

TATE MODERN PROJECT

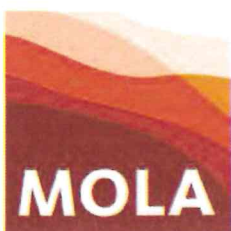
Bankside

London SE1

London Borough of Southwark

Report on an archaeological watching brief

March 2016



**TATE MODERN PROJECT
Bankside
London SE1**

Site Code TMB09
NGR 531984 180407
OASIS reference molas1-141014

Planning reference 10-AP-0928
Condition Number 10

Report on an archaeological watching brief

Sign-off History:

| Issue No. | Date: | Prepared by: | Checked/ Approved by: | Reason for Issue: |
|-----------|------------|-------------------------------|-----------------------|-------------------|
| 1 | 07.03.2016 | Heather Knight & Portia Askew | Derek Seeley | First issue |
| 2 | 10.03.2016 | Portia Askew | Derek Seeley | Second issue |
| | | | | |
| | | | | |

Graphics: Carlos Lemos

Summary

This report has been commissioned from Museum of London Archaeology (MOLA) by Mills Whipp Projects on behalf of the client, the Tate Modern, in order to record and assess the results of a watching brief carried out at Tate Modern, Bankside, London SE1.

The excavation of the footprint of the rain water harvesting tanks and manholes in the south-west area of the site was monitored between 14th February 2012 and 28th March 2012. The excavation of two tank footprints was monitored between 20th May 2015 and 21st September 2015.

Natural alluvial deposits were recorded across the 2012 watching brief areas at 1.28m OD to 1.40m OD. No features were found cutting into the surface of the alluvial deposits but pottery found at the interface of the alluvial and overlying deposits all date from the later medieval period during this phase of the watching brief.

Natural alluvial deposits were recorded in 2015 watching brief areas at 1.15m OD to 1.60m OD. An east-west aligned ditch found on the south side of the site at 1.15m OD was 9.5m in length and extended beyond the limit of excavation to the west and was cut by modern truncation to the east. Another ditch parallel to this may have been part of, or a recut of it, although this relationship has been removed by a 19th-century foundation. These features may be the ditch shown on Rocque's map.

The earliest evidence of deliberate and concerted land reclamation dates from the early post-medieval period. Homogenous dump deposits are found sealing the alluvial sequence. These appear to be a planned attempt to consolidate soft marshy ground. The earliest buildings on the site date from the late 17th/early 18th century. Horwood's map of 1799 shows the site occupied by a row of terraced houses fronting Gravel Lane (now called Holland Street) with gardens to the rear.

The dumped material on which these buildings were founded contains a quantity of industrial waste material including kiln furniture. It is possible the Great Suffolk Street pottery, situated at the junction of Lavington Street and Great Suffolk Street (c 225m to the south of the site), could have been the source of this material but the nearby stoneware and delftware pothouse in Gravel Lane (now called Holland Street) seems the most likely source of this material. The range of delftware biscuit ware forms and the stoneware saggars recovered from the site are representative of manufacturing dated after the last quarter of the 17th-century. This evidence therefore conforms to the period when the Gravel Lane pothouse operated (1694–1748) and to the material retrieved from the recent excavations on that site.

Contents

| | |
|--|-----------|
| <u>Summary</u> | <u>2</u> |
| <u>Contents</u> | <u>3</u> |
| <u>1 Introduction</u> | <u>4</u> |
| <u>2 Topographical and historical background</u> | <u>6</u> |
| <u>3 The watching brief</u> | <u>9</u> |
| <u>4 Results of the watching brief</u> | <u>10</u> |
| <u>5 Archaeological potential</u> | <u>31</u> |
| <u>6 Publication and archiving</u> | <u>33</u> |
| <u>7 Acknowledgements</u> | <u>34</u> |
| <u>8 Bibliography</u> | <u>35</u> |
| <u>11 OASIS archaeological report form</u> | <u>52</u> |

List of Illustrations

- Fig 1 Site Location
- Fig 2 Location of watching brief areas
- Fig 3 Section 2 – Watching brief Area 1
- Fig 4 Section 1 – Watching brief Area 1
- Fig 5 Section 4 – Watching brief Area 1
- Fig 6 Section 5 – Watching brief Area 1
- Fig 7 Section 3 – Watching brief area 1
- Fig 8 Photograph of the Staff Garden
- Fig 9 Archaeological features in Watching brief Area 6
- Fig 10 Archaeological features in Watching brief Area 7
- Fig 11 Section 7 - Watching brief Area 8
- Fig 12 Section 6 watching brief Area 8
- Fig 13 Archaeological features in Watching brief area 8
- Fig 14 John Rocque's map of 1746
- Fig 15 Richard Horwood's map of 1799

1 Introduction

1.1 Site background

1.1.1 The watching brief took place at the Tate Modern, Bankside, London Borough of Southwark SE1, hereafter called 'the site'. The site is situated to the rear of the south-west section of the Tate Modern building and is bounded by Holland Street to the west, Park Street to the east and Sumner Street to the south (Fig 1). The centre of the site is at OS National Grid Reference 531925 180390. Modern pavement level near to the site lies at c 3.9m OD. The site code is TMB09.

1.1.2 Prior to the archaeological investigations, MOLA was commissioned to contribute a chapter in respect of archaeological remains and the built heritage to an Environmental Statement for the site (Planning application submitted by the board of Trustees of the Tate Gallery, Environmental statement Vol 1: Chapter 14, Archaeology and Built Heritage). This chapter summarised the likelihood for archaeological survival on the site and identified areas of maximum archaeological potential and it can be referred to for information on the natural geology, archaeological and historical background of the site (MOLA, 2008). Further to this work MOLA carried out a series of site works, previously reported on::

| Task | Dates | Location & Report Reference |
|-----------------------------|-----------|--|
| Evaluation & Watching Brief | 2009 | Trenches A, B & Borehole (UXO) monitoring (MOLA 2009) |
| Watching Brief | 2010 | Trench within proposed area of pile locations (MOLA 2010a) |
| Watching Brief | 2011-2012 | Trench and Crane base 2 pile locations (MOLA 2012a) |

1.1.3 The current investigation report concerns the following site works:

| Task | Dates | Location & Report Reference |
|----------------|-------|--|
| Watching Brief | 2012 | Rain water tanks and manholes Areas 1-5 (MOLA 2012b) |
| Watching Brief | 2015 | Tanks Areas 6-8 and the Staff Garden |

1.1.4 The evaluation and watching brief summaries and the previous Environment Statement informed the design - the Written Scheme of Investigation (WSI) and the Method Statement - for the current watching brief, which was eventually carried out (Mills Whipp Projects, 2010; MOLA, 2010b). All archaeological work has been carried out in accordance with that WSI.

1.2 Planning background

1.2.1 The legislative and planning framework in which the watching brief took place was fully set out in the *Written Scheme of Investigation* (Mills Whipp Projects 2010, Section 3), which formed the project design for the watching brief.

1.2.2 The site is situated within the Southwark Archaeological Priority Zone and Bankside and Bear Gardens Conservation Area as specified by the London Borough of Southwark. Tate Modern 1 is not a Listed Building and no Listed Buildings are

present within the site boundary.

1.2.3 The watching brief was carried out to fulfil a condition attached to the Planning Consent given by Southwark Council (Consent reference 10-AP-0928; Condition number 10). Condition 10 states:

Prior to commencement of development works an archaeological evaluation shall be undertaken, according to the details submitted with this planning application. A report detailing the results of the evaluation will be submitted to and approved by the Local Planning Authority. Dependent upon the results of this evaluation a suitable programme of archaeological mitigation works will be agreed in writing with the Local Planning Authority. This agreement will include a timetable for undertaking the archaeological mitigation works and the production of a final report and publication.

1.3 Scope of the watching brief

- 1.3.1 An archaeological watching brief is normally a limited fieldwork exercise. It is not the same as full excavation, though individual features may be fully excavated.
- 1.3.2 The watching brief was carried out within the terms of the relevant Standard for watching brief specified by the Institute for Archaeologists (CIFA, 2014).
- 1.3.3 All work has been undertaken within the research priorities established in the Museum of London's A research framework for London Archaeology, 2002.

2 Topographical and historical background

2.1 Topography

- 2.1.1 The basic geology consists of London Clay of Eocene date overlain to the south by relatively recent flood plain gravel. Certain areas of higher ground have been identified and are referred to as 'eyots'. Generally the eyots have a surface level of 1.00m OD. The land surface in these areas consisted of naturally deposited sand or gravels overlying clay.
- 2.1.2 The earliest deposit excavated at New Globe Walk, to the east of the site, was alluvium, overlain by organic material filling a former channel of the Thames from -0.05mOD to +0.15mOD. At Skinmarket Place, 150m to the east of the site, part of a natural sand and gravel island was recorded at +0.66m OD. Also to the east of the site, at Southbridge House, Tilbury IV peats, sealed by water-lain clays, were recorded at -0.30mOD. Important evidence of activity dating to the Neolithic/Bronze Age has been recorded immediately to the west of the site at Hopton Street, including possible land surfaces at a height of between +0.94m to +1.12m OD. Land use indicative of probable land clearance, agricultural practices and occupation was found, suggesting that this area may have been situated on an eyot. Natural sands and gravels were recorded at a height of between 0.10m OD and 0.42m OD.
- 2.1.3 Previous ground investigation in the vicinity of the site has revealed alluvium between 1mOD and -1.80mOD and natural gravels between 0m OD and -5.20m OD. London Clay has been recorded between -5.50m OD and -6.35m OD. The northern limit of the Tate Modern 2 Development is located approximately 155m to the south of the present bank of the River Thames, and the modern ground level in the vicinity ranges from approximately +3.80m to +4.20m OD.

2.2 Archaeology

Prehistoric

- 2.2.1 In prehistoric times the Thames was a much wider, shallower, slower flowing river than it is today. The Southwark bank comprised a marsh with numerous channels and gravel islands of higher, drier ground.
- 2.2.2 At Emerson Place, to the east of the site, flint implements dating to the Mesolithic period were recovered in the 19th Century and lithics discovered at Hopton Street, to the west of the site, were also found to contain a small percentage of Mesolithic to Early Neolithic material. An excavation at Skinmarket Place, 150m to the east of the site, revealed Neolithic pottery and flint artefacts. This evidence was found to be sealed by water-lain clays, which, in turn, were cut by early medieval ditches.
- 2.2.3 Past excavations at Hopton Street and Holland Street, also to the west of the site, have revealed the site to be located on a natural sand eyot, which was occupied during the late Neolithic/early Bronze Age. This included a possible Neolithic/Bronze Age land surface and evidence of ard marks, postholes, pits, flint work and pottery of a similar date. Holland Street was subsequently covered by a layer of alluvium and not utilized until the 16th century.

Roman

- 2.2.4 During the Roman period the site would have been located on the edge of a river channel with an island of higher ground in the northern part of the site. With rising tidal levels in the subsequent centuries the area would certainly have become marshy and would have periodically flooded. However, to the south of the site, at

Ewer Street, Roman finds were discovered in the 19th century. The finds included coins, pottery and glass objects, which were potentially associated with inhumations. A coin hoard was also found in 1864. This suggests that the site and immediate vicinity may have been accessible for a time during the Roman period.

- 2.2.5 In 1980, archaeological salvage work at 58 Park Street, to the east of the site, recorded a Roman timber revetment consisting of pile-driven oak posts with horizontal planks behind them, set into a marsh deposit. It most likely bordered a channel to the west, and formed part of a land reclamation scheme to contain the marsh and drain the ground. Dating evidence from behind the revetment suggests that it was not constructed before the late 3rd century.

Saxon

- 2.2.6 There is no archaeological evidence for Saxon activity in the locality of the site, although some development along the riverfront is documented by the time the Domesday Book was compiled in 1086 when the area was designated a 'Liberty' of autonomous monastic land.

Medieval

- 2.2.7 In 1127, the site area became part of the Bishop of Winchester's manor and came to be known as the Liberty of the Clink, after the Bishop's infamous prison. The area was also located within the parish of St. Saviour's Church (now Southwark Cathedral). Owing to its proximity to London and its lax regulations, the riverfront 'stews' developed into a series of inns, gambling dens and brothels. Maid Lane (now Park Street) to the south possibly owes its name to the brothels along the riverfront. The river channel to the east would have silted up by this time leaving deep alluvial deposits in this south-eastern area of the site.
- 2.2.8 Work at Millennium Bridge, north of the site, revealed a sequence of timber revetments, of which the earliest activity was thought to be of c12th-century date. At 37–67 Bankside, excavation exposed the tops of at least three parallel east–west revetments which were of possible late medieval (and post-medieval) date.
- 2.2.9 The first recorded attempts of land reclamation around the site date to the 14th century and were probably as a response to rising river levels. At this time, revetments or dykes were constructed along the line of Upper Ground and Belvedere Road, to the northwest of the present site. The embankment also appears to have formed the common way between Lambeth and Bankside. Most of the land was marginal, although gradually drained and developed for agriculture.
- 2.2.10 A medieval sword has been found within the site area and evidence of late medieval activity has also been found on the site, in the form of a well, wall, piling and dumps of 16th century date.

Post-medieval

- 2.2.11 The Bishops of Winchester retained possession of a triangle of ground at the western end of the Clink Liberty abutting north on the river and adjoining on Holland Street (formerly Gravel Lane, i.e. the boundary of Paris Garden Manor) to the west and on Fletcher Lane (formerly Love Lane) on the east. This area of land forms the western area of the site.
- 2.2.12 By the 16th century development was spreading south from the riverfront and the garden plots of residential houses, which lined the frontage of Bankside, were situated over the northern part of site at this time. By the 17th century, the site lay in a large field which was known as 'Pye Garden', which may have been the remains of ponds where pike were bred.
- 2.2.13 The centre of the site was open ground and the areas around the site which had not already been built over were extensively cultivated and a number of drainage

channels were utilised. This open land was probably given over to grazing, orchards and market gardening.

- 2.2.14 Rocque's map of 1746 (Fig 2) shows the area had developed considerably since the 17th century and the industrial focus of the area is clear. The area of the proposed site development lies over a number of properties. The western area lies over the Peacock brewhouse and Cockpit Court, which may have been associated with the Glassworks that lie just to the north. In a History of Southwark published in 1714 Peacock brewery is described as having "been for a considerable number of years the property of Mr Benjamin Cape. It was established upwards of forty years since by a Mr Whitaker who had been a waterman and the trade was afterwards carried on under the firm of Whitaker and Yates for about twenty years from that period it has been held by the present possessor with increasing respectability" (Concanen and Morgan, 245).
- 2.2.15 The eastern area lies over the southerly part of Pye Garden and south of an industrial timber yard.
- 2.2.16 From the late 18th century, commercial and industrial premises and tenements rapidly developed the area as can be seen on Horwood's map of 1799 (Fig 15). Excavations at Hopton Street, to the west of the site, recorded the presence of a series of 18th–19th century glasshouses/kilns. By the later 19th century, the site was more extensively covered by structures, including the Phoenix gas works, an engineering works, white lead works, saw mills and a timber yard, buildings and yards associated with Phoenix Wharf, stables and an iron yard in the north-west, as well as a number of residential tenements which were located over much of the remaining site area.
- 2.2.17 By the 1950s, the Bankside Electricity Works was located on the position of the Tate Modern. Construction and minor changes continued on the site of the power station until it ceased operation in 1982.

