

5-11 POPE STREET
Southwark
SE1 3PR

WRITTEN SCHEME OF INVESTIGATION FOR
AN ARCHAEOLOGICAL EVALUATION

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Project Manager: Derek Seeley



**5-11 POPE STREET
Southwark
SE1 3PR**

Written scheme of investigation for an archaeological evaluation

Planning reference 13/AP0058
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Fig 1 Site location

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1 Introduction

1.1 Project background

- 1.1.1 This Written Scheme of Investigation (or WSI) for an archaeological evaluation on the site of 5-11 Pope Street, Southwark, SE1 3PR, has been commissioned from MOLA by Pope Street (SE1) Ltd.
- 1.1.2 The site comprises 5-11 Pope Street and is located in the London borough of Southwark. The site is bounded by Pope Street to the south and west, 4 Pope Street to the north and 64 to 68 Tanner Street and 12 Pope Street to the east. The centre of the site lies at National Grid reference 5334778 179959 (Fig 1). The site is currently occupied by a secure, caged area used for parking/storage. Modern pavement level near to the site lies at c 2.8m OD. The site is not currently basemented.
- 1.1.3 The development proposals for the site are that the fencing around the perimeter of the site will be removed and the site developed to create a four storey terrace of five residential dwellings. These properties will not be basemented. The development received planning permission on 26th March 2014 and included Condition Nos 5 and 6. The conditions requires that:-
- 5 - Before any work hereby authorised begins, excluding demolition, the applicant shall submit a written scheme of investigation for a programme of archaeological recording, which shall be approved in writing by the Local Planning Authority and implemented and shall not be carried out other than in accordance with any such approval given.*
- Reason: In order that the details of the programme of archaeological excavation and recording works are suitable with regard to the impacts of the proposed development and the nature and extent of archaeological remains on the site in accordance with Chapter 12, paragraph 141 of the National Planning Policy Framework, policy 12 of the Core Strategy 2011 and saved policy 3.19 of the Southwark Plan 2007.*
- 6 - Before any work hereby authorised begins, the applicant shall secure the implementation of a programme of archaeological evaluation works in accordance with a written scheme of investigation shall be submitted and approved in writing by the Local Planning Authority.*
- Reason: In order that the applicants supply the necessary archaeological information to ensure suitable mitigation measures and/or foundation design proposals be presented in accordance with Chapter 12, paragraph 141 of the National Planning Policy Framework, policy 12 of the Core Strategy 2011 and saved policy 3.19 of the Southwark Plan 2007.*
- 1.1.4 Details of the consented development are available at:-
<http://planbuild.southwark.gov.uk/documents/?casereference=13/AP/0058>
- 1.1.5 The site is located in the Borough, Bermondsey and Riverside Archaeological Priority Zone and potential interest on the site is of palaeoenvironmental and archaeological interest. The site lies in an area where palaeochannels existed from the prehistoric periods through the medieval period. Geology in the area has recorded successive layers of alluvial deposition over peat, the top most layers generally dating to late medieval period. Additionally the site is also located within the medieval Bermondsey Abbey precinct. The post-medieval period sees the first extensive development in the area following land drainage often associated with the tanning industry. The site was first developed by the 18th century and evidence of this and the earlier palaeoenvironmental sequence may survive on the site.
- 1.1.6 The purpose of archaeological evaluation as defined by the Chartered Institute for Archaeologists is to 'determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices' (CIFA, 2014). The results of the evaluation will inform the construction design and allow the Project Team and Local Planning Authority to identify an appropriate mitigation strategy for any archaeological remains that would be affected by the development. Should any archaeological

mitigation be necessary an additional written scheme of investigation will be prepared and submitted for approval, specifying the archaeological works and covering fieldwork, post-excavation analysis, publication and archiving

- 1.1.7 The evaluation works consist of the excavation of one archaeological evaluation trench on the site, this work is further outlined in Section 3. MOLA will be in sole possession of the site.
- 1.1.8 The results of the evaluation will be set out in a report to be issued within six weeks of completing the fieldwork. The site archive will be deposited with the Museum of London Archaeological Archive (LAARC) within twelve months of issuing the report.
- 1.1.9 This document sets out the methodologies (including Health & Safety) which will be followed during the excavation of the evaluation trench and during the post-excavation analysis and reporting stages. These will follow the Standards and Code of Practice laid down by the Chartered Institute for Archaeologists (CIFA 2014), and Historic England Centre for Archaeology Guidelines where appropriate
- 1.1.10 Other relevant documents include:
- the Archaeological desk-based assessment (Pre-Construct Archaeology 2011). This presented the initial assessment of archaeological potential on the site.

