

LONDON BRIDGE TOWER PHASE II
Southwark
SE1 9SN

London Borough of Southwark

Evaluation report

September 2008



MUSEUM OF LONDON

Archaeology Service

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Site Code: LWE07
National Grid Reference: 532895 180110

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Summary (non-technical)

This report presents the results of an archaeological evaluation carried out by the Museum of London Archaeology Service under the service ramp of the former London Bridge Hotel adjacent to London Bridge Station, Southwark. The report was commissioned from MoLAS by Mace Ltd on behalf of the client Teighmore Construction Ltd. The results of the field evaluation have helped to refine the initial assessment of the archaeological potential of the site.

The further evaluation of the site established evidence of a single cut feature in the form of an irrigation channel or boundary ditch, possibly medieval in date, but established substantial evidence for survival of ancient ground surfaces (horizontal archaeological stratification) in the form of a peaty layer that was evident across the whole area of the site and maybe evidence of either a floodplain or marsh. Other evidence showed a sequence of dumped layers most notably that of a substantial quantity of Roman building material that may indicate the presence of a demolished Roman building (of some status) in or near the area of development. Two other distinct phases of dumping result in this area of land being raised in the medieval/early post medieval periods culminating in a period of development on site during the 18th and 19th centuries.

18th century demolished domestic cellared buildings and mid 19th century buildings belonging to the original London Bridge ticket office and waiting rooms were also recorded on site. In light of the revised understanding of the archaeological potential of the site the report concludes the archaeology has been adequately characterised and little useful additional archaeological information would be gained from further field investigation.

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1 Introduction

1.1 Site background

Between 21st July and the 11th September 2008 an evaluation took place at London Bridge Hotel, Southwark hereafter called 'the site'. The site is bounded by London Bridge station to the north, Stainer Street and railway arches to the east, St. Thomas Street and Guys Hospital to the south and the partial remains of the London Bridge Tower Office block and Joiner Street to the west. The centre of the site lies at OS National Grid Reference 532895 180110 and is currently a disused car park and service ramp awaiting demolition. Modern ground level adjacent to the south of the site lies at 4.15m OD. The site code is LWE 07.

A desk-top *Archaeological impact assessment* (AOC Archaeology, 2000) was also previously prepared, which covers the whole area of the site. The *assessment* document should be referred to for information on the natural geology, archaeological and historical background of the site, and the initial interpretation of its archaeological potential. An archaeological field evaluation was also previously carried out by MoLAS between March and April 2007. The evaluation report (*Gannon, S 2007*) should be referred to on the results of that evaluation.

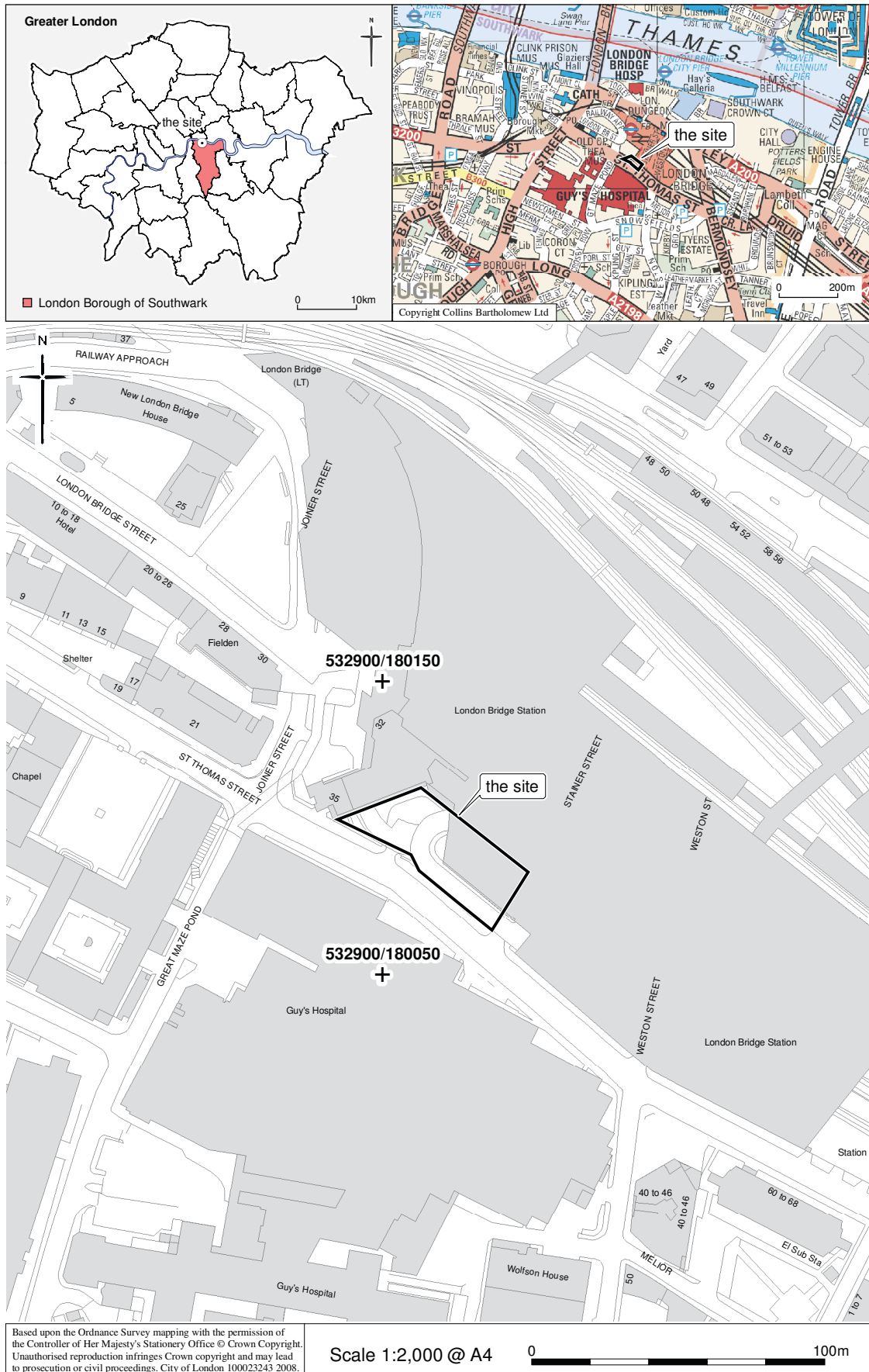


Fig 1 Site location

1.2 Planning and legislative framework

The Planning and legislative background to the site has been adequately summarised in the previous *Archaeological assessment* (AOC Archaeology in London Bridge Tower for Teighmore Limited, section 6.2).