3 The watching brief

3.1 Field methodology

- 3.1.1 All archaeological excavation and recording during the watching brief was done in accordance with the WSI (Mills Whipp Projects, 2010), the Method Statement (MOLA, 2010) and the Archaeological Site Manual (MoLAS, 1994).
- 3.1.2 The ground was broken out and cleared by contractors under MOLA supervision. The trenches for the rain water harvesting tanks and manholes and infiltration tanks were excavated by machine by the contractors, and monitored by a member of staff from MOLA.
- 3.1.3 The locations of the areas of excavation were recorded by offsetting from setting out points on drawing no RUK-DR-C-5122-C-230 Rev:T02 (MACE). This information was then tied into the OS grid by the MOLA Geomatics Team. .
- 3.1.4 The heights of observations were recorded relative to Ordnance Datum via a TBM, at 4.5m OD, which was situated on the hoarding on the site's southern boundary. Other TBM values were set by the engineering team during the archaeological monitoring and used by the MOLA team to establish heights on the archaeological deposits and features.
- 3.1.5 The site records can be found under the site code TMB09 in the MoL archive.

3.2 Recording methodology

- 3.2.1 A written and drawn record of all archaeological deposits encountered was carried out in accordance with the Written Scheme of Investigation, Mills Whipp Projects, 2010).

3.3 Site archive

| | |
|----------------------------------|----------------------|
| Number of trench record sheets | 2 |
| Number of overall location plans | 1 |
| Number of Context (SU) sheets | 103 |
| Number of photographs | 271 prior to sorting |
| Number of Plan sheets | 10 |
| Number of Sections | 7 |

4 Results of the watching brief

For area and/or trench locations see (Fig 2)

For feature plans see relevant areas discussed

- 4.1.1 The footprint for the rain water harvesting tanks were excavated as one trench and is shown on Fig 2 as watching brief area 1. Four square pits were excavated for the manholes and these have been number consecutively and are shown on Fig 2 as watching brief areas 2 to 5.

4.2 2012 watching brief area 1

| 2012 watching brief area 1 | |
|---------------------------------------|---|
| Location | Approximately 5m to the north-east of the Holland Street frontage in the south-western area of the site |
| Dimensions | 13.75m x 10m x 3m in depth |
| Modern ground level/top of slab | 4m OD |
| Base of modern fill/slab | 2.46m OD |
| Depth of archaeological deposits seen | 1.5m |
| Level of base of deposits observed | 1mOD |
| Natural observed | 1.28m OD |

- 4.2.1 At the base of the trench was [1111], a sticky mid bluish grey alluvium which became browner towards the east. This was the top of the natural alluvial sequence. It contained occasional pebbles, wood fragments with lenses of small riverine mollusc shells and patches of organic material. In the top of [1111] were found occasional fragments of pottery. The pottery, dates from 1550 to 1650, is Surrey Hampshire boarder ware with green and yellow glaze and London area red ware with a green glaze.
- 4.2.2 Sealing the alluvial sequence were three layers [1120], [1110] and [1140]. Layer [1120] was seen in the north-east facing section (Fig 3) was a moderately compact mid grey pebbly silt which contained occasional animal bone and small cbm fragments. It was 0.22m thick at the southern end of the trench and the top of the layer was recorded at 1.38m OD. Layer [1110] was recorded in the south facing section (Fig 4) in the central area of the trench. It was a moderately compact dark grey brown sandy silt which contained occasional late 17th century glass and pottery fragments. The glass included a 'pull' or a hollow curved cylinder of glass waste. The pottery from this layer, which has a date range of 1670–1690, includes London tin glazed ware, Surrey Hampshire Borderware white ware with yellow glaze and Essex type redwares.
- 4.2.3 The top of this layer was recorded at 1.06m OD. To the north of [1110] was [1140], this was a moderately compact layer of very dark brown/black sandy silt with white flecks. It contained frequent pebbles, occasional oyster and mussel shells and occasional pottery fragments.
- 4.2.4 All these three layers appeared to have been deliberately dumped in order to consolidate wet and marshy ground.
- 4.2.5 Above layer [1120] was [1131], a moderately sticky dark grey brown sandy silt with ash and cinder lenses, occasional pottery fragments, animal bone, oyster and frequent pebbles. It was not recorded in section 2 (Fig 3) as it was masked by

- [1122] in cut [1141].
- 4.2.6 When an additional 0.5m on the western side of the trench was removed by machine it was seen that [1131] was cut by [1119]. [1131] was 0.8m thick and the top recorded at 2.10m OD.
- 4.2.7 Cut [1119] was the foundation cut for a square brick structure [1112]. The bricks used in its construction have a date from between 1600–1700. At the base of the [1119] was fill [1118], which formed the bedding layer for brick structure [1112]. The bedding layer consisted of soft very dark grey sandy silt with large wood fragments directly below the wall [1112]. The wall [1112] was a square soakaway or cess pit. It was constructed from unfrogged reddish mottled bricks bonded by hard creamy lime mortar. The pit measured 1.8m across and 1m deep. It was backfilled with [1146], a soft light grey brown very fine silt which contained moderate large granite sets. It appeared to be a uniform deposit tipped into [1112] when the area was levelled at the end of the 19th century. The fill was very similar to [1122] which filled a robber cut [1141] which denoted the position of a wall which abutted the north side of pit [1112].
- 4.2.8 On the southern side of [1112] was a floor [1115] and its make-up layers [1116] and [1117]. The make-up layer [1117] consisted of a 0.24m thick layer of redeposited brickearth. It was sealed by [1116] a moderately compact layer of cbm fragments and sandy silt. Above [1116] was a brick floor [1115] set against the southern side of [1112]. The floor was constructed from a single course of bricks and was recorded at a height of 1.93m OD.
- 4.2.9 Two sections of brick wall ([1113] and [1114]) were recorded along the southern limit of excavation but their relationship with [1112] is not certain.
- 4.2.10 Above the natural alluvial sequence in the central and eastern areas of the site was [1106] (*Fig 4*). It was a moderately compact dark grey sandy silt and contained frequent cbm, pottery, animal bone, oyster and clay tobacco pipe fragments. The cbm (ceramic building material) from [1106] has a date range of 1550–1700. One fragment of 18th century clay tobacco pipe from [1106] bears the maker's mark 'AA' moulded in relief on the sides of the heel. Layer [1106] also contained a nearly complete mallet bottle and a complete glass slightly conical shaped phial. The 18th century pottery from layer [1106] is predominantly post-medieval redwares and tinglazed wares with occasional Surrey Hampshire borderware and Staffordshire slipware. The layer also contained delftware and stoneware production waste.
- 4.2.11 The top of layer [1106] was recorded at 2.02m OD. In Section 1 (*Fig 4*), [1106] was found below [1105], a moderately compact laminated/banded mid grey sandy silt. It contained occasional 18th century clay tobacco pipe fragments, moderate tin glazed pottery dated 1700 to 1730, oyster shells, small cbm fragments, moderate grit and occasional rounded pebbles. Like layer [1106], layer [1105] also contained delftware and stoneware production waste, including in the form of stoneware saggars (the common Green 532 types) for firing tankards (Green 1999, 188–94).
- 4.2.12 Layer [1105] was truncated by a construction cut [1147] and was sealed below brick floor [1104]. The construction cut contained wall [1107] and appears to have been associated with internal brick floor surface [1104]. The brick floor is constructed from bricks which have a date range of 1500–1700. It was very similar to floor [1115] recorded in the south-western corner of the trench. In section (*Fig 4*), wall [1107] and floor [1104] were below a sequence of robbing, pitting and dumping ([1101], [1102], [1103], [1109] and [1121]) associated with the site's clearance in the late 19th century.
- 4.2.13 A north–south wall [1108] may have been associated with, or part of the same building as, [1107] but the relationship between these two structures had been removed by a concrete pile.
- 4.2.14 Above dump deposit [1110] towards the north end of the trench was [1125], a loose

- dark grey sand silt with lenses of clinker and ash. It contained moderate small cbm fragments including a fragment of crucible, a fragment of tinglazed pottery and the base of a glass phial, similar to the complete example found in layer [1106].
- 4.2.15 This layer is probably the same as layer [1133] (see Section 4 (Fig 5) which was found sealing layer [1140] at the northern end of the trench. Layer [1133] was a sticky very dark grey sandy silt which contained occasional pot (tinglazed wares and stoneware dating to 1630–1650), cbm, oyster shell fragments and frequent pebbles.
- 4.2.16 Above dump layer [1125] was [1128] and [1142]. [1128] was a NE–SW foundation cut containing brick wall [1127]. [1142] was a NW–SE foundation cut containing brick wall [1135]. Foundation cut [1142] and wall [1135] are contemporary with, and part of the same structure as, foundation cut [1143] and SE–NW aligned wall [1134].
- 4.2.17 Foundation cut [1143] was cut into dump layer [1133]. Also cutting into dump deposit [1133] was foundation cut [1145] and wall [1144]. This wall was recorded in the north-western corner of the trench (Fig 6). The wall survived to a height of 1.3m (the top of the wall was at 3.5m OD). It was constructed from mottled yellow and red unfroged bricks.
- 4.2.18 In the central area of the site was foundation cut [1128] (Fig 7) . It was linear in plan and at least 1.1m deep. It contained a north-east–south-west aligned wall [1127] which was constructed from red unfroged bricks (dating from 1600–1700) bonded by soft grey mortar with black speckles.
- 4.2.19 Wall [1127] was associated with a brick floor [1124], which appears to be contemporary with brick floor [1104]. The bricks used in the construction of [1124] date from 1600–1700. The brick floor [1104] had been resurfaced with a skim of mortar [1136] and both [1136] and brick floor [1124] were sealed below [1126] a layer of loose black/very dark grey brown cinders and sandy silt. This layer contained frequent grit and pebbles, occasional small cbm fragments and patches of sticky dark grey clay, occasional 18th century pottery and clay tobacco pipe fragments, oyster shells and bone fragments.
- 4.2.20 Mortar floor [1136] was also partially sealed by [1132], a sticky very dark brown sandy silt which contained frequent pebbles, moderate fragments of glass making waste fragments, pottery fragments and occasional animal bone and clay tobacco pipe stems.
- 4.2.21 The loose black/very dark grey brown dumped layer of cinders and sandy silt [1126] contained a fragment of clay tobacco pipe that bears that maker's mark "B."
- 4.2.22 Cutting through the dump deposit [1126] was a circular cut for a well (Fig 8). The cut, [1139], was 1.8m in diameter and of unknown depth as it extended beyond the limit of excavation. It was lined by a single course of bricks [1138]. The bricks were broken and whole re-used soft red unfroged bricks dating from 1600–1700. It is not certain if the brick structure was a well or cess pit but it was backfilled with [1137] a very sticky mid brown sandy silt with clay and brick earth patches that contained moderate pebbles and frequent pot, the pottery seems to have been placed in stacks. A fragment of clay tobacco pipe from [1137] bears that maker's mark "T.B."
- 4.2.23 The walls [1113], [1114], [1134], and [1135] and [1144] appear to relate to the first phase of building on the site.
- 4.2.24 Walls [1108], [1107] and [1129] appear to relate to a second phase of building on the site.

4.3 2012 watching brief area 2

| 2012 watching brief area 2 | |
|---------------------------------------|-----------------------|
| Location | To the south of WB1 |
| Dimensions | 3m x 3m x 3m in depth |
| Modern ground level/top of slab | 4mOD |
| Base of modern fill/slab | 2.46mOD |
| Depth of archaeological deposits seen | 1.5m |
| Level of base of deposits observed | 1m OD |
| Natural observed | 1.28m OD |

- 4.3.1 The natural alluvial clay deposit [1111] was recorded at the base of the watching brief area. This area was excavated prior to the site visit on the 30th January 2012. The alluvium was sealed by dark dump deposits similar to those seen in WB1.
- 4.3.2 A brick arched culvert was encountered by the miners digging the heading shaft c1m to the south of the heading entrance under the pavement of Holland Street. The bricks were crumbly red unfrosted bricks and appeared to be 18th century in date although they may have been reused in a later structure.

4.4 2012 watching brief area 3

| 2012 watching brief area 3 | |
|---------------------------------------|--|
| Location | Approximately 4m to the north-east of the Holland Street frontage in the south-western area of the site To the west of WB1 |
| Dimensions | 3m x 3m x 3m in depth |
| Modern ground level/top of slab | 4m OD |
| Base of modern fill/slab | 1.6m OD |
| Depth of archaeological deposits seen | N/A |
| Level of base of deposits observed | 1m OD |
| Natural observed | 1.4m OD |

- 4.4.1 The natural alluvial deposit at the base of the trench ([1111]) was sealed by a stiff very dark grey silty clay [1148] which contained approximately 20% organic flecks and fragments was found at 2.6m below ground level. This alluvial deposit appeared to be a channel fill but given the confines of the watching brief area this was not proven.
- 4.4.2 Deposit [1148] was sealed beneath a 20th century concrete cellar floor recorded at c 2.3m below ground level. The cellar had been backfilled with rubble.

4.5 2012 watching brief area 4

| 2012 watching brief area 4 | |
|---------------------------------------|--------------------------|
| Location | To the north west of WB3 |
| Dimensions | 3m x 3m x 1.5m in depth |
| Modern ground level/top of slab | 4m OD |
| Base of modern fill/slab | N/A |
| Depth of archaeological deposits seen | N/A |
| Level of base of deposits observed | 2.5m OD |
| Natural observed | N/A |

- 4.5.1 Watching brief area 4 was machined to approximately 1.5m below ground level. No archaeological remains were found in this area.

4.6 2012 watching brief area 5

| 2012 watching brief area 5 | |
|---------------------------------------|--------------------------|
| Location | To the north-east of WB4 |
| Dimensions | 3m x 3m x 1.5m in depth |
| Modern ground level/top of slab | 4mOD |
| Base of modern fill/slab | N/A |
| Depth of archaeological deposits seen | N/A |
| Level of base of deposits observed | 2.5m OD |
| Natural observed | N/A |

- 4.6.1 WB5 was excavated by a machine to c1.5m below ground level. No archaeological remains were found in this area of the site.

4.7 2015 watching brief area – Staff Garden

| 2015 watching brief area – Staff Garden | |
|---|----------------------------|
| Location | On south-east side of site |
| Dimensions | 10m x3m x 0.50m deep |
| Modern ground level/top of slab | 3.86m OD |
| Base of modern fill/slab | 4.60m OD |
| Depth of archaeological deposits seen | N/A |
| Level of base of deposits observed | 2.58m OD |
| Natural observed | N/A |

- 4.7.1 A trench was excavated by a machine to 0.50m below ground level. No archaeological remains were found in this area of the site. The area was extensively cut through by modern services (Fig 8).

4.8 2015 watching brief area 6

| 2015 watching brief area 6 | |
|---------------------------------------|---|
| Location | To the west of the gallery building to the north of WB1 |
| Dimensions | 9m x 4.5m x 3.22m in depth |
| Modern ground level/top of slab | 5.05mOD |
| Base of modern fill/slab | 3.27mOD |
| Depth of archaeological deposits seen | 0.77m |
| Level of base of deposits observed | 2.50mOD |
| Natural observed | Not seen |

See (Fig 9)

- 4.8.1 The northern and southern areas of the trench were truncated by modern disturbance. At the base of the central area of WB6 was a 0.8m thick make-up layer of soft mid yellowish brown sand and mortar [1228]. The top of the layer was found at 2.63mOD (2.42m bgl). The layer, which extended beyond the limit of excavation, contained occasional cbm, pottery and chalk fragments.
- 4.8.2 Towards the south [1228] was much more compact than to the north. This change in compaction correlates to the line of the construction cut [1226], the construction cut for wall [1224]. Wall [1224] was constructed from mid orangey red unfroged bricks

bonded by a light yellowish grey loose sandy mortar. The wall survived to a height of 0.72m and was orientated north-east–south-west. The compact nature of the southern part of [1228] suggests that this was an internal floor surface or a bedding layer for a floor surface that had been removed by later truncation.