1.2 Planning and legislative framework

National Planning Policy Framework

- 1.2.1 The Government issued the National Planning Policy Framework (NPPF) in March 2012 (DCLG 2012) and supporting Planning Practice Guidance in 2014 (DCLG 2014). One of the 12 core principles that underpin both plan-making and decision-taking within the framework is to 'conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations' (DCLG 2012 para 17). It recognises that heritage assets are an irreplaceable resource (para 126), and requires the significance of heritage assets to be considered in the planning process, whether designated or not. The contribution of setting to asset significance needs to be taken into account (para 128). The NPPF encourages early engagement (i.e. pre-application) as this has significant potential to improve the efficiency and effectiveness of a planning application and can lead to better outcomes for the local community (para 188).
- 1.2.2 NPPF Section 12: Conserving and enhancing the historic environment, is produced in full below:

Para 126. Local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance. In developing this strategy, local planning authorities should take into account:

- the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;
- the desirability of new development making a positive contribution to local character and distinctiveness; and
- opportunities to draw on the contribution made by the historic environment to the character of a place.

Para 127. When considering the designation of conservation areas, local planning authorities should ensure that an area justifies such status because of its special architectural or historic interest, and that the concept of conservation is not devalued through the designation of areas that lack special interest.

Para 128. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the

heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

Para 129. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

Para 130. Where there is evidence of deliberate neglect of or damage to a heritage asset the deteriorated state of the heritage asset should not be taken into account in any decision.

Para 131. In determining planning applications, local planning authorities should take account of:

- the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and
- the desirability of new development making a positive contribution to local character and distinctiveness.

Para 132: When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.

Para 133. Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- the nature of the heritage asset prevents all reasonable uses of the site; and
- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and
- conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and
- the harm or loss is outweighed by the benefit of bringing the site back into use.

Para 134. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

Para 135. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

Para 136. Local planning authorities should not permit loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.

Para 137. Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.

Para 138. Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 133 or less than substantial harm under paragraph 134, as appropriate, taking into account the relative significance of the element

affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.

Para 139. Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

Para 140. Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies but which would secure the future conservation of a heritage asset, outweigh the disbenefits of departing from those policies.

Para 141. Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

The London Plan

- 1.2.1 The overarching strategies and policies for the whole of the Greater London area are contained within the London Plan of the Greater London Authority (GLA March 2015). Policy 7.8 relates to Heritage Assets and Archaeology:
- A. London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.
 - B. Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.
 - C. Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.
 - D. Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
 - E. New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.
 - F. Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.
 - G. Boroughs, in consultation with English Heritage [now named Historic England], Natural England and other relevant statutory organisations, should include appropriate policies in their LDFs for identifying, protecting, enhancing and improving access to the historic environment and heritage assets and their settings where appropriate, and to archaeological assets, memorials and historic and natural landscape character within their area.
- 1.2.2 Para. 7.31 supporting Policy 7.8 notes that 'Substantial harm to or loss of a designated heritage asset should be exceptional, with substantial harm to or loss of those assets designated of the highest significance being wholly exceptional. Where a development proposal will lead to less than substantial harm to the significance of a designated asset, this harm should be weighed against the public benefits of the proposal, including securing its optimal viable use. Enabling development that would otherwise not comply with planning policies, but which would secure the future conservation of a heritage asset should be assessed to see if the benefits of departing from those policies outweigh the disbenefits.'
- 1.2.3 It further adds (para. 7.31b) 'Where there is evidence of deliberate neglect of and/or damage to a heritage asset the deteriorated state of that asset should not be taken into account when making a decision on a development proposal'
- 1.2.4 Para. 7.32 recognises the value of London's heritage: '...where new development uncovers an archaeological site or memorial, these should be preserved and managed on-site. Where this is not possible provision should be made for the investigation, understanding, dissemination

and archiving of that asset’.