1.3 Planning background

This evaluation has been carried out in response to a Senior Archaeological Officer for Southwark Council requesting further archaeological evaluation and the updating of the Local Plan has recently been adopted by the Borough of Southwark and is summarised below:

1.3.1 Archaeology and planning in the borough of Southwark

The Southwark Plan, adopted on 28th July 2007, is the framework for all land use and development in Southwark. The Plan recognises the importance of Southwark's archaeological heritage as a community asset and also recognises that it is under constant threat from future development. It sets out the local authority's policy in relation to archaeology (Policy 3.19) with the aim of ensure protection of important remains through the planning process. This adheres to the principles of national planning guidance PPG16. The policy states:

Planning applications affecting sites within Archaeological Priority Zones, as identified in Appendix 7, shall be accompanied by an archaeological assessment and evaluation of the site, including the impact of the proposed development. There is a presumption in favour of preservation in situ, to protect and safeguard archaeological remains of national importance, including scheduled monuments and their settings. The *in situ* preservation of archaeological remains of local importance will also be sought, unless the importance of the development outweighs the local value of the remains. If planning permission is granted to develop any site where there are archaeological remains or there is good reason to believe that such remains exist, conditions will be attached to secure the excavation and recording or preservation in whole or in part, if justified, before development begins.

Southwark has an immensely important archaeological resource. Increasing evidence of those peoples living in Southwark before the Roman and medieval period is being found in the north of the borough and along the Old Kent Road. The suburb of the Roman provincial capital (Londinium) was located around the southern bridgehead of the only river crossing over the Thames at the time and remains of Roman buildings, industry, roads and cemeteries have been discovered over the last 30 years. The importance of the area during the medieval period is equally well attested both archaeologically and historically. Elsewhere in Southwark, the routes of Roman roads (along the Old Kent Road and Kennington Road) and the historic village cores of Peckham, Camberwell, Walworth and Dulwich also have the potential for the survival of archaeological remains.

PPG16 requires the Council to include policies for the protection, enhancement and preservation of sites of archaeological interest and of their settings.

1.4 Origin and scope of the report

This report was commissioned by Mace Limited on behalf of the client Teighmore Construction Limited and produced by the Museum of London Archaeology Service (MoLAS). The report has been prepared within the terms of the relevant Standard specified by the Institute of Field Archaeologists (IFA, 2001).

Field evaluation, and the *Evaluation report* which comments on the results of that exercise, are defined in the most recent English Heritage guidelines (English Heritage, 1998) as intended to provide information about the archaeological resource in order to contribute to the:

- formulation of a strategy for the preservation or management of those remains; and/or
- formulation of an appropriate response or mitigation strategy to planning applications or other proposals which may adversely affect such archaeological remains, or enhance them; and/or
- formulation of a proposal for further archaeological investigations within a programme of research

1.5 Aims and objectives

This statement sets out the methods used and approaches taken in dealing with the archaeological resource of the site. The detailed methodology is set in the context of the methods and approaches that are considered most appropriate for Archaeological Evaluations in Greater London, in accordance with the advice contained in the English Heritage (GLAAS), *Archaeological Guidance Papers 1-5* (revised 1998).

The archaeological brief is essentially limited to establishing where, if at all, archaeological deposits may survive (presence/absence), recording where necessary, and to ensuring that the proposed groundwork's do not involve the destruction of any archaeological deposits of national significance. All research is undertaken within the priorities established in the Museum of London's *A research framework for London Archaeology*, 2002. The following research aims and objectives were established in the preceding *Method Statement* for the evaluation (*Section 2.2 Seeley, D 2008*):

- The presence, date and nature of any prehistoric occupation or activity, including evidence for prehistoric land surfaces or environmental deposits which may inform on the topographic profile of the site.
- The presence, date and nature of any Roman activity, including any waterfront installations, and how it relates to that already known in the area.

- The presence of any medieval activity and what this indicates about the nature of the medieval settlement in this part of the borough.
- The presence of post-medieval buildings, and whether these represent domestic or industrial activity on the site.

2 Topographical and historical background

A detailed description of the geology, archaeology and history of the site was provided in the earlier *Archaeological assessment* (AOC Archaeology in London Bridge Tower for Teighmore Limited, section 6.4 and 6.5). The results of the 4 evaluation trenches investigated in March/April 2007 are presented in an unpublished MoLAS evaluation report (*Gannon, S 2007*). A brief resume is provided here:

The time-scales used in this report are:

Palaeolithic:	650,000-10,000 BC
Mesolithic:	10,000-4,000 BC
Neolithic:	4,000-2,000 BC
Bronze Age:	2,000-600 BC
Iron Age:	600 BC-AD 43
Roman:	AD 43-410
Saxon (early-medieval):	AD 410-1066
Medieval:	AD 1066-1485
Post-medieval:	AD 1485-present

2.1 Topography

The site is situated upon river alluvium with an eyot of river terrace approximately 200 metres to the west (BGS 270). Generally gravel is encountered varying between a thickness of 4.0m and 8.0m, with the top of stratigraphy being between +0.5m to – 1.6m OD. Below the terrace gravels, London clay was encountered at a depth of between –2.25 to –7.5m OD.

2.2 Prehistoric

Artefacts from the Palaeolithic period (c.50,000-10,000 BC) have been recovered from sites in the Southwark area, but the majority of earlier prehistoric finds are of Mesolithic or Neolithic date (c.8,000-2,500 BC). Five flint tools were recovered from an excavation on Tooley Street, which are thought to date from the Mesolithic or the Neolithic, whilst an excavation on Joiner Street in 1995 revealed several prehistoric pits possibly of Bronze Age date. An excavation at London Bridge City 80m to the west of the site exposed several residual prehistoric artefacts.

2.3 Roman

Three Roman military roads converged on Southwark, leading to the crossing point of the Thames near London Bridge. The building of a military supply base at Southwark began c. AD 50 and by the end of the first century AD the settlement had become densely populated and covered an area of some 13 hectares.

Southwark burials have been found in a wide arc around the notional perimeter of the settlement. Several burials have been located within the vicinity of the site. An excavation at Guy's Hospital, phase III revealed thirty two metres of oak waterfront. Less than two metres west of the water front an early 2nd century pagan burial was recovered.