- 4.8.3 Towards the northern end of the trench layer [1228] was sealed below an external dump deposit [1227]. It was a 0.25m thick soft dark greyish brown clayey silt containing occasional ctp and moderate cbm fragments that abutted the outer face of wall [1224]. The top of [1227] was 2.88mOD (2.17m bgl).
- 4.8.4 Wall [1224] had been severely truncated by modern disturbance and had been truncated by cut [1225], the construction cut for wall [1223]. Wall [1223] was a probable 18th century construction built from red and yellow stock bricks bonded by a mid-grey mortar.

4.9 2015 watching brief area 7 – Tank 1

| 2015 watching brief area 7 – Tank 1 | |
|---------------------------------------|--|
| Location | On the southern side of the site close to the Sumner Street frontage |
| Dimensions | 21.85 x 16.5m x 4.2m in depth |
| Modern ground level/top of slab | 4.20mOD |
| Base of modern fill/slab | 2.70mOD |
| Depth of archaeological deposits seen | 1.55m |
| Level of base of deposits observed | 0.20mOD |
| Natural observed | 1.15mOD |

See (Fig 10) for all archaeological features.

- 4.9.1 At the base of the watching brief area were natural alluvial clays. The alluvial deposits were excavated to a depth of 0.0mOD at the western end of the watching brief area.
- 4.9.2 Cutting the natural alluvial deposits at the base of Tank 1 was a 0.55m wide post-medieval ditch [1242] running east–west on the northern side of the watching brief area. The ditch, the top of which was recorded at 1.15mOD (3.05m bgl), was 9.5m in length and extended beyond the limit of excavation to the west and was cut by modern truncation to the east. It was filled by [1241] a dark grey/black organic silty clay containing occasional small animal bones, cbm, oyster shell fragments and a copper alloy pin. The fill, which was 0.3m thick (the base of the fill was recorded at 0.85mOD), was sealed beneath a disturbed clay layer [1240].
- 4.9.3 To the east of ditch [1242] was a ditch [1252]. It was 4.25m long (east–west) and 1.75m wide and approximately 0.88m deep. The top of [1252] was recorded at 1.5mOD (2.7m bgl) and the base at 0.68mOD (3.52m bgl). The fill, [1251], was a soft, loose dark grey brown organic clay and contained occasional animal bone and cbm fragments and very similar to [1241], the fill of [1242]. It appears that [1252] is part of, or a recut of, ditch [1242] although this relationship has been removed by a 19th-century foundation.
- 4.9.4 In the central area of the watching brief area, approximately 3m to the south of, and parallel to, ditch [1242], was a rectangular post-medieval pit [1250]. The pit measured 1.65m x 1.2m x 0.9m in depth. The top of [1250] was recorded at 1.5mOD (2.7m bgl). Within the pit were two rectangular posts ([1244] and [1245]) and evidence of four other rectangular post holes ([1246], [1247], [1248], and [1249]). These appear to be the remnants of a timber lining to the pit. The pit was filled by a soft dark greyish brown clay silt which contained occasional small animal bone, oyster shell and wood fragments and moderate glass (cullet) fragments and other industrial waste. The fill of the pit was also sealed beneath clay layer [1240].

- 4.9.5 The disturbed clay layer [1240] consisted of a dark brownish grey silty clay. This layer contained frequent fragments of cbm and occasional fragments of pottery, glass and ctp. Cutting [1240] was the construction cut [1239] for wall [1238]. Wall [1238], of which only two courses survive, was constructed from orangey red unfrogged bricks bonded with a loose mid yellowish brown sandy mortar.
- 4.9.6 A 0.8m thick layer of soft mid yellowish brown sand and mortar [1228] was found at the base of the watching brief area in the footprint of Tank 1. Layer [1228] was sealed beneath [1227], a soft dark greyish brown clayey silt. This layer appeared to be a consolidation layer. It was cut by [1226], a construction cut for wall [1224].
- 4.9.7 Wall [1238] was truncated by [1237] the construction cut for a c19th century culvert or drain [1236].
- 4.9.8 Cut [1233] was the construction cut for a double culvert /drain [1232]. Drain [1232], aligned north–south, was constructed from 18th-century purple red unfrogged bricks bonded by a pale grey soft mortar. It took the form of a double channel and appeared to diverge beyond the southern limit of excavation. The fill of the western channel [1231] was a soft brownish orange sandy silt/cess, while the fill of the eastern channel [1234] was a soft dark blueish grey clay silt which contained frequent small fish bones, and occasional fragments of charcoal. This difference in the fills' colour, compaction and composition would suggest that they were deposited from different sources.
- 4.9.9 A later 19th-century drain [1229], constructed from frogged yellow stock bricks, was found 2.8m to the west of, and running parallel to, drain [1232]. Drain [1229] was 0.6m wide and over 6m in length. The drain was aligned north–south but had a distinct curve towards the east at the north end where it was truncated by modern disturbance.

4.10 2015 watching brief area 8

| 2015 watching brief area 8 | |
|---------------------------------------|---------------------------|
| Location | Southern area of the site |
| Dimensions | 10m x 8m x 2m |
| Modern ground level/top of slab | 3.50mOD |
| Base of modern fill/slab | 3.10mOD |
| Depth of archaeological deposits seen | 1.5m |
| Level of base of deposits observed | 1.6mOD |
| Natural observed | 1.6mOD |

See (Fig 11), (Fig 12) & (Fig 13)

- 4.10.1 At the base of the watching brief area in the footprint of the area was alluvial brown grey clay [1207] found at 1.6mOD (1.9m bgl) (Fig 11). This appears to be the same deposit as recorded in the Tank 1 area. A copper coin recovered from [1207] is corroded and illegible, but thought to be late 17th or 18th century in date, lying at the interface with the overlying post-medieval levelling dump [1219]
- 4.10.2 The top of the alluvial sequence was sealed beneath [1219] a crushed mortar and chalk consolidation layer recorded at 1.85mOD. Above [1219] were make-up layers [1218] and [1206]. Layer [1218] was a mid brown sandy silt with frequent pebbles and up to 0.3m thick.
- 4.10.3 Cutting [1206] was construction cut [1213] (Fig 12). This was the construction cut for wall [1205] a brick wall, which along with [1204] formed part of an 18th-century brick building found on the southern edge of the watching brief area. The top of [1204] was seen in section at 0.4m bgl (3.1mOD). A brick floor [1203] was found at 1.2m bgl (2.30mOD) and appeared to be associated with wall [1204]. It is not certain how this brick structure relates to the 'L' shaped wall [1212] found 4m to the north at 1.40mOD but the [1204] and [1212] appear to be orthogonally aligned and may

have formed part of the same building.

- 4.10.4 The truncated 'L' shaped wall measured 1m north-south x 1.75m east-west. The east-west section of [1212] was two bricks wide while the north-south aligned wall was a single brick wide. The north-south aligned wall may form part of an ancillary structure or an internal divisions within a larger building (Fig 13).
- 4.10.5 Brick floor [1203] was sealed by a 0.1m thick layer [1202] over which was [1201]. [1201] was found below a 0.6m thick layer [1200].
- 4.10.6 The corner of a masonry building recorded on the western edge of the watching brief area was set at an oblique angle to walls [1204], [1205] and [1212]. Wall [1208] and the return wall [1210] were found at 1.2mbgl. On the inside of the building was a single brick wide internal dividing wall and the remnant of internal floor [1211] found at 1.12m bgl constructed over consolidation layer [1218]. Above floor was [1217] which formed the bedding layer for a mortar floor [1216]. Sealing floor [1216] was a very dark brown ashy silt layer ([1215]) containing fragments of cbm. This was found below [1200].
- 4.10.7 Approximately 2m to the north-east of wall [1208] was a rectangular pit [1222], the base of which was found cutting the natural alluvial deposit [1207] at 2.85m bgl. No finds were present in the primary pit fill [1221]. The fill above [1220] contained pottery dated to c 1550-1600 and a small fragment of iron slag.

4.11 The finds

4.11.1 These notes concern finds previous to the 2015 watching brief.

4.11.2 Building materials

A total of 28 fragments of building material were recovered from TMB09 (contexts [7], [10], [13], [18], [30]). These comprised of 24 peg tile fragments, 1 brick, 1 piece of slate roofing, and 2 pieces of reused roman tile.

Listed below is a summary of the building material in each context:

| Context | Fabric | Type | Date |
|---------|--------|---------------|-----------|
| [7] | 2815 | ? | 50-160 |
| [10] | 2271 | Peg Tile | 1180-1800 |
| | 2273 | Peg Tile | 1120-1220 |
| | 2586 | Peg Tile | 1150-1800 |
| | 2587 | Peg Tile | 1240-1450 |
| | 2815 | Tegula | 50-160 |
| | 3115 | Stone Roofing | 300-1900 |
| [13] | 2271 | Peg Tile | 1180-1800 |
| | 2586 | Peg Tile | 1150-1800 |
| | 2587 | Peg Tile | 1240-1450 |
| [18] | 3032 | Brick | 1750-1900 |
| [30] | 2271 | Peg Tile | 1180-1800 |
| | 2586 | Peg Tile | 1150-1800 |

The building materials fabrics and forms for TMB09 give a medieval to post-medieval date. Fabrics 2271 and 2586 are hard to date exactly, as they were in use from the mid/late 12th century through to the end of the 18th. However, they are found associated with some quite definitely medieval tile fabrics which may indicate a late medieval date for these particular fragments. The single brick from context [18] of fabric 3032 had sharp edges, which allows an accurate date of 1750-1900. The building materials seem to be in keeping with the accelerated development of

the area around the site during the medieval and post-medieval periods.

4.11.3 Decorated tin-glazed floor tile

Context [124] <24> Fabric: 2196

The pattern on this tile is something of an oddity. It appears to show the bottom-left corner of a medallion tile, which a green ground area surrounded by a circular yellow and blue border. An area of brown may represent part of an animal, which are common motifs in the centre of medallion tiles. Dogs were particularly popular. In this respect the TMB09 tile is similar to many English and Dutch medallion tiles made in the late 16th–mid 17th century. Where it differs is having blue and white corner decoration more characteristic of tiles with the central scene set in a diamond shaped border. In the Netherlands this corner decoration dates to around 1570–1630 (Pluis 1997, 541, C.01.00.04; van Dam 1991, 28-29, nos 15–16). Similar tiles were made in London around the same period (Betts and Weinstein in prep).

4.11.4 An interesting feature of the TMB09 tile is that it is kiln 'waster'. The pattern on the top surface is blurred and the glaze is very uneven in places. It seems highly unlikely that such a tile would have been brought in from the Netherlands, so it was almost certainly made in London. Tiles with the same corner decoration (but with diamond shaped borders) were made at Pickleherring, Southwark sometime in the period c 1618-1650 (Tyler et al 2008, 55, D13), but it is also possible it is an earlier Aldgate product dating to the period 1570 to c 1615 or c 1620 (Tyler et al 2008, 8).

4.11.5 Chimney / flower pot

Context [107] Fabric: 2587

What may be either a flower or chimney pot was found in context [107] associated with pottery dated 1780–1820. It is approximately 360mm in diameter and made from reddish-orange clay. The fabric type (2587) suggests it may have been made somewhere in the London area.

4.11.6 A total of 17 fragments of building material were recovered from TMB09 (contexts [+], [1104], [1106], [1112], [1124], [1136] and [1138]). These comprise 14 brick samples, two pieces of an unusual plaster/lime deposit and what may be reduced and part burnt daub.

4.11.7 Listed below is a summary of the building material in each context:

| Context | Fabric | Type | Date |
|---------|------------------------|-------|----------------|
| [+] | Plaster / lime deposit | ? | ? |
| [1104] | 3046, 3065 | Brick | 1500–1600/1700 |
| [1106] | 3046 | Brick | 1550–1700 |
| [1112] | 3046 | Brick | 1600–1700 |
| [1124] | 3039, 3046 | Brick | 1600–1700 |
| [1136] | 3102? | Daub? | ? |
| [1138] | 3042, 3046 | Brick | 1600–1700 |

4.11.8 Most of the building material collected from the site comprises brick samples. These are from brick floors (contexts [1104] and [1124]), a brick cesspit or soak away (context [1112]), a brick lined well (context [1138]) and dumping (context [1106]). Most of the bricks are probably of 17th century date, although the brick from one of the floors ([1104] may be 16th century. Unfortunately, the latter are damaged and abraded so precise dating is difficult. There is a brick with a sunken margin from the second brick floor ([1124]) and a possible example from the brick lined well ([1138]). These are probably pre-1666.

4.11.9 A note of caution is need when discussing the dating of the brick features on the site. Although the dates given are correct for the bricks, these do not necessarily date the brick features themselves. Bricks were frequently reused in later structures although there is no firm evidence, in the form of later mortar or brick types, for

reuse of any of the TMB09 bricks.

The other building material from the site comprises what appears to be a partly burnt daub like material and what could be layered deposits of plaster or lime. Neither can be dated.

4.11.10 **Glass**

The bulk glass retrieved in 9 contexts ([1105]–[1140]) from this, the third phase of excavation on this site, contained 36 bottle and phial vessels reconstructing from as many fragments (2718g). Evidence of nearby glass manufacturing was also found.

4.11.11 The bottles and phials are common late 17th- to mid 18th-century types made in any of the numerous glasshouses once located in this part of London. Most are wine bottles of the mallet and onion forms, including a nearly complete mallet bottle in [1106], with natural green and natural green-blue coloured cylindrical phials with their customary high pointed kick bases and flat-topped rims also frequent here. A complete phial was recovered in [1106]; this vessel is slightly conical shaped.

Located in contexts [1110], [1132], [1133] and [1140] was a small quantity of both identifiable and anomalous glass waste fragments that can be sometimes be matched to the excavations nearby at Benbow House, Bankside and to John Baker's glassworks in Vauxhall. The first in [1110] appears to be a 'pull', a hollow curved cylinder, with [1132] and [1140] containing waste in the form of 'gull' slag and finally [1133] yielding a 'trail'.

4.11.12 **Pottery**

4.11.13 **Methodology**

The pottery from this site was examined macroscopically, using a binocular microscope (x 20) where appropriate, and recorded on paper and computer, using standard Museum of London codes for fabrics, forms and decoration. The numerical data comprises sherd count (SC), estimated number of vessels (ENV) and weight (by grammes) and was entered onto the ORACLE database.

4.11.14 **Medieval pottery (c 900–1500)**

This text considers the medieval pottery present in five of the 13 contexts with pottery from the archaeological evaluation at TMB09. Comprising just 32 sherds from 23 vessels (ENV) and weighing a total of 247 grammes, Table 2 demonstrates a relatively even chronological spread of 13th–14th-century activity (as measured by sherd count by context). However, with all of this material from small-sized groups (contexts containing between one and 29 sherds) and some apparently residual - medieval pottery was found mixed with post-medieval dated pottery in contexts [12] and [28] - its further potential and significance remains limited. Table 1 helps define the condition of this assemblage, which demonstrates that as an average, there are low number of sherds, vessels and overall weight present per context. Most of the medieval pottery was found from just one context [13] (24 sherds), though it should be noted that two sherds of post-medieval pottery are also present.

4.11.15 *Table 1 Medieval pottery by statistical averages per context*

| No. of contexts | Total no. of sherds/ENV | Average no. of sherds (per context) | Average no. of vessels (per context) | Average pottery weight (per context) |
|-----------------|-------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| 5 | 32/23 | 6.4 | 4.6 | 85.4 grammes |

4.11.16 **Fabrics and forms**

This section considers the fabrics found with Table 2 (below) dividing the medieval pottery into the three following categories by ware type: local glazed wheel-thrown wares, Surrey whitewares and wheel-thrown coarsewares.