Archaeology and Planning in the borough of Southwark

- 1.2.5 Following the Planning and Compulsory Purchase Act 2004, Planning Authorities have replaced their Unitary Development Plans, Local Plans and Supplementary Planning Guidance with a new system of Local Development Frameworks (LDFs). UDP policies are either ‘saved’ or ‘deleted’. In most cases archaeology policies are likely to be ‘saved’ because there have been no significant changes in legislation or advice at a national level.
- 1.2.6 The London Borough of Southwark’s Core Strategy was adopted in April 2011.
- 1.2.7 Strategic Policy 12 in the Core Strategy covers the borough’s historic environment and is supported by policies 3.15, 3.16, 3.17 and 3.19 which were adopted as part of the Southwark Plan in 2007, and were ‘saved’ in April 2013 following the adoption of the Core Strategy. These state:

Strategic Policy 12 – Design and conservation

Our approach is

Development will achieve the highest possible standards of design for buildings and public spaces to help create attractive and distinctive places which are safe, easy to get around and a pleasure to be in.

We will do this by

1. Expecting development to conserve or enhance the significance of Southwark’s heritage assets, their settings and wider historic environment, including conservation areas, archaeological priority zones and sites, listed and locally listed buildings, registered parks and gardens, world heritage sites and scheduled monuments.
2. Carefully managing the design of development in the Thames Policy Area so that it is sensitive to the many special qualities of the River.
3. Making sure that the height and design of development conserves and enhances strategic views and is appropriate to its context, the historic environment and important local views.
4. Requiring tall buildings to have an exemplary standard of design and make a positive contribution to regenerating areas and creating unique places. Locations where tall buildings could go are in London Bridge, the northern end of Blackfriars Road, Elephant and Castle and action area cores. These are shown on the Key diagram.
5. Continuing to use the Southwark Design Review Panel to assess the design quality of development proposals.
6. Requiring Design and Access Statements with applications and encouraging Building for Life Assessments and heritage impact assessments.

Policy 3.19 – Archaeology

Planning applications affecting sites within Archaeological Priority Zones (APZs), as identified in Appendix 8, 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.

1.3 Archaeological background

- 1.3.1 A detailed description of the geology, archaeology and history of the site was provided in the earlier Archaeological desk-based assessment (Pre-Construct Archaeology 2011). A brief resume is provided here:
- 1.3.2 The results of archaeological excavations and borehole surveys in north Southwark show that from prehistoric times through to the medieval period the local landscape would have comprised low gravel islands (eyots) surrounded by fen crossed by braided channels of the River Thames (Gibbard 1994; Sidell et al 2000). Current topographical data suggest that for

much of the Holocene the site lay in or close to tidal channel between Horselydown Eyot to the north and Bermondsey Eyot to the south. The site may have fallen entirely within the channel for most of its history, but it could have included marginal land at the edge of the eyots, which would have been marshy and prone to flooding until a combination of reclamation schemes were undertaken in the late medieval and early post-medieval periods.