An excavation at London Bridge Station discovered further burials dating to the Roman period. Two inhumations were excavated and two further grave cuts were found which were thought to be of Roman date. In addition to the burials, further Roman remains in the form of Roman dumps and gravels cut by several large Roman pits, post holes and ditches thought to have been related to drainage. Along the western limit of the site, a chalk foundation raft was found for an east wall and the north-east corner of a large 2nd century masonry building was discovered.

At the shipwright's yard on Tooley Street, 150 metres to the north-east of the proposed development site, excavation revealed clay at a depth between +2m and +1.30m OD, thought to date to Roman times. At 13-19 Maze Pond, 120 metres to the south of the site a Roman channel 6.5m wide with gravel and clay fill was discovered along with oak timber revetting and associated Roman pottery sherds.

An excavation at Cotton's Wharf, approximately 140 metres to the north of the site found evidence of ditches, pits including a square wattle lined pit and several partially robbed out ragstone foundations thought to date to the 2nd or 3rd century. A hoard of 44 Roman bronze coins, mostly Valentinian were found close to a stone building. An excavation which took place at Mayor Swords Arches, Joiner Street in 1994 found evidence of early Roman activity in the form of large quarry pits, backfilled and sealed by dumping. Additionally a building which had been constructed over the dumping was discovered and also a later masonry building which included a polychrome mosaic was revealed.

The first phase of evaluation on this site recovered Roman objects including pottery, building material, glass and metalwork from the alluvial sequence that was present in all 4 trenches across the site. No structural remains were identified.

2.4 Saxon

There is no archaeological evidence for any significant Saxon occupation in north Southwark until the late ninth century AD. The first version of the Southwark Cathedral, however, was constructed in the 7th century, although it is held that this

building was built by a ferryman who had sole access to the grounds that were otherwise inaccessible.

By the end of the tenth century AD, Southwark had become an integral southern outpost of London, being described as *Sudwerca*, the ‘south work’, to distinguish it from the city’s own defences.

Several stray finds dating to the Saxon period have been recovered from the vicinity of the site. These include a 10th century bone trial piece found on Tooley Street in 1847 and a hoard of 13 Saxon coins found in or before 1833 in the construction of the sewer opposite St Olave’s Church also on Tooley Street.

2.5 Medieval

In the 12th century Southwark contained several important houses growing as a result of the quantity of road traffic from the south and southeast of England. Certain industries grew in response to this for example the brewing houses such as the Fleur de Lis Inn on Tooley Street/Stainer Street and the Walnut tree Inn where Railway Approach is now situated approximately 140 metres to the north-west of the site. By 1295 Southwark was important enough to be able to send two members to Parliament. In medieval times Southwark comprised of three manors; the Gildable, the Great Liberty and Bermonsey Abbey. Southwark was also the site of the Abbots of Battle, which in 1430 contained a gatehouse, brewhouse and gardens.

By the 14th century the area was a notorious centre for prostitution, and Bankside in particular became synonymous with the seedier aspects of urban life. Borough High Street was lined with inns and brothels.

Much evidence has been exposed demonstrating the occupation of Medieval Southwark within the vicinity of the site. Excavation carried out at Guy’s Hospital, St Thomas Street, 150 metres to the south of the site revealed several phases of building on the same alignment, with walls and post holes surviving and pits filled with domestic rubbish. Mayor Sworder’s Arches on Joiner Street displayed similar evidence with medieval dumps overlying Roman quarry pits, which had been levelled and then built upon with at least one medieval masonry building. Joiner Street also contained a medieval or post-medieval burial.

In the earlier evaluation on this site, one medieval sherd of pottery was recovered from an alluvial layer that also contained Roman pottery in Trench 3. No other remains of medieval date were noted.

2.6 Post-medieval

The earliest cartographic evidence for the area of Southwark shows that much of the development of the area occurred along the road frontages such as Borough High Street then named Long Southwark. William Nelkton’s map of c. 1530 depicts the

site as being occupied by gardens, potentially containing housing within the north-western corner of the site boundary. Along Bankside many theatres sprang up such as the Rose, Swan, Hope and the Globe. These are visible on the map of London in 1603 by Brett-James. The site still appears to be occupied by gardens. Many immigrants settled in Southwark so that the population grew from 10,000 in 1547 to approximately 30,000 in 1678. By the mid 18th century Borough Market was active, supplying Southwark with wholesale and retail goods. During the eighteenth and nineteenth centuries a great deal of industrial development occurred within the Southwark area. Southwark was an area well suited for industry, given the proximity to the rail and shipping routes, being close to the City, and having a large supply of labour. As the district lacked a great deal of open space, such factories and warehouses were often slotted in to existing open land, when it became available. Rocque's map of 1746 demonstrates the massive growth of the area with development occurring along and between all major roads, with fields and tetter ground occupying the southern region of Southwark. The area of the proposed development site has been urbanised and there are alley ways within the site boundary, for example, Hammer Alley and Silver Street.

The Horwood map of 1817 illustrates the diversity of industry within the Southwark area, particularly the abundance of breweries, iron foundries, tanneries and vinegar works. During this period the site is shown to contain a mixture of terraces housing and yards. The First Edition Ordnance Survey map of 1863-1875 is the first map detailing the presence of London Bridge Railway Station.

The buildings on the site were heavily damaged during the war, leading to a reconstruction, which survived until the 1970's when the existing buildings were constructed and the site took on more or less the same bearing that is visible today.

An excavation at the junction of Joiner Street and St Thomas Street opposite the site produced evidence of a barrel well or pit. Later excavations conducted in 1995 suggested that the site had been an open area until the rebuilding of St Thomas' Hospital in 1709 when the land became cemetery, twelve post-medieval burials were excavated. An excavation undertaken at London Bridge City Station and Car park 80 metres to the west of the site, also in 1995 found post-medieval remains including two brick lined pits, a soak away and a cess pit. The back fills of both pits contained large quantities of domestic rubbish, including pottery and more than six complete glass vessels.

In the previous evaluation up to 2.8m of post medieval dump deposits and brick foundations were recorded in the 4 trenches. A flagstone floor in trench 4 is thought to be part of the 19th century Terminus Hotel. The other foundations are thought to be part of buildings associated with the railway station.