Table 2: Ware types for the medieval pottery found from TMB09 by sherd count,

ENV and weight

| Ware type | No of sherds | No of sherds as % | ENV total | ENV total as % | Weight (in grammes) | Weight (as %) |
|---------------------------------|--------------|-------------------|-----------|----------------|---------------------|---------------|
| Local wheel-thrown glazed wares | 6 | 18.8% | 6 | 26.1% | 94 | 26.1% |
| Surrey whitewares | 25 | 78.1% | 16 | 69.6% | 293 | 68.6% |
| Wheel-thrown coarsewares | 1 | 3.1% | 1 | 4.3% | 40 | 9.4% |
| Total | 32 | 100% | 23 | 100% | 427 | 100% |

4.11.17 The medieval pottery from this site is dominated by Surrey whitewares which in turn has implications for the chronology of the recorded landuse. Providing 25 sherds or 78.1% of the total medieval assemblage, the Surrey whitewares found in this context are predominantly Kingston-type (KING) and coarse border wares (CBW). Representing the early 13th-century product of this industry, the most frequent fabric is Kingston-type ware (KING), a white-fired, wheel-thrown, sandy earthenware and one of the main types of pottery used and found in London during the medieval period (Pearce and Vince 1988, 6). When no rim is present to determine precise form, and the bases/lower profiles of vessels have only survived, those internally glazed examples of KING have been recorded as bowls/dishes, or when sooted, as jars/cooking pots. Characterised by a hard, coarse, sandy, buff-coloured body and far less use of glaze or decoration, CBW was ideal for kitchen and storage vessels and was made in a wide range of forms, and is therefore important in defining any mid to late 14th-century landuse applied. Though the later variants of the Surrey whiteware industry, Cheam whiteware (CHEA), is represented by just the one sherd in this context, it is responsible for the mid 14th-century date applied to context [13].

4.11.18 The statistical information presented in Table 3 displays the terminus post-*quem* and ante-*quem* dates per context by sherd count for the medieval pottery. Though this material is dated between c 1240 and 1500, Table 2 displays a clear cluster, with late 13th and 14th-century dated pottery dominating this sequence, largely reflecting the ware type and fabric composition of context [13].

*Table 3 Terminus post-*quem* and ante-*quem* dates of contexts with medieval pottery by sherd count*

| | TAQ | | | |
|-------------|------|------|------|-------------|
| TPQ | 1350 | 1400 | 1500 | Grand Total |
| 1240 | 5 | | | 5 |
| 1270 | 2 | | 1 | 3 |
| 1350 | | 24 | | 24 |
| Grand Total | 7 | 24 | 1 | 32 |

4.11.19 Post-medieval (c 1500–1900)

This text considers the post-medieval pottery retrieved in 11 contexts ([1], [12], [13], [15], [16], [17], [20], [24], [25], [28], and [29]) from the archaeological evaluation at TMB09. It evaluates the character and the date range of the assemblage, determines the research questions this material can address while identifying areas of further work. Comprising 217 sherds from 134 vessels and weighing a total of 9160 grammes, most of the pottery was retrieved in contexts [15] and [16], both of which contained medium-sized pottery groups (contexts yielding between 30 and 99 sherds) that supply 147 sherds and 77 vessels.

Table 4 Post-medieval pottery by statistical averages per context

| No. of contexts | Total no. of sherds/ENV | Average no. of sherds | Average no. of vessels | Average pottery weight (per |
|-----------------|-------------------------|-----------------------|------------------------|-----------------------------|
| | | | | weight (per |

| | | | | |
|----|---------|---------------|---------------|-------------|
| | | (per context) | (per context) | context) |
| 11 | 217/134 | 19.5 | 12.1 | 832 grammes |

Table 4 presents an assemblage that was retrieved in a relatively good condition, with the high total weight of pottery per context (832 grammes) reflecting the quantities of early 20th-century dated stoneware ginger beer bottles found in contexts [15] and [16] (which contained reconstructable profiles and large-cross joining sherds). Larger sized sherds and/or cross-joining vessels are otherwise represented in contexts [1] and [17], with the remainder of the contexts with post-medieval pottery characterised by fragmented rim, bases and body sherds.

4.11.20 Fabrics and forms

Table 5 demonstrates that the post-medieval pottery found can be broken up into nine categories by broad sources of supply: British made stonewares. Essex made 'fine' red earthenwares, imported wares (Continental), industrial finewares, London made 'coarse' red earthenwares, London made tin-glazed wares, non local earthenwares, and Surrey-Hampshire border wares.

Table 5: Ware types for the post-medieval pottery found from MCF06 by sherd count, ENV and weight

| Ware type | No of sherds | No of sherds as % | ENV total | ENV total as % | Weight (in grammes) | Weight (as %) |
|---------------------------------------|--------------|-------------------|-----------|----------------|---------------------|---------------|
| British made stonewares | 125 | 57.6% | 51 | 38.1% | 5572 | 60.8% |
| Essex made 'fine' red earthenwares | 5 | 2.3% | 5 | 3.7% | 166 | 1.8% |
| Imported wares: Continental | 2 | 0.9% | 2 | 1.5% | 58 | 0.6% |
| Non local earthenwares | 3 | 1.4% | 2 | 1.5% | 200 | 2.2% |
| Industrial finewares | 7 | 3.2% | 7 | 5.2% | 46 | 0.5% |
| London made 'coarse' red earthenwares | 28 | 12.9% | 27 | 20.1% | 1530 | 16.7% |
| London made tin-glazed wares | 20 | 9.2% | 17 | 12.7% | 570 | 6.2% |
| Kiln furniture | 1 | 0.5% | 1 | 0.7% | 41 | 0.4% |
| Surrey-Hampshire border wares | 26 | 12% | 22 | 16.4% | 977 | 10.7% |
| Total | 217 | 100% | 134 | 100% | 9160 | 100% |

4.11.21 Though much of this material is derived from just two contexts ([15] and [16]) and is dated to the early 20th century, the remaining pottery from [1], [12], [17], [20], [24], [25], [28], and [29] supplying a generally consistent 17th-century date to the landuse from which it was found. The 17th-century dated contexts are largely characterised by Surrey-Hampshire border wares, London made tin-glazed wares and coarse red earthenwares and supplemented by Continental imports. Most common among these groups are the either undecorated (PMRE) or slipped (PMSRG and PMSRY) decorated products of London red earthenware industry. Made in production centres located on the south bank of the Thames, notably at Woolwich, these are often found here in carinated bowls and dish forms.

4.11.22 Another common ware type to this site are the developed white- and red Surrey-Hampshire border wares first made in the mid 16th century, and which came to play a major part in London's pottery supply between c 1550 and 1700. The whitewares in 16th-century contexts have either clear or green glaze (BORDY and BORDG), and greatly outnumber redwares (RBOR) made at the same centres at this date. The border industry was one of the most versatile in southern England during the early post-medieval period, producing a considerable number of different vessel forms suitable for a very wide range of domestic functions. Among the better

preserved examples retrieved is the profile and handle from a bedpan in RBOR from [17], though much of the remainder of these wares more fragmented, often base sherds, largely identified as dishes and porringers.

4.11.23 London made tin-glazed wares are largely represented by early to mid 17th-century decorated examples (TGW A and TGW D) with plain undecorated wares (TGW BLUE) also present. The best surviving examples are the complete base and lower profile of a large-sized mid 17th-century cylindrical jar blue painted decoration from context [17] and the charger from context [25] decorated with the 'daisy pattern' (Noël Hume 1977, 47) and an external clear lead glaze (TGW A). Perhaps surprisingly, given this particular sites Bankside location and its once close proximity to a number of tin-glazed ware pothouses, is the near absence of factory waste and biscuit wares from this industry.

However, what characterises this pottery assemblage is the large quantity of early 20th-century English stonewares derived from contexts [15] and [16]. Indeed, such is the similarity in dating and composition of this material is that any chronological differences that might have been inferred between these contexts can now be discounted. The vast majority of the forms are ginger beer bottles with either cork, internal screw, or crown corked closures. The only variation is the small hole incorporated into the lip of a ginger beer bottle from [16] identified by Askey (1998, 87) as a Gatlee More closure. The only other difference in form and closure are the three Bristol glazed stout bottles from [16] with crown cap closures. Overall, dating for both contexts is provided by the manufacturing stamps belonging to either Lovatt & Lovatt and Bourne & Eastwood: here the presence of two numerals reading 02, 05 and 07 on three examples relates to practice of marking the year of manufacture during the first half of the 20th century (ibid 75). The majority of the bottles have black printed retailer labels (1870s plus) with the most common derived from one C Butcher of Chatham, though other identifiable labels include ginger beer made by Francis Drake of New Glasgow, Nova Scotia (Canada) and the lower profiles from two bottles from a Rochester based retailer (thought to be the Rochester in Kent rather than Canada) which have the figure bust of a female present.

4.11.24 Table 6 demonstrates that whilst contexts with post-medieval pottery are dated c 1480–1930 most of the sequence is clustered either to the 17th or early 20th century. Within the earliest c 1480–1650 sequence are examples of the London made 'coarse' red earthenware category. Only contexts [15] and [16] which contained the ginger beer bottles provide the potential for further analysis.

Table 6 Terminus post-quem and ante-quem dates of contexts with post-medieval pottery by sherd count

| | TAQ | | | | | Total |
|-------|------|------|------|------|------|-------|
| TPQ | 1650 | 1680 | 1700 | 1900 | 1930 | |
| 1480 | 2 | | | | | 2 |
| 1600 | | | | 2 | | 2 |
| 1630 | 33 | 19 | 12 | | | 64 |
| 1670 | | | | 2 | | 2 |
| 1907 | | | | | 147 | 147 |
| Total | 35 | 19 | 12 | 4 | 147 | 217 |

4.11.25 This note concerns pottery assessed in the second phase pre-2015.

No medieval sherds were identified and the pottery considered here consists entirely of post-medieval fabrics and forms recovered from 10 contexts. Two of these are of medium size (with between 30 and 100 sherds), one is large ([117]), with more than 100 sherds, and the rest are small (with fewer than 30 sherds in each). The condition and makeup of the pottery in the large context is consistent with short-term disposal of domestic waste. The remaining material consists of a mix of domestic and industrial (ceramic production) waste. Some sherds in the more

friable fabrics, particularly tin-glazed ware, have suffered from burial with consequent loss of glaze and abrasion of surfaces.

- 4.11.26 A total of 304 sherds from a minimum of 203 vessels (13286 g) from ten contexts were recorded. The dating and quantification are presented in Table 1.

| Ctxt | ED | LD | Size | SC | ENV | Wt |
|--------------|------|------|------|------------|------------|--------------|
| 100 | 1880 | 1900 | M | 33 | 26 | 1727 |
| 104 | 1812 | 1900 | S | 1 | 1 | 62 |
| 107 | 1820 | 1830 | S | 15 | 14 | 524 |
| 112 | 1641 | 1700 | S | 19 | 2 | 543 |
| 113 | 1807 | 1830 | S | 4 | 2 | 48 |
| 117 | 1770 | 1780 | L | 170 | 101 | 8324 |
| 121 | 1630 | 1680 | S | 9 | 9 | 183 |
| 124 | 1630 | 1680 | S | 5 | 5 | 186 |
| 128 | 1630 | 1680 | M | 44 | 39 | 1558 |
| 129 | 1630 | 1680 | S | 4 | 4 | 131 |
| Total | | | | 304 | 203 | 13286 |

Table 1: dating and quantification of post-medieval pottery (SC = sherd count; ENV = estimated number of vessels; weight is in grams)

- 4.11.27 There are no contexts dating before c 1630, which is consistent with the breakdown of fabrics and forms in each, with little obvious evidence for chronological contamination in most contexts. No medieval or 16th-century pottery was identified. The material can be broken down into three main periods of deposition: the first is focused in the middle decades of the 17th century and includes production waste from nearby pothouses making tin-glazed ware; the second dates to the end of the 18th century and the third to the mid to late 19th century.

- 4.11.28 Contexts [121], [124], the medium-sized [128], [129] and [112] all date to between c 1630 and 1680. Context [112] includes one sherd from a tripod pipkin in Surrey-Hampshire border ware (BORDY) and 18 sherds from a Bartmann jug in Frechen stoneware (FREC). The Bartmann was probably thrown away freshly broken since it is largely reconstructable. It is also dated. The applied medallion bears the second half of the date [16]41 and the initials AC above a shield, providing a good TPQ for the context. In the remaining contexts dated to the 17th century, tin-glazed ware and associated production waste predominate. The Bankside area of Southwark was home to many pothouses making tin-glazed ware or delftware and the waste from these factories is spread far and wide on sites excavated along the south bank of the Thames. Overall, tin-glazed wares account for 67.9% of all sherds in contexts dated to the 17th century (84.7% ENV), with kiln furniture and biscuit delftware coming to 44.4% of all sherds in the same contexts (54.2% ENV). The kiln furniture consists of fragments from saggars, used to hold vessels during firing, and part of a shelf with spreads of glaze. Forms in biscuit delftware (the first stage of a twice-fired fabric) include jars, bowls, a mug and porringer. There are also two joined bowl sherds from a fused firing stack, with blue-painted decoration. The remaining tin-glazed ware consists of forms with plain white glaze or painted decoration (blue and white or polychrome) typical of the mid 17th century. Whether these are also factory rejects is uncertain. However, given the small proportion of other wares associated with these finds, it is possible that they were not in everyday domestic use. The only other pottery found at this date in the contexts assessed here are Surrey-Hampshire border ware (both white- and redware), post-medieval fine redware (PFR) and

black-glazed ware (PMBL), all represented by only one or two sherds each.

4.11.29 The large context [117] is a key group, closely datable to c 1770–80 and representing large-scale dumping of domestic waste over a short period. The breakdown of main fabric types is given in Table 2. The most common of these are factory-made refined earthenwares and stonewares, consisting largely of teawares (teabowls, saucers, teapots and their lids), plates and other dining wares, with creamware (CREA) and white salt-glazed stoneware (SWSG) the most numerous fabrics. Various popular styles of dinner plate with moulded rim decoration are included and there are also sherds and some of the creamwares also have coloured glazes typical of the mid to late 18th century. There are only two sherds of pearlware (PEAR), introduced c 1770, which suggests a date in the last quarter of the 18th century rather than later when these wares are far more common. Together, factory-made refined wares account for more than 50% of all pottery in context [117]. Other decorative wares include teabowls, saucers and plates in Chinese porcelain with both blue-painted (CHPO BW) and coloured enamel decoration (CHPO ROSE). Delftware is reserved for more utilitarian forms such as drug jars and chamber pots, although there are also sherds from plates with simple blue-painted decoration. Surrey-Hampshire border ware is represented by multi-purpose domestic forms, such as handled bowls that could be used in the kitchen or as chamber pots. There is also a complete small pipkin with solid curved handle in red border ware (RBOR). There is only one form in London-area redware (PMR) – the base of an industrial vessel of unknown function, with a characteristic stepped profile. English brown salt-glazed stoneware (ENGS) and Nottingham stoneware (NOTS) are also well represented, with sherds from a number of bottles, mugs and jugs, the NOTS examples bearing engine-turned decoration. Part of a slop bowl in English soft paste porcelain may have been made at Bow, but is so badly encrusted that the decoration is completely obscured. There are also 14 sherds from a chamber pot in Westerwald stoneware (WEST), imported from the Rhineland; it has moulded rampant lion medallions around the body and two holes drilled at the top of the handle to secure a lid.

| Type | SC | % SC | ENV | % ENV |
|-----------------------------------|------------|---------------|------------|---------------|
| Surrey-Hampshire border ware | 18 | 10.6% | 9 | 8.9% |
| Delftware | 15 | 8.8% | 12 | 11.9% |
| English stoneware | 10 | 5.9% | 6 | 5.9% |
| English porcelain | 1 | 0.6% | 1 | 1.0% |
| Imports - continental | 14 | 8.2% | 1 | 1.0% |
| Imports - oriental | 19 | 11.2% | 9 | 8.9% |
| Factory-made refined earthenwares | 45 | 26.5% | 29 | 28.7% |
| Factory made fine stoneware | 43 | 25.3% | 31 | 30.7% |
| London-area redware | 1 | 0.6% | 1 | 1.0% |
| Slipware | 4 | 2.4% | 3 | 3.0% |
| Total | 170 | 100.0% | 101 | 100.0% |

Table 2: breakdown of main ceramic types from context [117]

4.11.30 The remaining pottery recorded comes from three small contexts dated to the early to mid 19th century ([113], [104] and [107]), and one of medium size dated c 1880–1900+ ([100]). Factory-made refined wares predominate – CREA, PEAR and refined white earthenware (REFW), with sherds of yellow ware (YELL) and Sunderland-type coarseware (SUND). There is more evidence for chronological contamination in these later groups, with odd sherds of residual 17th- and 18th-century fabrics present. This is apparent in context [100], which largely dates to the mid 19th century but includes a sherd from a stoneware ginger beer bottle with Bristol glaze (ENGS BRST) and a transfer-printed label (..CO STONE GINGER BEER), typical of

the last quarter of the 19th century. The context also includes a sherd with handle from a large Montelupo oil jar (MLOJ), of the kind commonly seen in use standing outside shops as signs, and as used to carry oil from northern Italy on board ship.

