480-1900	No mortar
105	2586	Medieval/post-medieval peg tile	1	1180	1800	1180	1800	1180-1800	No mortar
107	3102;2276	Abraded daub; post-medieval peg tiles	4	1500B C	1900	1480	1900	1480-1900	No mortar
115	3032;3101PM	Post-great fire narrow bricks; Mortar T2	3	1666	1900	1666	1900	1780-1900	1780-1900
119	3046;3101PM	Early post-medieval sandy red brick; Mortar T1	1	1450	1700	1450	1700	1500-1700	1500-1700
121	2276	Post-medieval peg tile	1	1480	1900	1480	1900	1480-1900	No mortar
122	3120	Coal	1	50	1900	50	1900	50-1900	No mortar
123	2271	Medieval/post-medieval peg tile	1	1180	1800	1180	1900	1180-1800	No mortar
124	2276	Post-medieval peg tile	1	1480	1900	1480	1900	1600-1800	No mortar
127	2271;2586	Medieval peg tiles	2	1180	1800	1180	1800	1180-1450	No mortar
128	2586	Medieval/post-medieval peg tile	1	1180	1800	1180	1800	1180-1800	No mortar

RECOMMENDATIONS/POTENTIAL

All the material was recovered from fills, layers and mainly early post-medieval structures. The condition of the material is generally good. Forms noted in the assessed material, include standard types such as brick and roof tile. Bricks are the only form that survived with complete dimensions. Post-medieval ceramic building material is prevalent (74.41%), while medieval fabrics are present in low quantities. The medieval material was made from fabrics 2271 (1180-1800) and 2586 (1180-1800) and forms (peg tile) is likely to date from the 12th to early 14th centuries. Their presence indicates medieval activity in very close proximity to, and possibly within, the site. Different brick fabrics were recorded, although sunken margins and the absence of frogged examples indicates an early post-medieval date. Bricks from [115] are dated Post-Great fire. Only context [122] produces any stone, a small fragment of coal probably used as fuel.

The works related to the development of the area at the 15th century and later, possible removed structures associated with the medieval and Roman phases of the site. The fact that all the material was broken up, and no mortar was attached, suggests that the medieval material was dumped and redeposited. Structures [77] [81] [82] [83] [100] and [119] are constructed using early post-medieval bricks. Aga's (1568) and Faithorne and Newcourt's maps (1658) showed that this area was almost occupied by buildings, including the Aldgate's Bar and the Boar's Head Inn. An excavation of the site is highly recommended to understand the early-post medieval development in this area. No further work is recommended on the assemblage at this stage.

Bibliography

- Betts, I.M. & Weinstein, R.I. (2010). *Tin-Glazed tiles from London*. Museum of London Archaeology, Dorset Press.
- Meszaros, V., 2012, Middlesex Street Hotel, London E1: Historic Environment Assessment. Museum of London.
- Green, E. (2018): Middlesex Street, Whitechapel High Street and Goulston Street E1 7QA: An Archaeological Watching Brief, unpublished PCA report.

ANIMAL BONE

By Kevin Rielly

Introduction

This site is located just beyond the north-eastern boundary of the City of London, north of Aldgate Underground Station and on the corner of Middlesex Street and Goulston Road. It consisted of a series of bore holes, these providing a slight and varied assortment of finds, including animal bone, probably dating to the 18th and 19th

Methodology

The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered.

Description of faunal assemblage

The site provided a single bone (taken from Bore Hole 4A at a depth between 0.35 and 1.15m), part of a fused cattle radius/ulna shaft fragment. This is clearly from a large individual and may well represent an 'improved' type and therefore date somewhere between the late 18th and 19th centuries (after Rixson 2000, 215 and evidence compiled from various PCA sites as for example at the nearby site of 45 Folgate Street, in Rielly 2016).

Conclusion and recommendations for further work

The size of the individual represented by the radius/ulna fragment provides evidence for approximately late 18th to 19th century deposits at a depth of 0.35 to 1.15m.

References

Rielly, K, 2016 Appendix 4: Faunal Assessment, in A, Fairman, An Archaeological Investigation at 45 Folgate Street, London E1 6BX, Unpublished PCA Report, 29-30

Rixson, D, 2000 *The History of Meat Trading*, Nottingham University Press

APPENDIX 4: OASIS FORM

OASIS ID: preconst1-327133

Project details

Project name	Middlesex Street and Goulston Street, Whitechapel, London
Short description of the project	Watching Brief on Geotechnical Site Investigation
Project dates	Start: 05-03-2018 End: 22-08-2018
Previous/future work	Yes / Yes
Any associated project reference codes	MWG18 - Sitecode
Type of project	Recording project
Site status	Area of Archaeological Importance (AAI)
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	NONE None
Monument type	NONE None
Significant Finds	IVORY NEEDLE CASE Post Medieval
Investigation type	"Watching Brief"
Prompt	Voluntary/self-interest

Project location

Country	England
Site location	GREATER LONDON TOWER HAMLETS TOWER HAMLETS Middlesex Street, Whitechapel High Street and Goulston Street, London E1 7QA
Postcode	E1 7QA
Study area	0.23 Hectares
Site coordinates	TQ 533705 181351 50.941656027614 0.183294686593 50 56 29 N 000 10 59 E Point
Height OD / Depth	Min: 14.2m Max: 15.4m

Project creators

Name of Organisation	PCA
Project brief originator	??
Project design originator	Zbigniew Pozorski
Project director/manager	Zbigniew Pozorski
Project supervisor	Ellen Green
Type of sponsor/funding body	Geotechnical contractors

Name of sponsor/funding body
Card Geotechnics Ltd

Project archives

Physical Archive recipient	LAARC
Physical Contents	"Animal Bones", "Ceramics", "Glass", "Human Bones", "Leather", "Metal"
Digital Archive recipient	LAARC
Digital Contents	"Animal Bones", "Ceramics", "Glass", "Human Bones", "Leather", "Metal", "Stratigraphic", "Survey"
Digital Media available	"Survey", "Text"
Paper Archive recipient	LAARC
Paper Contents	"Animal Bones", "Ceramics", "Human Bones", "Leather", "Metal", "Stratigraphic", "Survey"
Paper Media available	"Context sheet", "Drawing", "Photograph", "Plan", "Report", "Section", "Survey", "Unpublished Text"

Project bibliography 1

Publication type
Grey literature (unpublished document/manuscript)

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