3 The evaluation

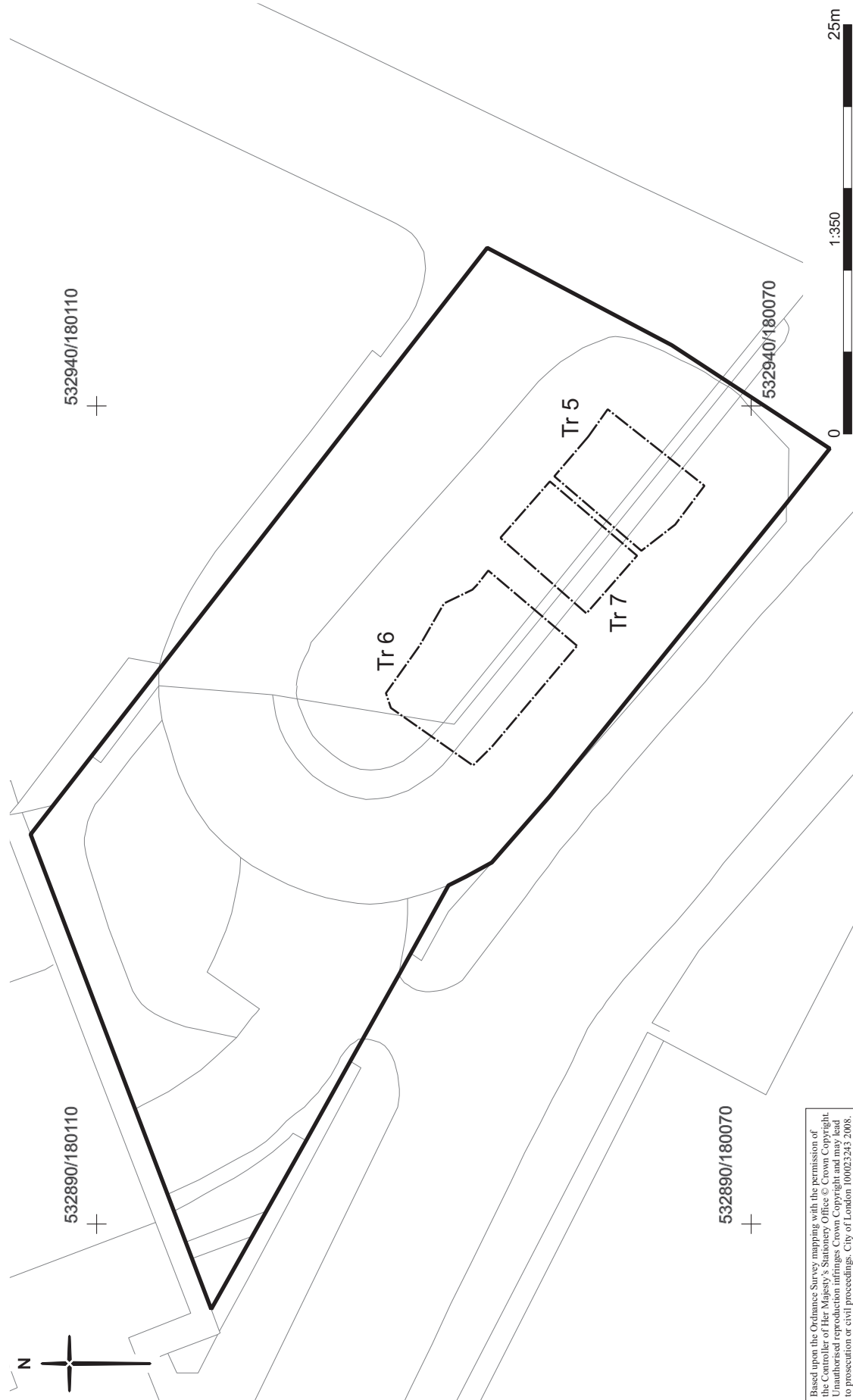
3.1 Methodology

All archaeological excavations and recording carried out during the evaluation were carried out in accordance with the preceding “*Method Statement*” (Seeley, D 2008) and the MoLAS *Archaeological Site Manual* (MoLAS, 1994).

Evaluation test pits excavated in March and April 2007 (Gannon, S 2007) identified limited potential for survival of ancient ground surfaces (horizontal archaeological stratification) and cut features. As a result of this evaluation the Senior Archaeological Officer for Southwark Council requested a further archaeological evaluation prior to demolition of the area. The proposed works consisted of a single evaluation trench measuring 20.00m x 6.00m was to be excavated within the area of the car park to a depth of 3.50m by means of a stepped edge trench. The limited size of the area made it impractical to excavate a single trench and it was decided the trench would be excavated in three phases.

The location of each evaluation trench was marked out when required by the attending Senior Archaeologist. Each trench was then broken out by a pneumatic breaker attached to a tracked 360 type excavator. All undifferentiated material within each trench was removed by a flat bladed ditching bucket attached to the 360 excavator down to the first significant horizon; these were cleaned by hand and recorded. Once recorded the first significant horizons along with preceding stratification were methodically graded away in spits by mechanical excavation down to the top of natural. Lower sections of the trenches were again cleaned by hand and recorded by members of the MoLAS field team.

The location of the trenches were recorded by Members of the MoLAS survey team using a total survey station, this information was then plotted onto the OS grid. Written and drawn records of all deposits encountered were made in accordance with the principles set out in the MoLAS site recording manual (*MoLAS, 1994*). Levels were calculated via a traverse engineering level taken from a spot height of 4.17m OD transferred from a bench mark on the corner of Mellior Street and Snowfields by members of the excavation team. Three trench plans were produced at a scale of 1:20 along with 3 section drawings at a scale of 1:10. The site also produced 38 context records and a series of colour digital working shots of the trenches were also produced. In addition a box of finds was recovered from the site. The site finds and records have been added to the previous evaluation and can be found under the site code LWE 07 currently in the MoL archive.



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Fig 2 Trench location

3.2 Results of the evaluation

In total, three evaluation trenches were excavated for the purpose of further determining the archaeological potential. The trenches have been numbered consecutively continuing from the 2007 evaluation. A description of the recorded archaeological deposits follows. For area locations refer to *Fig 2 Trench Location*.