4.11.31 Pottery from the third phase pre-2015

The post-medieval pottery from the third phase of excavation on this site was retrieved in 13 contexts ([1105]-[1140]) which yielded 109 vessels (164 sherds; 9854g) with two deposits ([1105] [1106]) in particular containing well preserved groups. Consistently dated to the late 17th century to mid 18th century, with no residual or intrusive material present, the pottery therefore provides a secure chronological framework for interpreting the recorded landuse. The only variation to this sequence is the crockery in [1137] which largely comprised a range of late 18th-century blue transfer-printed pearlware teabowls and saucers in addition to a pearlware large oval plate with blue shell-edged rim decoration.

- 4.11.32 Like previous phases of excavation on this site, this assemblage included a mixture of domestic pottery in addition to production waste from a nearby stoneware and delftware pothouse, most likely Gravel Lane. The range of delftware biscuit ware forms (notably plates and chamber pots) and the stoneware saggars recovered - the common Green 532 types for firing tankards (Green 1999, 188-94) - are representative of manufacturing dated after the last quarter of the 17th-century. This evidence therefore conforms to the period when the Gravel Lane pothouse operated (1694-1748) and to the material retrieved from the recent excavations on this site (Antony, in prep).

Both 'finished' and production waste of London's delftware industry, together with the white and red fired products of the Surrey-Hampshire borders and coarse red earthenwares made in a number of production centres on the south bank of the Thames, are the main sources of supply represented in this assemblage. A largely intact delftware pedestal based salt in [1133] is the most unusual in an otherwise common group of vessel forms.

4.11.33 The clay pipes

4.11.34 Phase 1 pre-2015

The clay tobacco pipes from TMB09 were recorded in accordance with current MoLA practice and entered onto the Oracle database. The pipe bowls were classified and dated according to the Chronology of London Bowl Types (Atkinson and Oswald 1969) with the dating of some of the 18th-century pipes refined where appropriate by reference to the Simplified General Typology (Oswald 1975, 37-41). The prefixes AO and OS are used to indicate which typology has been applied. Quantification and recording follow guidelines set out by Higgins and Davey (1994; Davey 1997).

- 4.11.35 A total of thirty-seven clay pipe fragments were recovered during bore hole and evaluation trench probing at Bankside near Tate Modern in early June 2009. This total comprised seven bowls (two accessioned as marked) and thirty stems. The assemblage was fragmentary and stained. Each context with pipe fragments (from Bore Hole 1) yielded datable pipe bowls. Context [1] yielded a single type AO22 dated 1680-1710 and ten stems. Context [15] yielded a residual type AO15 (1660-80) and a residual AO18 (1680-1710) <1> marked AA for either Anthony Andrews (Arthur) 1694-1716 or Anthony Atkinson 1696. The context was pipe dated 1700-40 by two type OS10 bowls with <2> markedB. Eighteen stems were also present. Context [25] yielded a residual AO9 pipe dated 1640-60 and an AO15 dated 1660-80 plus two stems.
- 4.11.36 The clay pipes recovered from the watching brief range in date from 1640-1740. All were smoked and most were broken and stained. None were burnished and so not of a high quality. They appear to be products of local London makers.

4.11.37 Phase 2 pre-2015

A total of eight clay pipe bowls and one stem fragment were recorded in five contexts. All are accessioned; seven of the bowls and the stem have a maker's mark and one is unmarked but decorated. They range in date from the mid 18th to mid 19th century and all but one is typical of London manufacture (see Table 1).

| Ctxt | TPQ | TAQ | B | S |
|--------------|------|------|----------|----------|
| 100 | 1820 | 1840 | 3 | 1 |
| 104 | 1770 | 1800 | 1 | |
| 107 | 1780 | 1820 | 1 | |
| 117 | 1740 | 1800 | 2 | |
| 118 | 1780 | 1820 | 1 | |
| Total | | | 8 | 1 |

Table 1: breakdown of pipes by context

4.11.38 The earliest pipes are two type AO26 bowls (c 1740–1800) from context [117], which is dated by pottery to c 1770–80. Both are marked with the maker's initials IG moulded in relief on the sides of the spur. There are two type AO27 bowls (c 17780–1820), one each in contexts [118] and [107], the latter marked with moulded stars in relief on the sides of the heel and the former with more-or-less illegible initials. There is one imported clay pipe – a Dutch bowl found in context [104]. The large egg-shaped bowl is of the kind made after c 1770 and remaining common during the 19th century (type AD29: Atkinson 1972, fig 79). It is burnished and fully milled around the top of the bowl and has two maker's marks. The first of these consists of the shield of the city of Gouda (a major centre of clay pipe manufacture), with a letter S above. This stands for 'slegte' or 'ordinary' to denote the quality (ibid, 177). The marks are moulded in relief on the sides of the heel. On the base of the heel is a stamped mark in relief (ST), standing for the initials of the maker. Dutch pipes are relatively rare finds in excavated contexts from London so this is a noteworthy find.

4.11.39 The latest clay pipes come from context [100], which is dated to c 1820–40 by two type AO28 bowls, one of which has decoration in the form of moulded bunches of grapes, and the other has moulded flowers in relief on the sides of the heel. The former probably represents the name of a nearby public house. There is also an earlier type OS 11 pipe (c 1730–60), marked AH? in relief on the sides of the heel. The one stem fragment is marked ...N No 12.. moulded in relief. This would have been part of the maker's name and address, now missing.

Catalogue of marked pipes

| Ctxt | Acc | B | S | Form | ED | LD | Dec | Marks | Type | Meth | Pos |
|------|-----|---|---|------|------|------|------|---------------------|------|------|-----|
| 100 | 28 | 1 | | AO28 | 1820 | 1840 | | Flowers | R | M | SS |
| 100 | 25 | 1 | | AO28 | 1820 | 1840 | GRAP | | | | |
| 100 | 27 | 1 | | OS11 | 1730 | 1760 | | AH? | R | M | SH |
| 100 | 26 | | 1 | UNK | 1800 | 1910 | | ..N NO 12 | R | M | SL |
| 104 | 29 | 1 | | AD29 | 1770 | 1770 | | S/Gouda shield / ST | R | M | SH |
| 107 | 30 | 1 | | AO27 | 1780 | 1820 | | Stars | R | M | SH |
| 117 | 32 | 1 | | AO26 | 1740 | 1800 | | IG | R | M | SS |
| 117 | 31 | 1 | | AO26 | 1740 | 1800 | | IG | R | M | SS |
| 118 | 33 | 1 | | AO27 | 1780 | 1820 | | ?S | R | M | SH |

Table 2: marked clay pipes (Type: R = relief; Meth: M = moulded; Pos: SS = sides of spur, SH = sides of heel; SL = along stem)

4.11.40 Phase 3 pre-2015

Twelve clay pipe bowls and one stem fragment were recorded as part of the latest assessment. Four of the bowls have makers' marks and are accessioned, including one decorated pipe. The finds were recovered from five contexts (see Table 1).

| Ctxt | TPQ | TAQ | B | S |
|------|------|------|---|---|
| 1105 | 1700 | 1770 | 4 | |
| 1106 | 1700 | 1770 | 5 | 1 |
| 1126 | 1740 | 1800 | 1 | |
| 1133 | 1800 | 1840 | 1 | |
| 1137 | 1780 | 1820 | 1 | |

Table 1 breakdown of pipes by context

- 4.11.41 The earliest pipes come from contexts [1105] and [1106] and date to c 1700–70. These consist of four type AO25 pipe bowls from [1105] and five, one of them marked, from [1106], plus one stem fragment. The marked pipe <35> has the maker's initials AA moulded in relief on the sides of the heel, as yet unidentified. There is a single clay pipe heel from a bowl of type AO26 in context [1126], dating to c 1740–1800 (<36>). This is marked with the initials BA moulded in relief on the sides of the spur, again unidentified. A single pipe from context [1137] is dated to c 1780–1820 (type AO27), and is decorated with moulded vertical ribbing and foliate motifs along the sides of the stem close to the bowl. The heel has the moulded maker's initials TB in relief. These may stand for Thomas Brown, recorded in Peter Street, Westminster 1805–11.
- 4.11.42 The latest pipe is a type AO27a, dated to c 1800–40, from context [1133]. It is marked with the initials RL on the sides of the heel, which may stand for Robert Loder, recorded in Drury Lane 1832–56.
- 4.11.43 Most of the pipes have been smoked at least once, and all are typical of London manufacture.

| Ctxt | TPQ | TAQ | Acc | B | Form | ED | LD | Dec | Mark | Type | Meth | Pos |
|------|------|------|-----|---|-------|------|------|------|------|------|------|-----|
| 1106 | 1700 | 1770 | 35 | 1 | AO25 | 1700 | 1770 | | AA | R | M | SH |
| 1126 | 1740 | 1800 | 36 | 1 | AO26 | 1740 | 1800 | | BA | R | M | SS |
| 1133 | 1800 | 1840 | 37 | 1 | AO27A | 1800 | 1840 | | RL | R | M | SS |
| 1137 | 1780 | 1820 | 38 | 1 | AO27 | 1780 | 1820 | RIBV | TB | R | M | SH |

Table 2 marked and decorated clay pipes (Type: R = relief; Meth: M = moulded; Pos: SS = sides of spur, SH = sides of heel)

4.11.44 Registered finds

Phase 1 pre-2015

Excluding the ceramic, glass and rubber bottle stoppers and a ceramic stove tile there are three registered finds; two small pieces of ceramic kiln furniture and a fragment of white pipe clay (possibly a testing piece) from context [15] (<3>, <*>) and a small piece of ceramic crucible (<4>, context [17]).

- 4.11.45 The fragment of kiln furniture (<3>) is made from highly-fired refractory yellow/light orange-firing clay which is glazed (probably self-glazed) on three surfaces. It may have come from a kiln-shelf, or just possibly from a saggar (purpose-made vessels made for firing specific types of pottery; eg Green 1999, 180-7). It is oxidised and would have come from a kiln making oxidised wares (eg red earthenwares or tin-glazed wares). The context is 20th century, but contains residual late 17th- and early 18th-century pottery and tobacco pipes; there were many pottery kilns in the

Bankside area in the 17th and 18th centuries and the kiln furniture or saggar will also be this date. A small piece of shaped white pipe-clay blackened or sooted on one side may be a test piece, fired to (eg) test kiln temperatures.

- 4.11.46 The crucible fragment (<4>) is highly-fired stoneware with a brown glazed internal surface. The external surface is missing. It could be from a large crucible of a type made for making glass (eg Willmott in Tyler and Willmott 2005, 45); again there were 17th- and 18th-century glasshouses in this area of London. The pottery from the context is mid 17th-century.

4.11.47 Phase 2 pre-2015

The six metal finds consist of a plain copper alloy button (<14>, [107]), a ring (possibly a curtain-ring) (<16>, [117]) and four copper alloy coins or coin-like objects (possibly decorated buttons) (<13>, <15>, <16>, <17>).

- 4.11.48 There are four glass registered finds: a flask rim/neck (<19>, [100]), a jar rim/neck (<20>, [100]), a natural light green glass small bottle rim/neck (<*>, [112]) and part of a small drinking glass (<21>, [121]). The flask is made from quite thick opaque clear glass, probably early lead glass, with a faint marbled effect (from twisting); it is probably late 17th or 18th century. The jar is made from green glass, very weathered); the folded rim is uneven; it is also probably late 17th or 18th century. The bottle rim/neck is unusual; it is small (not a wine bottle) with a wide lid-seated rim and a slightly bulbous neck; a (bulk) wine bottle from the same context is dated c 1680–1700. The 18th century clear lead glass drinking vessel (a small wine or sherry glass) has a U-shaped bowl, a domed foot and a slightly irregular short waisted stem with an internal ‘teardrop’ which extends all the way through. All these vessels could be London products, possibly from Bankside glasshouses on or near the site.

- 4.11.49 There is a box of bulk glass (wine bottle and phial fragments) from three contexts: [100], [112], [117]. There are two pieces from green glass wine bottle from [100], one of which has a slightly bevelled string rim and is probably 18th century. The glass from [112] consists of three pieces from a near-complete small globe and shaft wine bottle with a round string rim; the bottle is dated (typologically) to c 1680–1700.

The glass from [117] is quite varied in form and date, and consists of glass from a minimum of four wine bottles and two large pharmaceutical phials. One of the wine bottles is a ‘square’ form with a short neck and collared rim, made from light green glass; it is probably mid to late 17th century (cf Noel-Hume 1969, 69 Fig 14). Another (body fragments only) is a cylindrical form with distinctive bluish-green glass, probably an import. Pieces from two or three darker green glass English wine bottles are 18th century: two bases from a mallet and a mallet or squat cylindrical bottle (c 1725–1775) and the rim/neck (with a bevelled single string rim) probably from another mallet or squat cylindrical bottle. There are also high-domed bases from two large light green/blue glass pharmaceutical phials which (high conical domes, size, possible rounded body of one of them) are probably late 17th or early 18th century.

4.11.50 Introduction

This note is concerned solely with the finds recovered during the 2015 watching brief on the site. Material from earlier interventions has been recorded separately.

4.11.51 Pottery

The pottery from the TMB09 2015 watching brief was spot-dated and recorded in accordance with current MOLA practice, using standard codes for fabric, form and decoration, with quantification by sherd count, estimated number of vessels (ENV) and weight in grams. The data were entered onto the Oracle database. A total of 32 sherds from a minimum of 31 vessels, weight 2441 g, were recovered from five

contexts, together with one unstratified sherd. This also includes seven newly recorded sherds (7 ENV, 1440 g) from a context ([1105]) that had been assessed in an earlier note (Jeffries 2012).

4.11.52 Date, fabrics and forms

Contexts [1220], [1240] and [1207] are all small, none of them yielding more than five sherds. They can therefore be only broadly dated on the basis of long-lived, widely available fabrics and forms to c 1550–1600, c 1550–1700 and c 1580–1700 respectively. These consist of London-area post-medieval redwares (PMRE and PMR, as well as the slip-coated PMSRY) and Surrey-Hampshire border whitewares (BORDG, BORDY) and redwares (RBOR). Forms include cauldrons and bowls or dishes in London-area redwares and a flanged dish and porringer in BORDG/BORDY, together with a dish in RBOR.

Context [1240] is slightly larger (13 sherds, 13 ENV, 437 g) and more closely datable to c 1720–50. This also includes part of a bowl in RBORDG and a possible jar base in PMR, as well as sherds from three jugs in Frechen stoneware (FREC), imported from the Rhineland c 1550–1700. Three sherds of tin-glazed ware with plain white glaze (TGW C) come from a porringer, a possible chamber pot and the base of a possible pedestal salt or candlestick. There are sherds from two large dishes in tin-glazed ware decorated in a style common during the mid 17th century (TGW D), with polychrome designs that include one based on oak leaves. A more unusual find is a rim sherd from a plate or dish in Central Italian maiolica (CITG), with stile calligrafico decoration. The latest pottery in this context is part of a bowl in white salt-glazed stoneware (SWSG), which was in production from c 1720 until the 1780s.