- 1.3.3 The British Geological Society mapping indicates site lies on alluvium underlain by Kempton Park Gravel. A borehole located in Tanner/Pope Street recorded made ground from 3.30m OD sealing alluvium between 1.8m to 0.80m OD, overlying peat to a depth of -1.2m OD, with this deposit overlying sand and gravel to -2.5m OD (Pre-Construct Archaeology 2011, 9).
- 1.3.4 Closer to the site an archaeological evaluation undertaken c 10m to the west of the site at 168 Tower Bridge Road in 2000 (site code TBO00) recorded the upper alluvium deposits at c 0.80m OD. This overlay peat encountered at c 0.30m OD to a depth of -0.10m OD which in turn sealed a silt deposit. The river terrace gravels were not reached on this site. The sequence of peat and other deposits are believed to be the southernmost edge of a low sandy island, possibly the Horsleydown eyot. There were no significant traces of human activity associated with this foreshore, but one prehistoric flint tool was recovered from the lowest deposit. The alluvial deposits were cut by a substantial east-west channel or ditch recorded to depth of c -0.34m OD which contained the remains of a medieval drinking jug (MoLAS 2001).
- 1.3.5 To the west of the site evidence of a large paleochannel running east–west was recorded during excavations at 82-84 Tanner Street (site code CEH12), that was thought to have existed from the prehistoric until the beginning of the post-medieval period. Terrace gravels were found in the lowest parts of several excavation areas. This is presumed to be the base of the paleochannel. Several alluvial layers were recorded on top of this base and covered by a layer of peat dated by C14 to the late Bronze Age/ Iron Age. The earliest evidence for human occupation of the site was a single worked timber post embedded in the peat, stylistically dated to late Bronze Age.
- 1.3.6 Little evidence of Roman activity has been recorded in the direct vicinity of the site however residual pottery has been recorded in later features from excavations in the area.
- 1.3.7 No early Saxon remains have been found nearby but residual middle and late Saxon finds were recorded on the site of Bermondsey Abbey (Dyson *et al* 2011, 12-13). The Cluniac Priory of St Saviour's was founded in 1082 and later known as Bermondsey Abbey. Tanner Street just to the north of the site forms part of the northern limits of the monastic precinct (Grimes 1968, 21, Fig 51 and Dyson *et al.* 2011, 120, Fig 80) and therefore the site lies just within the monastic precinct. The conventual buildings of St Saviours occupied the south-west corner of the precinct and the site lies some distance from the main complex was most probably only in use for agricultural purposes. The priory was surrendered to Henry VIII in 1539 at Dissolution.
- 1.3.8 Cartographic evidence suggests the site remained rural land near the remains of Bermondsey Abbey for much of the early post-medieval period. By the mid-18th century the site had been built on and Rocque's map of 1746 shows the site as housing a long building located just to the east of large north/south aligned drainage channel.
- 1.3.9 During the post-medieval period the leather industry and its subsidiary industries relating to animal remains became important in Southwark and Bermondsey. The area was an ideal location for this industry: a good supply of animal skins available from London butchers, a plentiful supply of water in the many streams running through the area and a nearby market for leather in the City. Horwood's map of c 1799 shows the site as located in a complex of buildings identified as Messer's Bowzer and Coates Glue Makers and later mapping shows the site as in located in area where many tanneries were established.
- 1.3.10 Nineteenth century Ordnance Survey mapping shows terrace housing on the site and by 1872 a tannery is also located adjacent to the site to the east. The housing remained on the site in the early 20th century. During WWII the London County Council bomb maps for the area show the site as 'seriously damaged but repairable' (London Topographic Society 2005, map 77). The houses remained on the site until the 1950s and were subsequently demolished and the site used as a car park.

Archaeological potential

- 1.3.11 The site has a high potential to contain well-preserved palaeoenvironmental evidence of

archaeological interest that would mainly date to the prehistoric through to early medieval periods. The site most probably straddles a former subsidiary channel of the Thames that once flowed between the gravel islands Horselydown Eyot and Bermondsey Eyot. Both the alluvial sediments in the channel and the material it contains may provide valuable information about changes in the local riverine and terrestrial environment, and would also contribute to current knowledge of the topography of the both the channel and the adjacent eyots. Additionally the site has some potential to contain archaeological remains dated to the prehistoric period at lower levels.

- 1.3.12 The site has a low potential to contain archaeological remains dated to the Roman and early medieval (Saxon) periods, as few archaeological remains dated to this period have been found in the locality. As surrounding excavation suggests the site may have been inundated during the Roman period and early medieval period.
- 1.3.13 The site has moderate potential for medieval activity as excavations directly to the west of the site (site code TBO00) recorded an east-west channel or ditch that contained medieval pottery. The site lies just to the south of Horsley Down and during the medieval and early post-medieval period was likely to have been open land, divided by drainage ditches evidence of which may remain.
- 1.3.14 The site has a high potential to contain post-medieval land reclamation and foundations of buildings dating to the site first development from the 18th century to the recent past.