Trench 5

Location	South-eastern end of site
Dimensions	7.00m (L) x 5.80m (W) x 3.94m (D)
Modern ground level	4.00m OD
Base of modern fill	2.22m OD
Depth of archaeological deposit seen	1.47m
Level of base of deposits observed	0.34m OD
Natural observed	0.02m OD

Roughly rectangle in shape trench 5 was excavated at the south-eastern end of the site on a northeast-southwest alignment. Recorded at a height of 4.00m OD and measuring 7.00m by 5.80m the trench was excavated to a depth of 3.94m. A small sondarge was excavated against the southern edge of the trench to determine the depth of the underlying natural.

Clean natural clay was recorded in the sondarge at a height of 0.02m OD and consisted of very clean soft bluish grey clay (117). Covering the natural was a 0.32m thick fairly compact dark greyish brown subsoil or peat layer (116). Recorded at a height of 0.34m OD and contained inclusions of occasional flecks of oyster shell, moderate small flints and small fragment of Roman pottery dating from between the early 2nd and early 5th century (AD 120–400). Overlaying the subsoil/peat was a 0.22m thick dumped layer of soft grey silty clay (115) with very frequent flecks of mortar, daub and charcoal, other inclusions such as very occasional small to large flints, small to large 1st to 2nd century (AD 90-160) Roman ox and sheep bones, medium fragments of stone, small Roman 1st to 2nd century (AD 70–160) tegula, imbrex, and daub, Roman pottery also dating from the late 1st and late 2nd century (AD 90–160) and moderate small to medium flints. Recorded at a height of 0.66m OD the dumped layer was covered by a soft mottled grey and brown layer of silty clay (114) with identical inclusions especially Roman tegula, brick and tesserae dating from the mid 2nd to early 4th century (AD 140–300), small to large 2nd to 4th century (AD 140-300) Roman ox bones. This layer also described as a dumped layer was recorded at a height of 0.92m OD was overlaid by a re-deposited layer of hard mottled light brown and greyish green silty clay alluvium (113) with very occasional small rounded flints, small to medium pot, 2nd to 3rd century (AD 50–160) Roman ceramic building material and moderate flecks of daub/ceramic building material. The alluvial layer was recorded at a height of 1.47m OD.

Cutting onto the alluvial layer on a northwest-southeast alignment at the south-eastern end of the trench were the remains of a severely truncated linear ditch [112] truncated

by deep 19th century footings. Filling the ditch was a firm mottled dark brown and orange clay (111) with frequent flecks of chalk and medieval ceramic building material, very occasional small fragments of oyster shell, small lumps of mortar, small to medium ox and ox sized bone dating from the late 12th to late 15th century (AD1180-1480), small fragments of Roman pottery dating from between the mid 1st and early 5th century (AD 50–400), moderate small flints, frequent flecks of chalk and flecks of ceramic building material. The ditch was recorded at a height of 1.47m OD and had a depth of 0.45m. Sealing the ditch was a 1.00m thick Post-Medieval deposit of soft grey silty clay (107). Cutting into the made ground in the northeast corner of the trench was the (recorded) foundation trench to an 18th century cellared building. The above deposits extend across and beyond the limit of excavation and in places were truncated by 19th century (recorded) structures to the former London Bridge station. Modern made ground and a concrete car park surface sealed the above deposits.

Trench 6

Location	North-western end of site
Dimensions	9.60m (L) x 6.40m (W) x 3.91m (D)
Modern ground level	4.00m OD
Base of modern fill	1.24m OD
Depth of archaeological deposit seen	3.00m
Level of base of deposits observed	0.32m OD
Natural observed	0.14m OD

Excavated at the north-eastern end of the site trench 6 was rectangle in shape on a northeast-southwest alignment. Recorded at a height of 4.00m OD and measuring 9.60m by 6.40m, the trench was excavated to a depth of 3.91m. The low lying stratification was methodically graded away in spits by mechanical excavation down to the top of the underlying natural. The eastern half of the trench was abandoned due to the presence of a 1.50m thick 19th century concrete base.

Natural brickearth was recorded at a height of 0.14m OD at the western end of the trench and consisted of firm brownish orange clay (128). Overlying the brickearth was at 0.15-0.30m thick firm dark brown subsoil or peat layer (127) recorded at a height of 0.32m. The subsoil\peat layer contained inclusions of very occasional large fragment of Roman pottery dating from between the early 2nd and early 5th century (AD 120–400), 1st century (AD 50–80) Roman brick and small to medium Roman ox bone dating from the early 2nd to early 5th century (AD 120-400). Recorded at a height of 0.87m OD was a dumped layer of soft mottled greenish grey slightly gritty silty clay (126) covering (127). The inclusions consisted mainly of late 2nd to early 3rd century (AD 170–230) Roman tegula, imbrex, brick, box-flue tile and opus signinum, small quantities of Roman Samian ware and amphora dating from the late 2nd and early 4th century (AD 170–300). Also recorded were small to large animal bones identified as late 2nd to early 4th century (AD 170-300) Roman ox and pig, fragments of oyster shell and flecks of chalk and charcoal.

Overlaying the 0.70-0.80m dumped layer (126) and recorded at a height of 1.44m OD was a further layer of dumped firm brown silty clay (125) with very frequent flecks of

charcoal, very occasional small to medium Roman and mediaeval ceramic building material, moderate flecks of chalk and small flints, Roman pottery dating from the mid 1st to the mid 2nd century (AD 50–160) and small to medium medieval sheep and ox bone dating from the early 12th to late 15th century (AD 1200-1480). As with trench 5 the above deposits extend across and beyond the limit of excavation and were sealed by an identical post-medieval made ground deposit of soft greyish brown silty clay (124) 1.15m thick. This deposit was truncated at the western end of the trench by an 18th century cellared building (recorded) and 19th century structures (recorded) to the former London Bridge station. Modern made ground and a concrete car park surface sealed the above deposits.