- 4.11.53 The additional sherds recorded from context [1105] include a near-complete chamber pot in BORDG, of the form made after the middle of the 17th and into the 18th century. It is glazed inside and out and is covered in residue appropriate to its function. There are sherds from one other chamber pot of the same form in BORD and one with brown glaze (BORDB). Part of a bowl in RBOR, and of a porringer in TGW C were also recorded, as well as the base of a teapot in refined red earthenware (REFR), which takes the date originally assigned to this context forward to c 1740–50. Context [1105] now includes 40 sherds from a minimum of 21 vessels, weighing 3443 g. The earlier record includes pieces of kiln furniture used in stoneware production (saggars) and biscuit tin-glazed ware; no further production waste was recorded in the latest material noted here. All other pottery from the 2015 watching brief is domestic in character.

The pottery recorded here mostly represents domestic waste disposal, but should be viewed as part of the total ceramic assemblage recovered from the site.

4.11.54 Clay tobacco pipes

The clay pipe bowls were identified according to Atkinson and Oswald's 1969 typology for London clay pipes (given the prefix AO). Recording follows current MOLA procedure, with the data entered onto the Oracle database.

- 4.11.55 Three pipe bowls and two mouthpieces were recorded. Two of the bowls come from context [1240], which is dated to c 1660–80 by a type AO15 pipe, one of the most common forms made during this period. It was found with a pipe bowl of type AO4, dating to c 1610–40, with a fully milled rim and overall burnishing of average quality. Two mouthpieces and part of a bowl of type AO25 were found in context [1105], and have been added to the pipes already recorded from this context without changing the date indicated by four more bowls of the same type. None of the pipe bowls is decorated or marked.

All pipes have been smoked and are typical of London manufacture.

4.11.56 **Glass**

Three fragments of post-medieval glass were recorded. Two of these consist of lumps of cullet or glass waste that could be recycled to make new items, from contexts [1200] and [1243]. Made in natural blue and natural green glass, these are impossible to date more closely than c 1650–2000, although they were probably deposited in the later 17th or 18th century. The complete rim of a small cylindrical phial in natural green glass was recorded in context [1207], and probably dates to c 1650–1700.

4.11.57 **Registered finds**

A single copper-alloy straight pin with wound wire head was recorded in context [1241] (<40>). It is 24mm in length, which is well within the average range for items of this kind, used for fastening clothing and in dressmaking. It probably dates to the 17th century. A corroded and illegible copper coin was recorded from context [1207] (<39>) and is thought to date to the 17th or 18th century.

4.11.58 **Building material**

A fragment of pantile roofing was recovered from this phase of TMB09. The pantile, from context [1240], can be dated to around 1630–1800. This agreed well with the associated pottery which is dated 1660–80. The fabric (2275) suggests the pantile is an import from the Netherlands. Large numbers of pantiles were brought into London during the mid 17th–early 18th century.

4.11.59 **Iron slag**

Three lumps of iron slag were recovered. This is probably smithing slag and may include part of a hearth base from context [1243] (which yielded two fragments, weighing 478 g). The other fragment is much smaller and comes from context [1220]. Ideally this material would be reviewed by a specialist in metalworking waste.

5 Archaeological potential

5.1 Answering original research aims

- 5.1.1 *What is the nature, elevation and depth below the existing ground surface of the natural geology?*
- 5.1.2 The top of the natural alluvial deposits were recorded across the watching brief areas at 1.28mOD to 1.40mOD.
- 5.1.3 *Are there indications of archaeological features at the surface and cut into the natural geology?*
- 5.1.4 No features were found cutting into the surface of the alluvial deposits. Finds found at the interface of the alluvial and overlying deposits all date from the later medieval period.
- 5.1.5 *What is the nature and date of the earliest deposits overlaying the natural ground surface?*
- 5.1.6 Finds found at the interface of the alluvial and overlying deposits all date from the later medieval period.
- 5.1.7 *What was the nature of the environment on site in the prehistoric period and is there evidence for activity on the site in this period?*
- 5.1.8 The watching brief did not produce evidence of any prehistoric activity.
- 5.1.9 *What was the nature of the environment on site in the Roman period and is there evidence for activity on the site in this period?*
- 5.1.10 The watching brief did not produce evidence of any Roman activity.
- 5.1.11 *At what point does the land become reclaimed from the river? How is this achieved?*
- 5.1.12 The earliest evidence of land reclamation dates from the early post-medieval period. The Agas map of 1572 (not illustrated) shows the site as open ground with a row of house to the north. Homogenous dump deposits were found sealing the alluvial sequence which date from the 1550–1700. These appear to be deliberate attempt to consolidate soft marshy ground in the 17th century. The earliest buildings on the site date from the late 17th/early 18th century.
- 5.1.13 *What is the nature and date of later deposits with respect to the medieval and post medieval landuse, especially indications for the leisure industry, domestic development and later industrial landuse in the area?*
- 5.1.14 John Stow in his Survey of London, first published in 1598 and reprinted in 1603, describes Bankside as “ a Place not over well built, or inhabited, except by some few dyers there seated for the conveniency of the water”. John Stow goes on to describe Cockpitt Yard as “with narrow passages falls into Gravel Lane [present day Holland Street], having in it only two glass houses. Love Lane hath a narrow passage to the Thames, hath one side taken up by a Carpenter's Yard, and the other by small Houses.”
- 5.1.15 The watching brief shows that the area appears to have been wet marshy ground until the 17th century when a series of buildings were constructed on the site.

Stow's account states that Holland Street was not very developed by the beginning of the 17th century and this is confirmed by the watching brief that found no structures pre-dating 16th century.

- 5.1.16 The ditch recorded in Tank 1 on the southern side of the site may be part of, or related to, the ditch shown on Rocque's map.
- 5.1.17 A rectangular pit, which originally had a timber lining, found in the southern area of the site may be associated with dying or tanning. The timber lined pit or tank is similar to those found on post-medieval tanner sites in Southwark such as 33 Tanner Street (site code VIY97), 20–30 Wilds Rents (site code WRX08), 169 Long Lane (site code LOL14) and more recently at 175–179 Long Lane (site code LLX15).
- 5.1.18 The dumped material used to consolidate ground prior to construction of buildings on the southern side of the site was found to contain industrial waste material including kiln furniture. Although the Great Suffolk Street pottery, situated at the junction of Lavington Street and Great Suffolk Street (c 225m to the south of the site), could have been the origin of this material, the nearby stoneware and delftware pothouse in Gravel Lane (now called Holland Street) seems the most likely source. The range of delftware biscuit ware forms (notably plates and chamber pots) and the stoneware saggars recovered (the common Green 532 types for firing tankards (Green 1999, 188–94)) are representative of manufacturing dated after the last quarter of the 17th-century. This evidence therefore conforms to the period when the Gravel Lane pothouse operated (1694–1748) and to the material retrieved from the recent excavations on that site (Antony, in prep).
- 5.1.19 Glass in the form of cullet recovered from features on the southern side of the site may have originated from the glassworks on the northern side of the site.
- 5.1.20 Rocque's mid 18th-century map (Fig 14), shows that the 2012 watching brief areas were situated close to the Peacock Brewery, just to the south of Cockpit Court and the glassworks. Horwood's map of 1799 shows the southern area of the site occupied by a row of terraced houses fronting onto Gravel Lane (now called Holland Street) with gardens at the rear. In the London Gazette of 1816, Peacock Brewery is described as "A leasehold estate consisting of a large yard enclosed by a gate, a brick-dwelling house, a vat house, stores houses and other buildings". The brick walls and floors found on the site seem to relate to this 18th-century activity.
- 5.1.21 The post-medieval structural remains recorded during the watching brief are shown on (Fig 15) in relation to Horwood's map of 1799.
- 5.1.22 The watching brief has shown that there are two distinct phases of building on the site during the 18th /19th century.

5.2 Answering new research aims

- 5.2.1 No new individual research aims have been raised.

5.3 Significance of the data

- 5.3.1 Whilst the archaeological remains are undoubtedly of local significance there is nothing to suggest that they are of regional or national importance.

6 Publication and archiving

- 6.1.1 The results of the watching brief will be made publicly available by means of a database in digital form, to permit inclusion of the site data in any future academic researches into the development of London.
- 6.1.2 The site archive containing original records and finds will be stored in accordance with the terms of the *Written Scheme of Investigation* (Mills Whipp Projects 2010) with the Museum of London Archaeological Archive within 12 months of the end of the watching brief.
- 6.1.3 In view of the limited potential of the material (Sections 5) and the relatively limited significance of the data (Section 5.3) it is suggested that a short note on the results of the watching brief should appear in the annual round up of the *London Archaeologist*.

7 Acknowledgements

- 7.1.1 The author would like to thank the following for their contributions and help in producing this report: the client, Tate Modern, Mills Whipp Projects and Gardiner & Theobald, as well as Mace, for their on-site support.

8 Bibliography

- Anthony, S, in prep *From pothouse to glasshouse 1694–1830: Excavations on Gravel Lane, Southwark, London*, Post-Med Archaeol.
- Askey, D, 1998 (1981) *Stoneware Bottles*, second edition, BBR publishing
- Atkinson, D R and Oswald, A, 1969 London clay tobacco pipes, *J British Archaeol Assoc* 32, 171–227
- Betts, I M, and Weinstein, R I, 2010, *Tin-glazed tiles from London*, London
- Chartered Institute for Archaeologists, (CIFA), 2014 *By-Laws, Standards and Policy Statements of the Chartered Institute for Archaeologists, Standard and guidance: watching brief*
- Chartered Institute for Archaeologists, (CIFA), 2014 *By-Laws, Standards and Policy Statements of the Chartered Institute for Archaeologists, Standard and guidance: the creation, compilation deposition and transfer of archaeological archives*
- Concanen, M, and Morgan, A, 1714, *The History and Antiquities of the Parish of St Saviour's Southwark*
- van Dam, J D, 1991 *Nederlandse Tegels*, Amsterdam
- Davey, P 1997 *Clay pipes from Bolsover church*, unpub archive rep
- Dept. of Communities and Local Government 2010, Planning Policy Statement 5, Planning for the Historic Environment
- English Heritage, 1991 *Exploring Our Past, Strategies for the Archaeology of England*
- English Heritage, 1991 *Management of Archaeological Projects (MAP2)*
- English Heritage Greater London Archaeology Advisory Service, 2014 *Standards for archaeological Work*
- English Heritage, May 1998 *Capital Archaeology. Strategies for sustaining the historic legacy of a world city*
- Green, C, 1999 *Fulham Pottery Excavations 1971–9*, English Heritage
- Higgins, D A and Davey, P 1994 *Draft guidelines for using the clay tobacco pipe record sheets*, unpub report
- Jeffries, N 2012, Note on the post-medieval pottery from Tate Modern, Bankside, London Borough of Southwark, SE1, MOLA unpubl assess.
- Mills Whipp Projects, 2010 *Transforming Tate Modern, London Borough of Southwark, SE1: Written Scheme of Investigation for archaeological watching brief during construction of crane bases*, unpublished Mills Whipp Projects report
- MOLA, 2008 Environmental statement Vol 1: Chapter 14 , Archaeology and Built Heritage, MOLA unpublished report

- MOLA, 2009 Transforming Tate Modern, Bankside, London SE1: An archaeological evaluation and watching brief report, unpublished MOLA report
- MOLA, 2010a Transforming Tate Modern, Bankside, London SE1: An archaeological watching brief report, unpublished MOLA report
- MOLA, 2010b Transforming Tate Modern, Bankside, London SE1: Method statement for an archaeological watching brief report, unpublished MOLA report
- MOLA, 2012a Transforming Tate Modern, Bankside, London SE1: An archaeological watching brief report, unpublished MOLA report
- MOLA 2012b Transforming Tate Modern, Bankside, London SE1: A report on the archaeological watching brief on the rain water harvesting tanks and associated manholes, unpublished MOLA report
- Museum of London, 1994 Archaeological Site Manual 3rd edition
- Museum of London, 2002 *A research framework for London archaeology 2002*
- Noël Hume, I, 1977 *Early English Delftware from London and Virginia*, Colonial Williamsburg, Occasional Papers in Archaeology, Volume II
- London Borough of Southwark, 1995 Unitary Development Plan, London
- London Borough of Southwark, 2007 Local Plan (adopted July 2007), London
- Oswald, A, 1975 *Clay pipes for the archaeologist*, BAR 14, Oxford
- Pearce, J, and Vince, A G, 1988 A Dated Type-series of London Medieval Pottery Part 4: Surrey Whitewares, *London and Middlesex Archaeol Soc Spec Pap 10*
- Pluis, J, 1997 *The Dutch tile: designs and names*, Leiden
- Ridgeway, V, 2000 Post-medieval glass manufacture at Hopton Street in Southwark, London Archaeol 9, no.4, 102–9
- Saxby, D, 2008 Bankside 4, 7–9 Holland Street and 118–120 Southwark Street London SE1, a report on the evaluation, unpublished MoLAS document
- Stow, J, 1603 *A Survey of the Cities of London and Westminster*
- Tyler, K, Betts, I and Stephenson, R, 2008 *London's Delftware industry*, MoLAS Monogr Ser 40
- Tyler K and Willmott H 2005, *John Baker's late 17th-century glasshouse at Vauxhall*, MoLAS Monograph 28