1.4 MOLA team and other responsibilities

In the document below the following terms should be understood:

- 1.4.1 *MOLA (Museum of London Archaeology)* is a company limited by guarantee registered in England and Wales with company registration number 07751831 and charity registration number 1143574. Registered office: Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED.
- 1.4.2 *Project Manager* - MOLA office based manager who is the client's principal point of contact and who has overall responsibility for the project budget and delivery.
- 1.4.3 *Site Supervisor* - MOLA site based manager who is responsible for the direction of the field team. Site supervisors on larger sites will tend to be Project Officers in grade, whilst on other sites they will be Senior Archaeologists. On some sites there may be both a Project Officer and/or one or more Senior Archaeologists.
- 1.4.4 *Archaeologists* - MOLA excavation staff responsible on site for archaeological excavation.
- 1.4.5 *Field Services Operations Manager* - MOLA office based manager responsible for allocation of staff and supply of equipment and resources.
- 1.4.6 *Health and Safety Compliance Manager* – The MOLA manager with sole responsibility for site inspections, reporting and issuing of recommendations for the Site Supervisor and Project Manager to implement. Reports directly to MOLA CEO
- 1.4.7 *Principal Contractor* - appointed directly by the Client with overall responsibility for site H&S under CDM regulations.
- 1.4.8 *Attendance Contractor* - the contractor responsible for providing such attendances to MOLA as are deemed necessary to carry out their archaeological work (see section 4.2). These might for instance include but not be restricted to shoring, lighting, facilities, fencing, additional labour, spoil removal, etc The Attendance Contractor may be the same as the Principal Contractor, or it may be subcontracted to the Principal Contractor or it may sub-contracted to MOLA.
- 1.4.9 *Sub-contractor* – where this term is used in this document it refers to any contractor employed directly by MOLA during the course of its work on the site. MOLA sub-contractors are specified in para 10.2.40.

2 Objectives of the evaluation

2.1 General considerations

- 2.1.1 The purpose of an archaeological field evaluation as defined by the Chartered Institute for Archaeologists (CIFA, 2014) is to ‘determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices.’
- 2.1.2 This is further explained as ‘a limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site... . If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate.’
- 2.1.3 The CIFA guidelines also states that, where evaluation takes place in support of a planning application, the archaeological resource should not be ‘needlessly disturbed or damaged or inappropriate or excessive cost incurred’
- 2.1.4 An evaluation should thus augment any previous desk-based assessment, and provide all parties, particularly the Local Planning Authority, with sufficient material information upon which to base informed decisions regarding mitigation. An evaluation may therefore result in the need for further archaeological action and a further written scheme of investigation may be required in order to comply with planning conditions.
- 2.1.5 MOLA’s archaeological evaluation methodology will conform to best professional practice as summarised in the appropriate Chartered Institute for Archaeologists Guideline for Evaluation (CIFA 2014)

2.2 Site specific objectives

- 2.2.1 The redevelopment of the site may have an impact on any surviving archaeological deposits on the site. The primary objective of the evaluation is to confirm the extent, nature and significance of any surviving archaeological deposits or structures on the site.
- 2.2.2 The assessment of significance of any surviving remains is undertaken in the context of the wider archaeological research priorities for London. These are set out in the Museum of London’s ‘*A research framework for Greater London*’ (MOL 2002).
- 2.2.3 A number of broad objectives and research questions have been identified for this evaluation:
- What is the nature and level of natural topography?
 - What are the earliest deposits identified?
 - What is the topographical and environmental profile, particularly in the early periods, of the site and how does it refine the predictive models for the area?
 - Does the site lie within the limits of a palaeochannel?
 - Is there any evidence of prehistoric activity on the site?
 - Is there any evidence of medieval activity on the site? If present how does this relate to the possible medieval ditch recorded at 168 Tower Bridge Road?
 - Is there evidence for early post-medieval activity. Did any activity take place on the site before the 18th to early 19th-century industrial activity on the site?
 - What is the extent of modern disturbance?