Trench 7

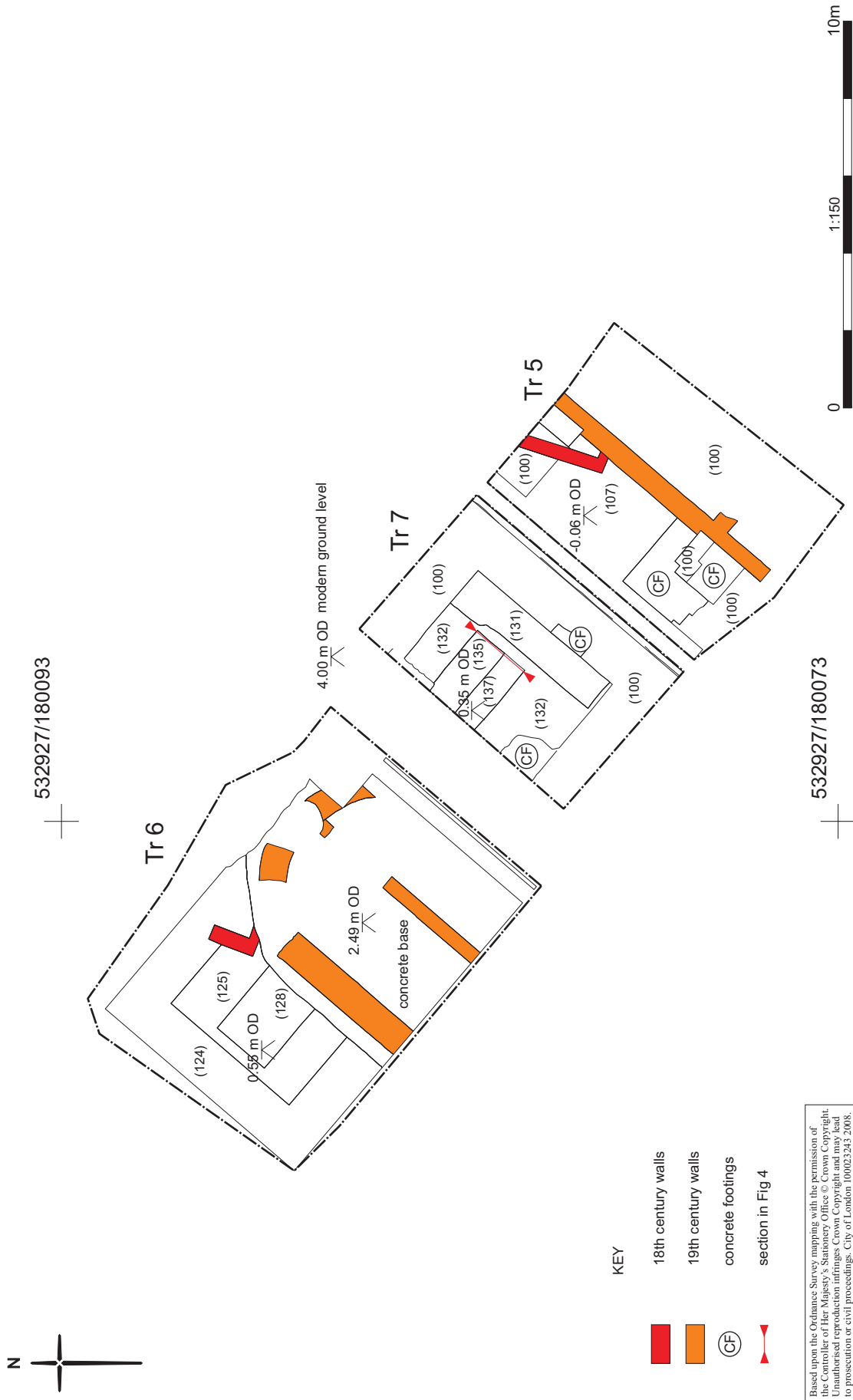
Location	Centre of the site between trench 5 and trench 6
Dimensions	7.00m (L) x 5.40m (W) x 3.68m (D)
Modern ground level	4.00m OD
Base of modern fill	1.46m OD
Depth of archaeological deposit seen	2.97m
Level of base of deposits observed	0.35m OD
Natural observed	0.24m OD

Excavated between trenches 5 and 6 trench 7 was roughly rectangle in shape and excavated on a northeast-southwest alignment. Recorded at a height of 4.00m OD and measuring 7.00m by 5.40m the trench was excavated to a depth of 3.68m. Having removed all undifferentiated material the low lying stratification was methodically graded away in spits by mechanical excavation down to the top of the underlying natural.

The natural (138) was recorded at a height of 0.24m OD and consisted of soft mottled greyish brown and light yellow silty clay. Overlying the natural was 0.14-0.20m of thick firm dark brown subsoil or peat layer (137) recorded at a height of 0.35m OD. The subsoil/peat layer contained no inclusions. The southeast corner of the trench showed evidence that the subsoil/peat layer was partially covered by re-deposited natural (136). The north and eastern section showed the re-deposited natural and subsoil/peat layer were partially sealed by a loose layer of rounded flints (135) from which a small quantity of Roman pottery dating from the mid 1st and early 5th century (AD 50–400) was recovered. Covering (135), (136) and (137) and recorded at a height of 1.03m OD and approximately 0.20m thick was a soft mottled grey and green silty clay (134). As well as containing a small quantity of Roman pottery dating from the early to mid 2nd century (AD 120–160), 2nd to 4th century (AD 140–300) Roman imbrex, tegula, brick, box-flue tile, opus signinum and tessera, small to large animal bones identified as ox dating from the early to mid 2nd century (AD 120-160). The deposit would appear to be a variation of the dumped layer containing Roman building material recorded in trenches 5 and 6.

Above the dumped layer of Roman material was a further dump layer comprised of 0.30m thick hard mottled light grey and greenish brown silty clay (133). Recorded at a height of 1.28m OD the dumped layer contained very occasional flecks of charcoal

and moderate small flints. Above (133) was a further 0.32m layer of dumped firm light greyish brown silty clay (132) with very occasional small bone and flecks of charcoal, very frequent flecks of mortar and moderate small angular flints. Recorded at a height of 1.46m OD and like trenches 5 and 6 the above deposits extend across and beyond the limit of excavation and were also sealed by a post-medieval made ground (131). 19th century peg and floor tile with a piece of residual medieval (1300-1500) pottery recovered from the deposit strongly suggests the soil was imported from outside the area of evaluation. This deposit was truncated through the centre of the trench by an 18th century cellared building (recorded) and 19th century structures (recorded) to the former London Bridge station. Modern made ground and a concrete car park surface sealed the above deposits.