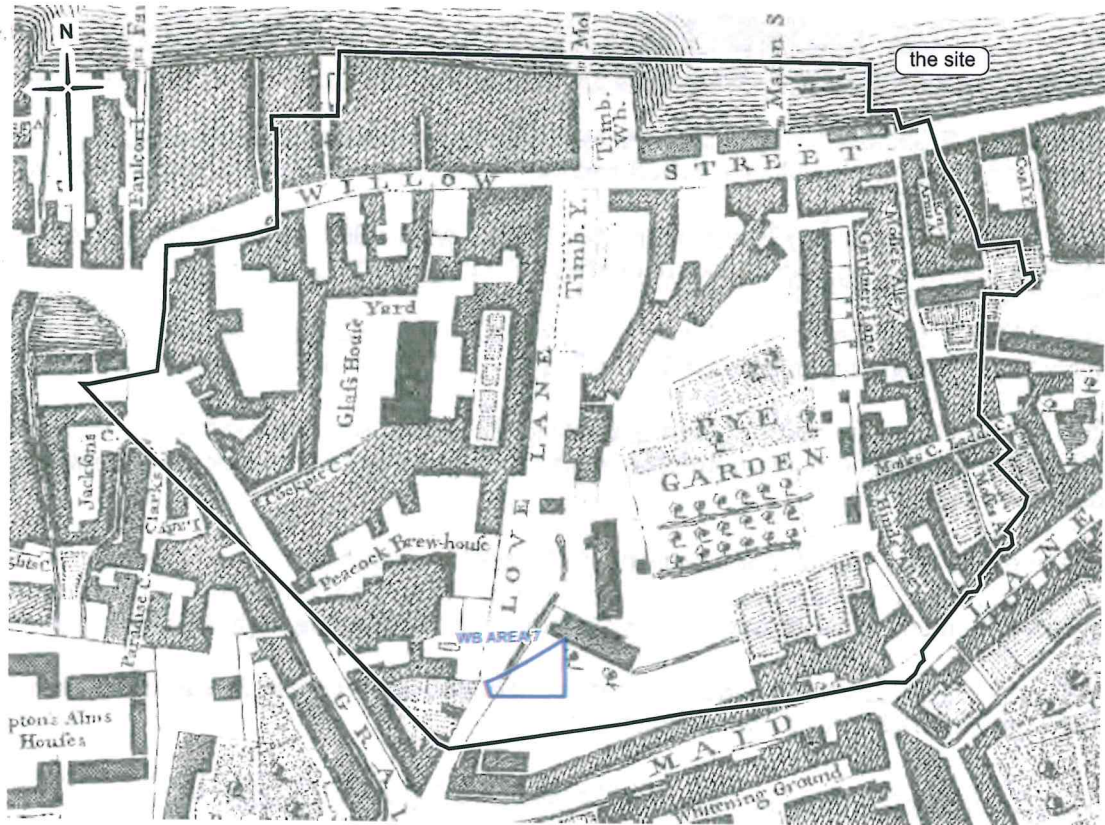


Fig 14 Rocque's map of 1746 showing location of Watching Brief Area 7

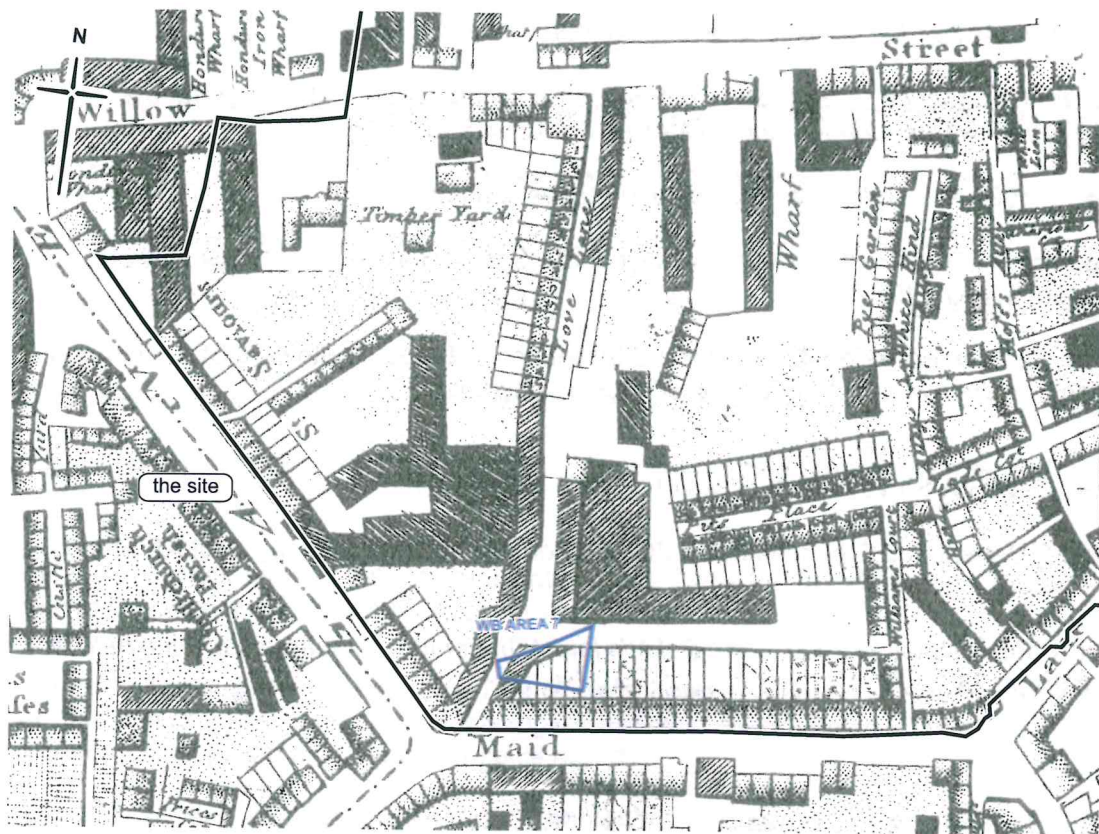


Fig 15 Horwood's map of 1799 showing the watching brief areas

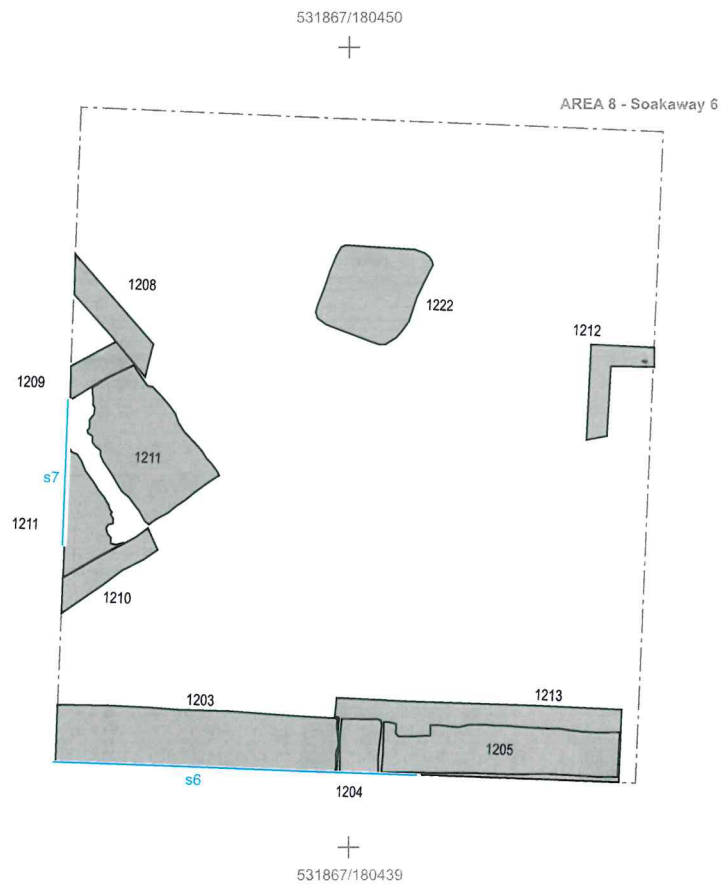


Fig 9 Plan showing the archaeological features in Watching brief Area 6

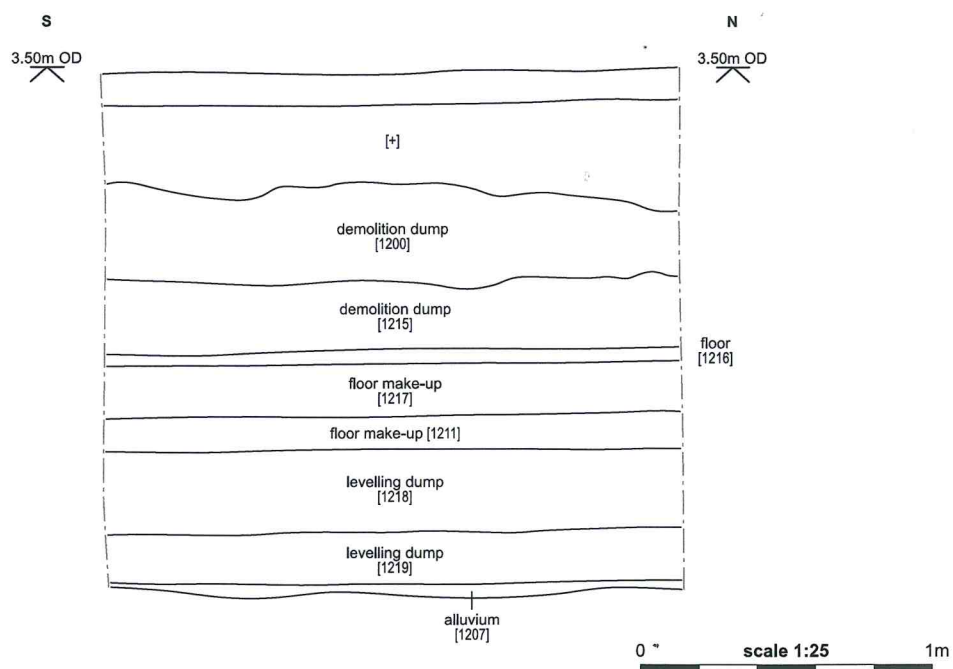


Fig 11 East facing Section 7 – Watching Brief Area 8 – Soakaway 6

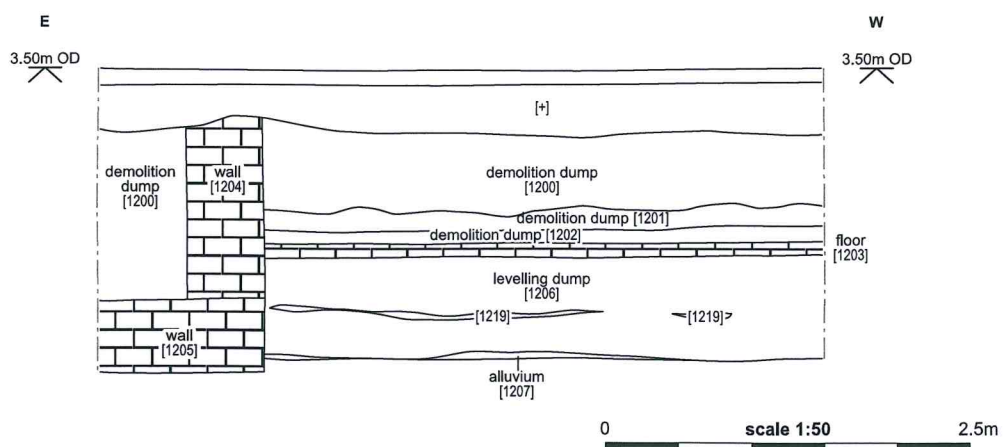


Fig 12 North facing Section 6 – Watching Brief Area 8 – Soakaway 6

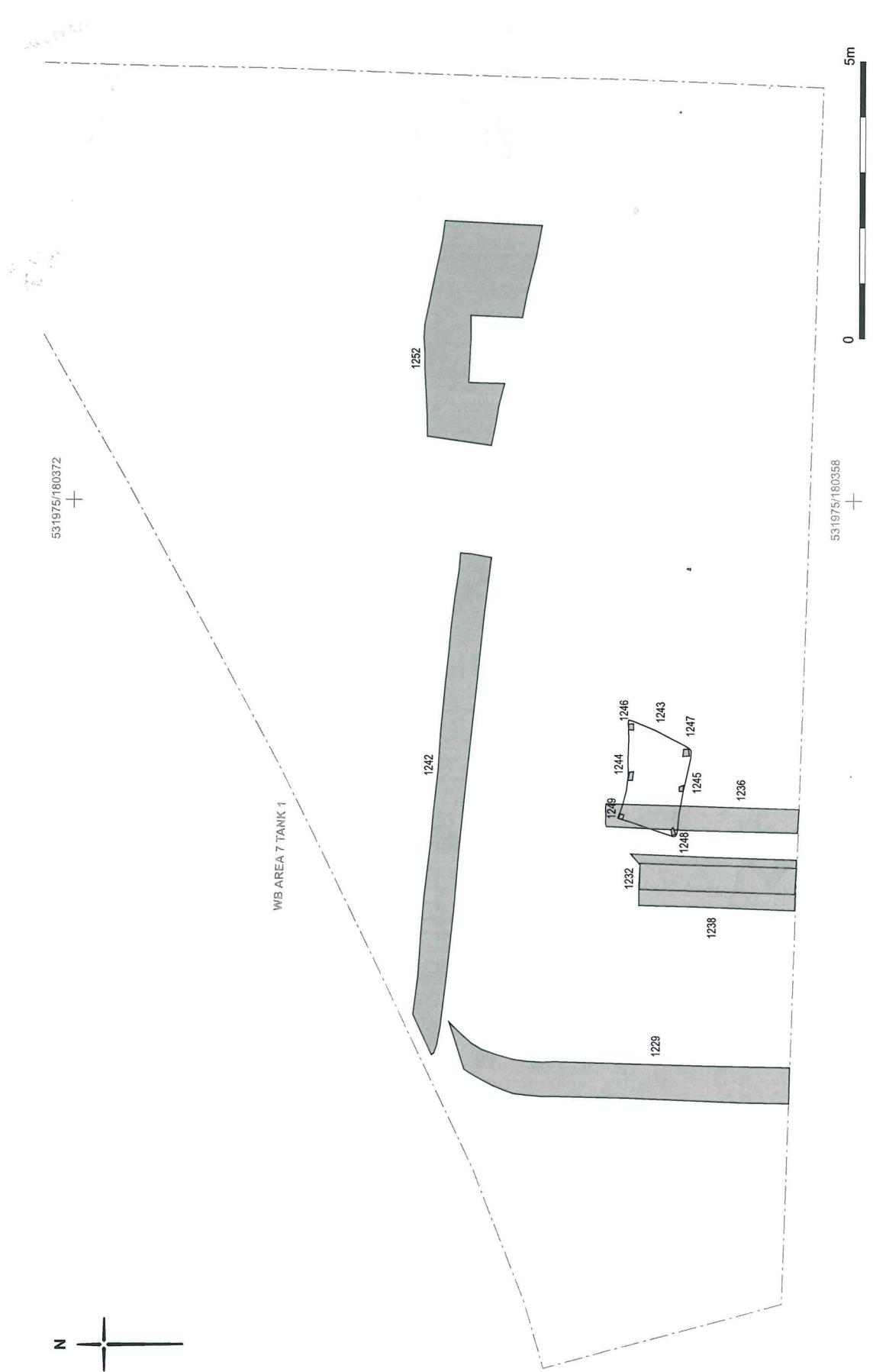


Fig 10 Plan showing archaeological features in Watching brief Area 7 – Tank 1

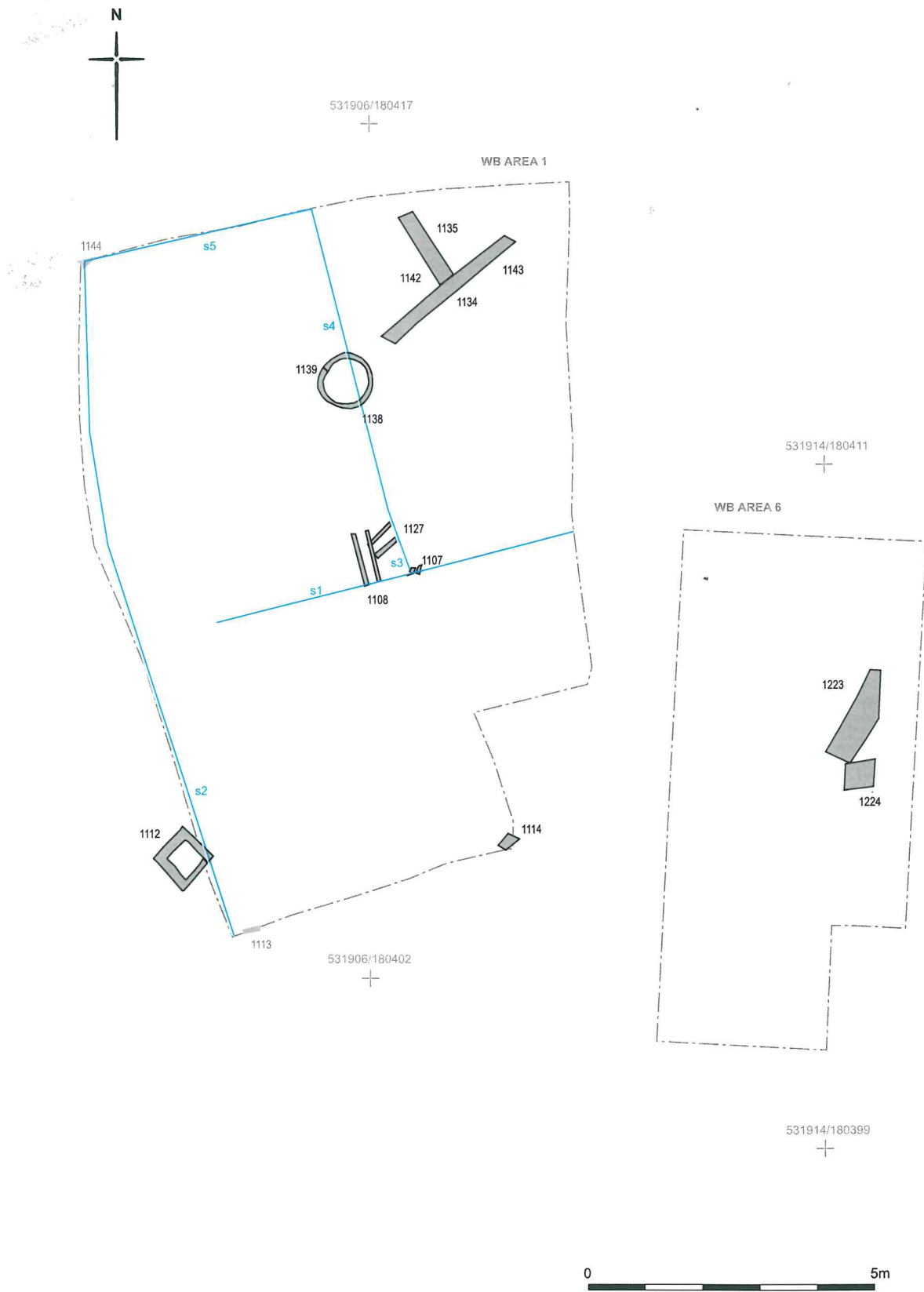


Fig 9 Plan showing the archaeological features in Watching Brief Areas 1 (left) and 6 (right)