3 Evaluation methodology

3.1 Archaeological considerations

- 3.1.1 The evaluation involves the excavation of one archaeological evaluation trench on the site (see Fig 2). The trench will measure 7m by 2m at its base and will be excavated to an approximate depth of 2m or slightly greater to reach the upper levels of where alluvium may be encountered on the site. The predicted depths of alluvial deposits on the site will require the trench to be stepped in and evaluation trench dimensions quoted above are those at the base of the trench.
- 3.1.2 The trench will gradually be machined down to the top of the alluvium and if later archaeological remains are encountered they will be recorded. It is currently thought that most remains encountered above the alluvial deposits may be post-medieval in date and could be recorded relatively rapidly. If earlier remains are encountered and require detailed excavation and recording the timescale for the evaluation may have to be reassessed. When alluvial deposits are reached, if possible localised machine excavation will be used investigate deeper alluvial deposits to attempt to establish the full alluvial sequence on the site. If this is not possible due to the depth of deposits it will be then be investigated by MOLA Geoarchaeologists sinking an auger through these deposits using a power auger.
- 3.1.3 Initial location of the trenches will be by MOLA and breaking out of the trench will be by the Attendance Contractor appointed by MOLA and monitored by MOLA staff. The Attendance Contractor will use a JCB to excavate the evaluation trench.
- 3.1.4 All undifferentiated material of recent origin (normally defined as 20th century and later) within trenches will be removed down to the first significant archaeological horizon or upper alluvial levels. This will be done by the Attendance Contractor under archaeological supervision by MOLA. The MOLA Site Supervisor will decide when remains of archaeological significance requiring recording are revealed.
- 3.1.5 Following initial exposure of archaeological horizons, investigation will be by hand, with cleaning, examination and recording both in plan and section. Any archaeological remains revealed will be recorded in the appropriate manner (see 3.3). Resort to machine excavation may be necessary. This technique is only appropriate for the removal of homogeneous and 'low-grade' layers where it can reasonably be argued that more detailed attention would not produce information of value, and where their removal may give a 'window' onto underlying levels.
- 3.1.6 Archaeological excavation will proceed only until significant archaeological levels have been reached and will be sufficient to allow the nature and extent of these to be identified. The levels at which all excavations will cease will be determined by on-site consultations between the Archaeology & Planning Officer of the local Authority (or their agent), the MOLA Project Manager and a representative of the client or his agent.
- 3.1.7 Investigation will not be at the expense of any structures, features or finds which might reasonably be considered to merit preservation in situ Where archaeological remains are to be preserved in situ they will be adequately protected from deterioration. Normally this involves covering or wrapping the deposits and features in a geo-textile such as Terram and sealing this with a layer of sand or other suitable soft materials.
- 3.1.8 Some features, such as pits and wells may merit excavation to a greater depth, and modern cut features will be used to provide a 'window' onto earlier levels.
- 3.1.9 In addition to the excavation of man-made deposits some assessment of 'naturally deposited' levels may be necessary, especially when these are organically preserved and laid down within archaeological timescales; for example alluvial or peat deposits.
- 3.1.10 Any finds of human remains will be left in situ, covered and protected. If removal is essential it can only take place under appropriate Faculty jurisdiction, Ministry of Justice (Coroner's Division) licence, environmental health regulations, coroner's permission, and if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act. It will be necessary to ensure that adequate security is provided.

- 3.1.11 Because the timing of the evaluation is dependent on the client it remains the client's responsibility to give adequate notice to MOLA of when access is possible.

3.2 Requirements of the client/contractor

- 3.2.1 MOLA will be provided access to log the cores of any boreholes. These will be sunk within and after the excavation of relevant archaeological evaluation trenches, and every attempt will be made to use areas of greatest archaeological disturbance within the trenches opened (eg deep medieval pits or backfilled cellars).

3.3 Recording systems

- 3.3.1 A unique-number site code will be agreed with the Museum of London Archaeological Archive (LAARC).
- 3.3.2 The recording systems adopted during the investigations will be fully compatible with those most widely used elsewhere in London, and those required by the Archive Receiving Body, the Museum of London.

3.4 Treatment of finds and samples

- 3.4.1 All recovery, retention and treatment of finds and samples will be carried out mindful of the overall purpose of the exercise, ie to evaluate for further decision making, as expressed in CIFA (2014) guidelines. To this end, all artefactual and ecofactual material will be reviewed on site for its capability to inform the evaluation report.
- 3.4.2 Where necessary, a supplementary strategy for sampling archaeological and environmental deposits and structures may be developed by MOLA in accordance with GLAAS and CIFA guidelines. Advice will be sought from the LPA Archaeological Advisor and the Historic England Regional Archaeological Science Advisor throughout the project, as appropriate. Subsequent off-site work and analysis of the processed samples and remains will be undertaken by MOLA Specialists
- 3.4.3 All retained finds and samples will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in a proper manner and to standards agreed in advance with the Museum of London.
- 3.4.4 All finds of gold and silver, or other objects definable as 'treasure', will be removed to a safe place and reported to the local Coroner according to the procedures of the Treasure Act 1996 and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft.