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Fig 3 Evaluation trenches

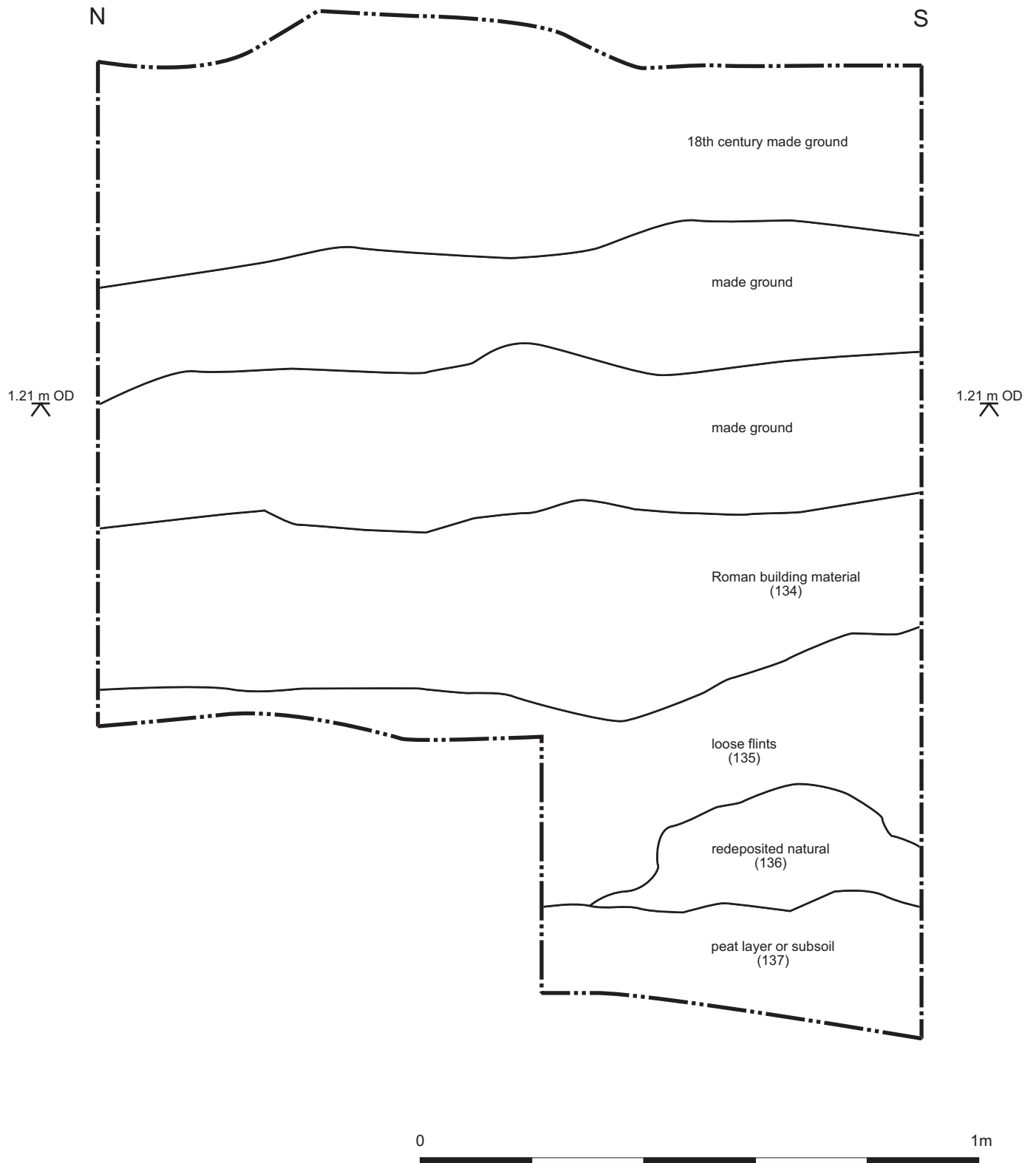


Fig 4 Northwest facing section (trench 7) showing build up of dumped layers

3.3 Assessment of the evaluation

GLAAS guidelines (English Heritage, 1998) require an assessment of the success of the evaluation ‘in order to illustrate what level of confidence can be placed on the information which will provide the basis of the mitigation strategy’.

The object of these additional trenches were intended to evaluate the potential for archaeological remains and to help determine the extent of the representative sample of the archaeological deposits recorded in the initial evaluation and to further refine the initial assessment of the archaeological potential of the site. In the case of this phase of evaluation, the evaluation established evidence of post medieval (18th century) demolished buildings, and demolished buildings from the mid 19th century belonging to the original London Bridge ticket office and waiting rooms. The evaluation also established the area had been subjected to two or three phases of dumping; the first of this dumping may have taken place either during or after the Roman period with substantial quantities of Roman building material. Later phases of dumping maybe attributed to the medieval or early to mid post-medieval period (16th to 17th century).

4 Archaeological potential

4.1 Realisation of original research aims

All research is undertaken within the priorities established in the Museum of London’s *A research framework for London Archaeology*, 2002. The following research aims and objectives were established in the preceding *Method Statement* for the evaluation (*Section 2.2 Seeley, D 2008*):

- *The presence, date and nature of any prehistoric occupation or activity, including evidence for prehistoric land surfaces or environmental deposits which may inform on the topographic profile of the site.*

There was no direct evidence of any prehistoric occupation or activity in the area of evaluation, though the presence of a peaty layer across the whole area of the site may indicate a prehistoric floodplain.

- *The presence, date and nature of any Roman activity, including any waterfront installations, and how it relates to that already known in the area.*

The substantial quantity of dumped Roman building material recorded in all three trenches may indicate the presence of a demolished Roman building

possibly of some status in or near the area of development, although it is unclear if this material was dumped during the Roman period or later.

- *The presence of any medieval activity and what this indicates about the nature of the medieval settlement in this part of the borough.*

There was no direct evidence of any medieval activity in the area of evaluation, though the east-west aligned linear ditch in trench one may be attributed to medieval activity in the form of an irrigation channel or boundary ditch.

- *The presence of post-medieval buildings, and whether these represent domestic or industrial activity on the site.*

The evaluation established evidence of Post Medieval (18th century) demolished cellared buildings, and demolished buildings from the mid 19th century belonging to the original London Bridge ticket office and waiting rooms. The 18th century buildings may have been domestic in their use.

4.2 General discussion of potential

The evaluation has shown that the potential for survival of ancient ground surfaces (horizontal archaeological stratification) on the site is very high, probably the result of sequential dumping most notably from mid to late Roman period and the 18th century. There is no direct evidence for any in situ structures or occupation layers at this location. The presence of a peaty layer evident across the whole area of the site further suggests the area was either floodplain marshland or subjected to flooding in antiquity. The potential for survival of cut features is unclear; though the re-deposited natural recorded in the section of trench 7 could indicate the presents of an irrigation channel, ditch or other cut feature. The linear ditch in trench 5 may have been a boundary ditch or irrigation channel but of later date. The recovery of medieval and Roman material would suggest the feature was medieval or later in date. The substantial quantities of dumped Roman building material of mainly 1st century and mid 2nd to 3rd century date may indicate the presence of a demolished Roman building with hypocaust or heating system in the nearby settlement around the south end of London Bridge.