Fig 8 Photograph of Staff Garden Area showing extent of truncation

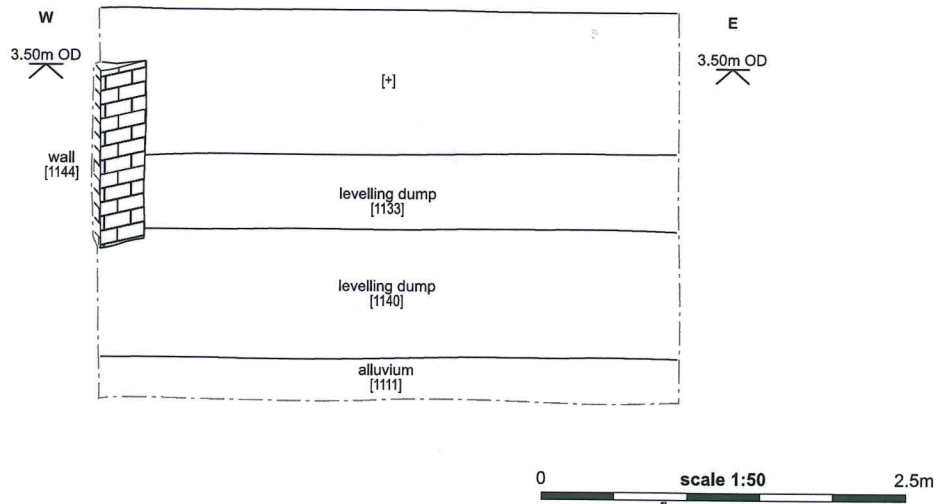


Fig 6 South facing Section 5 – Watching Brief Area 1

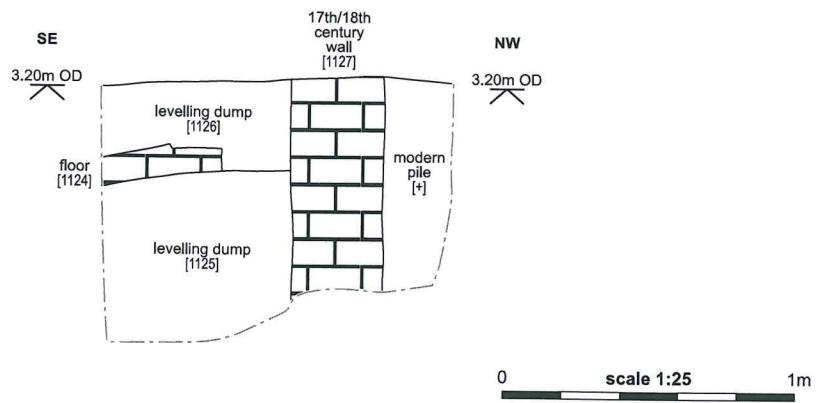


Fig 7 North east facing Section 3 – Watching Brief Area 1

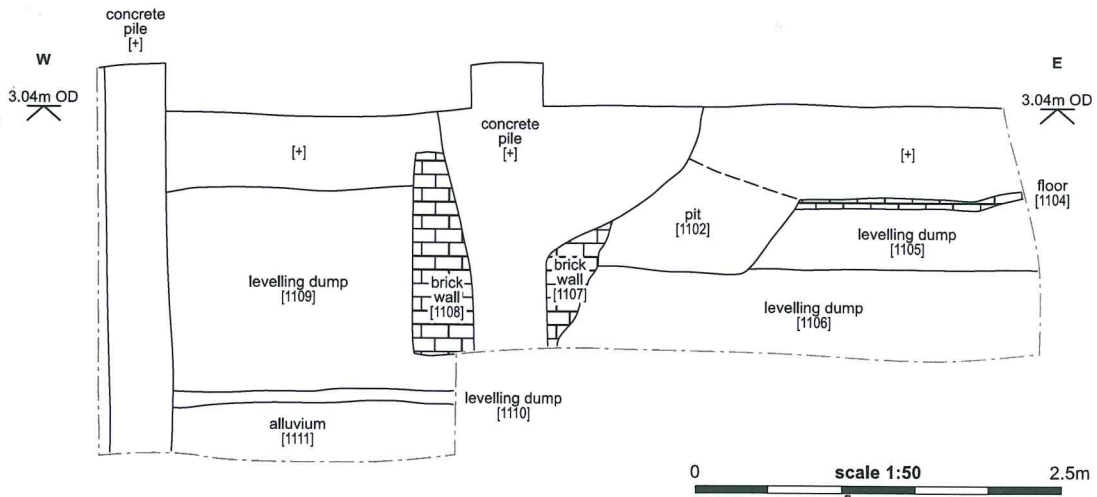


Fig 4 South facing Section 1 – Watching Brief Area 1

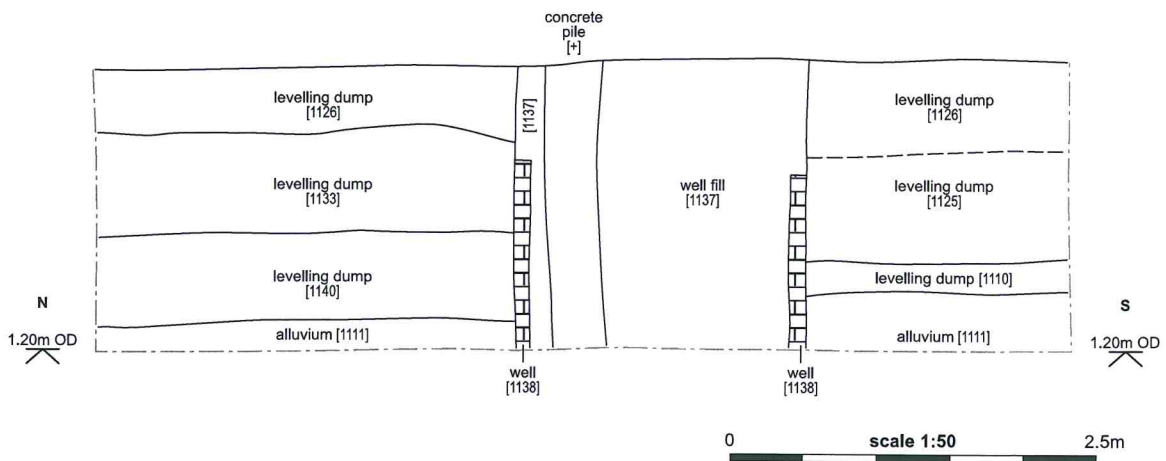


Fig 5 West facing Section 4 – Watching Brief Area 1

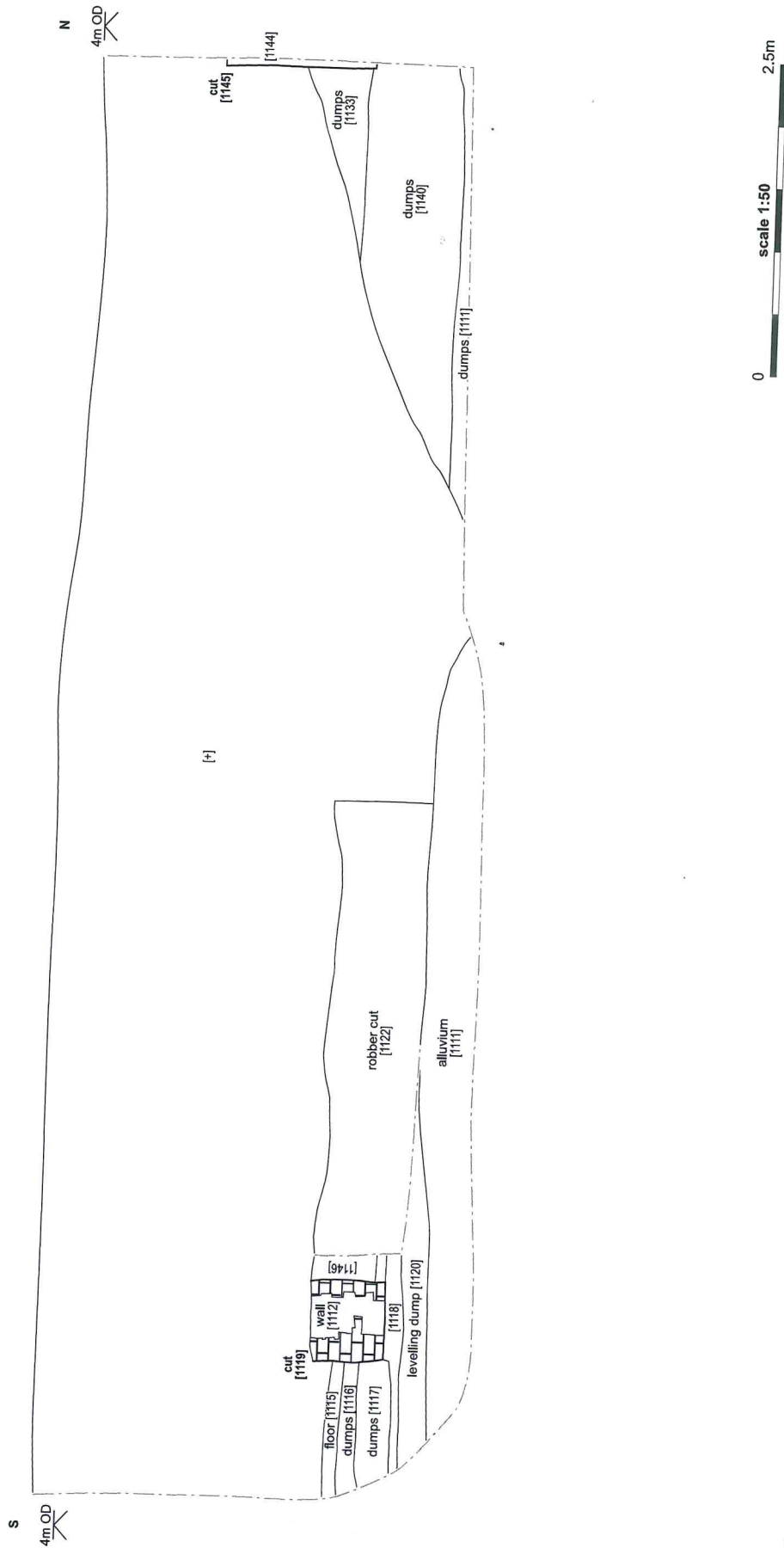


Fig 3 East facing Section 2 – Watching Brief Area 1

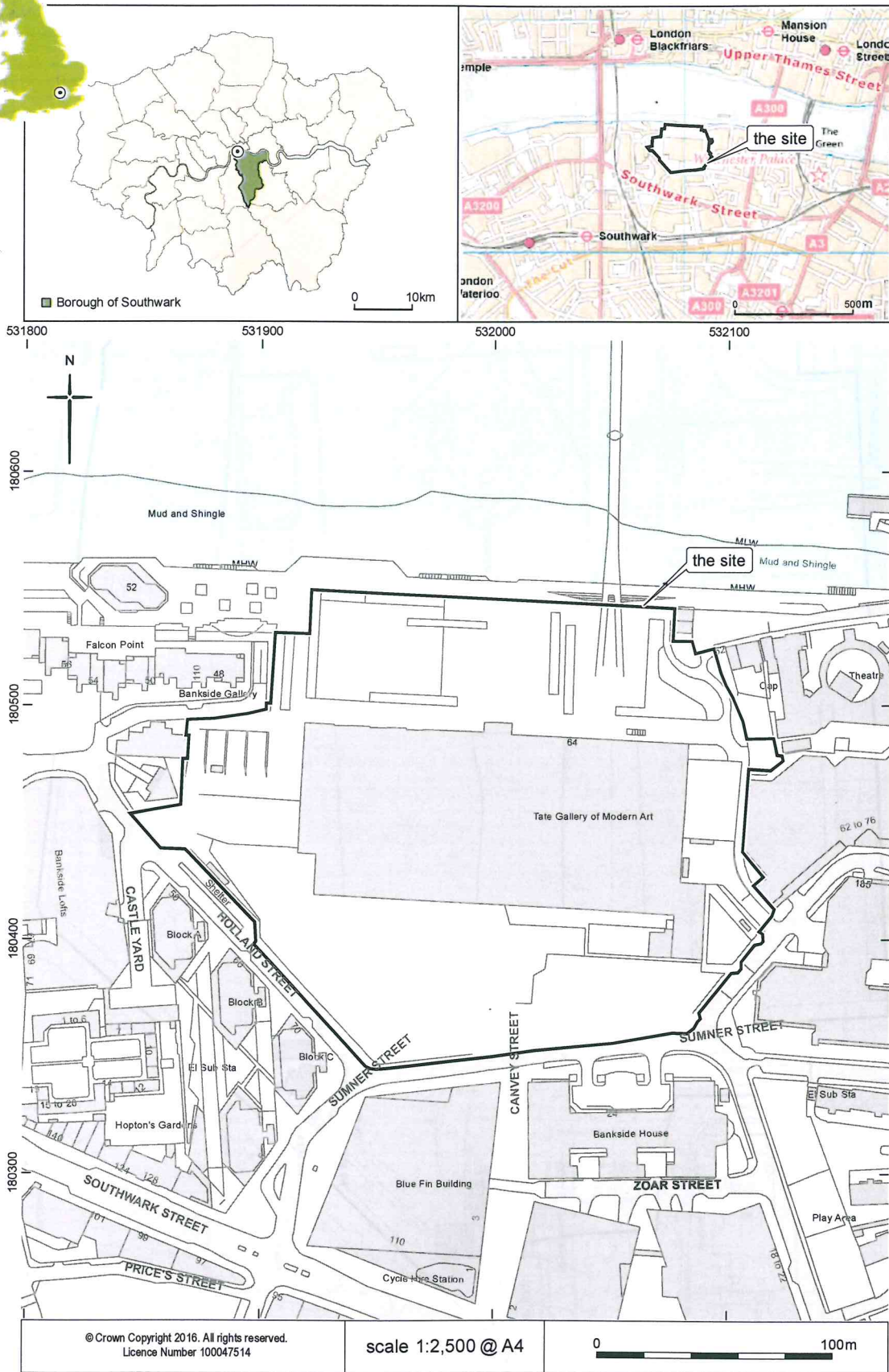


Fig 1 Site location