3.5 Ownership of finds

- 3.5.1 Whereas ownership of any finds on the site lies with the landowner, it is necessary that the landowner gives the necessary approvals, licences and permissions to donate any finds recovered from the site to the Museum of London, to enable that body to carry out its obligations to curate the finds, in perpetuity, as part of the archaeological Archive from this site.
- 3.5.2 These approvals, licences and permissions shall be either confirmed in the Agreement and Contract regulating the archaeological works or confirmed by the completion of the relevant Deed of Transfer form (draft appended).
- 3.5.3 The client (or their agent) will make arrangements for the signing of the Deed of Transfer Form by the client or, if the landowner is different to the client, by the landowner.
- 3.5.4 Notwithstanding the above, subsequent arrangements may be made if required between the landowner and/or the client and the Museum for the conservation, display, provision of access to or loan of selected finds in or near their original location.

3.6 Reports and archives

- 3.6.1 On completion of the fieldwork an *Evaluation report* will be made available to the client and the Local Planning Authority within six weeks of the completion of fieldwork.
- 3.6.2 A short summary of the results of the evaluation will be submitted to the Greater London HER and NAR [using the appropriate archaeological report forms] and for publication in the appropriate academic journals.
- 3.6.3 Details of the project will be submitted to the online database maintained by the Online Access to the Index of Archaeological Investigations (OASIS) Project
- 3.6.4 GIS data will also be made available to the GLHER.
- 3.6.5 Finds and records will be curated by a single organisation, and be available for public consultation in a site archive compatible with other archaeological archives in the Museum of London and adhering to standards set out in the following:
- Archaeological Archive Forum, *Archaeological Archives: a guide to best practice in creation, compilation transfer and curation* (2011)
 - Museum of London, *General Standards for the preparation of archaeological archives deposited with the Museum of London*, (2009),
 - Museums and Galleries Commission's Standards in the Museum Care of Archaeological Collections (1992),
 - Society of Museum Archaeologists' draft Selection, Retention and Dispersal of Archaeological Collections (1992).
 - Society of Museum Archaeologists (1995) *Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales*.
 - United Kingdom Institute for Conservation Guidelines for the preparation of excavation archives for long term storage (1990)
- 3.6.6 Copyright of the written archive will be vested in the Museum.
- 3.6.7 Pursuant to these agreements the archive will be presented to the archive officer or relevant curator of the Museum within twelve months of the completion of fieldwork (unless alternative arrangements have been agreed in writing with the local planning authority). If there is further field work the archive for the evaluation will be presented with the archive for that field work.

3.7 Evaluation method agreement

- 3.7.1 An adequate archaeological methodology and trench layout for the evaluation must be approved by the Local Planning Authority prior to the start of work on site.
- 3.7.2 This recommended format attempts to define best practice but cannot fully anticipate conditions encountered as the evaluation progresses. Material changes to the approved evaluation format are however only to be made with the prior written approval of the Local Planning Authority.

4 Programme, staffing and attendances

4.1 Timetable and staffing

- 4.1.1 The timing and duration of the programme of archaeological evaluation will be determined by the contractor's overall programme and the nature and extent of any surviving remains. It is anticipated that the programme will not be longer than 3 to 4 working days.
- 4.1.2 A Site Supervisor will monitor the archaeological works, with an Archaeologist to help record and level any archaeology. It is currently estimated that this will occur over three working days. If required two MOLA Geoarchaeologists will sink an auger through deposits on the site to establish the alluvial sequence, the geoarchaeologists would require one day to undertake this work. Other specialists may be called in if necessary.