The evaluation also established the area had been subjected to two or three phases of dumping. The presence of animal bone, ceramic building material and pottery suggests the first of this dumping may have taken place sometime during the late 3rd or early 4th century, although Roman pottery recovered from one of the dump layers suggests the latter. The second phase of dumping is probably during the medieval period sometime towards the latter part of the 15th century or just after. The current ground level is due to the substantial dump of post-medieval soil, maybe as a result of further land reclamation during the 18th century. The average depth of archaeological deposits where they do survive is likely to be at 1.50m below current ground level.

4.3 Significance

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

5 Assessment by EH criteria

The Department of the Environment published a set of guidelines with criteria by which to measure the importance of individual monuments for possible Scheduling. These criteria are as follows: *Period*; *Rarity*; *Documentation*; *Survival/Condition*; *Fragility/Vulnerability*; *Diversity*; and *Potential*. The guidelines stresses that ‘these criteria should not...be regarded as definitive; rather they are indicators which contribute to a wider judgement based on the individual circumstances of a case’.¹

In the following passages the potential archaeological survival described in the initial Assessment document and Section 4 above will be assessed against these criteria.

Criterion 1: period

Taken as a whole, archaeology in the Application site appears to be characteristic of Roman, Medieval, early Post-Medieval (16th and 17th century) and the later Post Medieval (18th to mid 19th century) periods.

Criterion 2: rarity

There is nothing to suggest that any of the likely archaeological deposits encountered in the evaluation are rare either in a national, regional or on a local context.

Criterion 3: documentation

There are no surviving documentary records for remains in the area from the Roman period. Whilst there may be considerable contemporary documentation for the later medieval period from *c* 1300 on, the truncated and fragmentary nature of archaeological remains from this period will render most of this information unusable/ it is unlikely that any of this will be specific enough to relate to individual features. Historic OS maps have helped to establish the history of land use of the proposed development site during the later post-medieval period.

Criterion 4: group value

None of the likely archaeological deposits are associated with contemporary single Monuments external to the site.

Criterion 5: survival/condition

The evaluation has demonstrated that there is a good survival of ancient horizontal soil deposits and that any surviving structural remains may be horizontally truncated to either dramatically different or set levels due to the result dumping or natural weathering of the site.

¹ Annex 4, DOE, Planning and Policy Guidance 16, (1990). For detailed definition of the criteria see that document. Reference has also been made to Darvill, Saunders & Startin, (1987); and McGill, (1995)

Criterion 6: fragility

Experience from other sites has shown that not only isolated and exposed blocks of stratigraphy can be vulnerable to damage during construction work but surviving building fabric can also be subjected to such vulnerability.

Criterion 7: diversity

Clearly taken as a whole the archaeological deposits which are likely to be found in the site may possibly represent a diverse and heterogeneous group of archaeological remains of the Roman, Medieval, early Post-Medieval and the later Post Medieval period (late 18th early to mid 19th century). However, this diversity is in itself the product of a random process of vertical and horizontal truncation and separation. There is no reason to suggest that the diversity *per se* has any particular value, which ought to be protected.

Criterion 8: potential

The term Potential in this context appears to mean that though the nature of the site, usually belowground resources, cannot be specified precisely, however it will be possible to document remains relating to the 18th and 19th century and possibly the 16th and 17th century.

6 Proposed development impact and recommendations

The proposed redevelopment at London Bridge Tower has planning consent for the construction of a multi story tower block providing residential, hotel and office accommodation within the footprint of the former London Bridge Hotel. No plans or specifications regarding the proposed development have been made available at the time of this report; though it is understood the area of evaluation will be subjected to substantial ground reduction for underground parking. This type of ground reduction will have an immense impact on the surviving horizontal archaeological deposits exposed and recorded in the evaluation.

The assessment above (Section 5) and the archaeological potential (Section 4) does not suggest that preservation *in situ* would be an appropriate mitigation strategy. MoLAS consider the remaining archaeological deposits have been fully characterised by the two phases of evaluation and little additional useful information can be gained by further field investigation. The decision on the appropriate archaeological response to the deposits revealed by the evaluation and the above recommendations rests with the Local Planning Authority, their designated archaeological advisor and/or the developers appointed archaeological consultant.

7 Acknowledgements

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9 NMR OASIS archaeological report form

OASIS ID: molas1-48583

Project details

Project name	London Bridge Tower (The Shard)
Short description of the project	An archaeological evaluation was carried out by the Museum of London Archaeology Service under the service ramp of the former London Bridge Hotel, Southwark. The evaluation, established evidence of Post Medieval (18th and 19th century) demolished buildings. The evaluation also established the area had been subjected to two or three phases of dumping; the first of this dumping may have taken place either during or after the Roman period with substantial quantities of Roman building material. Later phases of dumping maybe attributed to the Medieval or early to mid Post-Medieval period (16th to 17th century). The results of the field evaluation have helped to refine the initial assessment of the archaeological potential of the site.
Project dates	Start: 21-07-2008 End: 11-09-2008
Previous/future Work	Yes / Not known
Any associated project reference codes	LWE 07 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	DITCH Early Medieval
Monument type	STRUCTURE Post Medieval
Significant Finds	CBM AND POTTERY Roman

Significant Finds	CBM Medieval
Significant Finds	CBM Post Medieval
Methods & techniques	'Environmental Sampling', 'Sample Trenches'
Development type	Urban commercial and domestic
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	GREATER LONDON SOUTHWARK SOUTHWARK London Bridge Tower
Postcode	SE1 9SN
Study area	4800.00 Square metres
Site coordinates	180110 532895 180110 00 00 N 532895 00 00 E Point
Lat/Long Datum	WGS 84 Datum
Height OD / Depth	Min: 0.02m Max: 0.24m

Project creators

Name of Organisation	MoLAS
Project brief originator	MoLAS project manager
Project design originator	MoLAS
Project director/manager	Derek Seeley
Project supervisor	Bruce Ferguson
Type of sponsor/funding Body	Client

Name of sponsor/funding body Client

Project archives

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