4.2 Attendances

- 4.2.1 For evaluations the attendances required by MOLA tend to be minimal. However, some provision for welfare and working conditions will need to be anticipated. Some or all of the following attendances may be required and supplied by the client or MOLA on behalf of the client.
- 4.2.2 The need for the shoring of trenches will be determined by a competent person taking into account ground conditions, groundwater conditions, weather conditions, nature of work to be undertaken, how long the work will take, adjacent structures. The shoring will be installed and maintained in accordance with CDM 2015 and HSG 150 throughout the occupancy of the site by competent sub-contractors employed by MOLA. The shoring will be inspected by a competent contractor (Not MOLA) before each shift, any event which may have affected the strength of the shoring, or any un-intentional falls of material or equipment.
- 4.2.3 Where mechanical or electric hoists are to be used in shored shafts, MOLA Health and Safety policy requires staff working in shafts less than 4m x 4m to leave the shaft before hoisting of buckets takes place and not to re-enter until the bucket is lowered back into position. Time for such evacuation will not form part of excavation programme. Beyond a depth of 3m within such shafts gas monitoring equipment will be required to ensure appropriate air quality for those working there. Where mechanical or electrical hoists are in use in larger excavation trenches, the area in which the hoist is in use must be clearly demarcated and no staff will enter this area while the hoist is being raised or lowered.
- 4.2.4 Safety guard-rails and suitable access points into the site and areas of excavation, away from any site traffic and machinery.
- 4.2.5 Ladders into all areas of excavation when the excavated depth requires such access.
- 4.2.6 If ground-water is encountered in the trenches, adequate pumps will be required to remove it in order to complete the excavations.
- 4.2.7 If necessary, tungsten halogen lamps (500W minimum) with 110-volt transformer, adequate cabling, and power supply.
- 4.2.8 A suitable security system to operate overnight, weekends and holidays.

5 Funding

- 5.1.1 Agreement on funding for the archaeological field evaluation will be sought via a separate document.

6 Bibliography

- Archaeological Archive Forum, 2011 *Archaeological Archives: a guide to best practice in creation, compilation transfer and curation*
- Chartered Institute for Archaeologists, (CIFA), 2014 *By-Laws, Standards and Policy Statements of the Chartered Institute for Archaeologists, Standards and guidance*
- DCLG [Department of Communities and Local Government], March 2012 *National Planning Policy Framework*
- Gibbard, P L, 1994 *The Pleistocene history of the lower Thames valley*
- GLA [Greater London Authority], July 2011 *The London Plan. Spatial Development Strategy for Greater London*
- Grimes, F 1968 *The Excavation of Roman and Medieval London*
- Historic England Greater London Archaeology Advisory Service, 2015 *Guidelines for Archaeological Projects in Greater London*
- London Topographic Society, 2005 *The London County Council Bomb Damage Maps 1939–45*, Publication no 164
- MoLAS, 2001 168 Tower Bridge Road, Southwark, SE1, London Borough of Southwark, An Archaeological Evaluation Report (MoLAS unpub. report)
- Museum of London, 2002 *A research framework for London archaeology*
- Museum of London, 2009 *General Standards for the preparation of archaeological archives deposited with the Museum of London*
- Museums and Galleries Commission (1992) *Standards in the Museum Care of Archaeological Collections*
- Dyson T, Samuel M, Steele, A and Wright S M, 2011 *The Cluniac priory and abbey of St Saviour, Bermondsey, Surrey Excavations 1984-95*, MOLA Monograph 50
- Pre-Construct Archaeology (PCA), 2011 5-11 Pope Street, Southwark, London, SE1 3DR, An Archaeological Desk Based Assessment (PCA unpub. report)
- Sidell, J, Wilkinson, K, Scaife, R, and Cameron, N, 2000 *The Holocene evolution of the London Thames*, MoLAS Monograph Series, 5
- Society of Museum Archaeologists (1993) *Selection, Retention and Dispersal of Archaeological Collections. Guidelines for use in England, Wales and Northern Ireland*
- Society of Museum Archaeologists (1995) *Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales*
- Southwark Council, 2007 *The Southwark Plan*
- Southwark Council, 2011 *Core Strategy*
- Treasure Act 1996 Code of Practice (2nd Revision) 1996, DCMS

7 Appendix: Draft Transfer of finds ownership form

DATED

20

[]

-AND-

THE BOARD OF GOVERNORS OF
THE MUSEUM OF LONDON

DEED OF TRANSFER
of Finds excavated at
[]

Site Code []

title to the Finds by the Site Owner to the Museum or otherwise give rise to any conflict with the provisions of this Deed;

2.1.3 [to the best of its knowledge and belief ***delete as appropriate***] at the date of this Deed the Site Owner has the unfettered right to transfer ownership and possession of the Finds to the Museum;

2.1.4 the Site Owner will at its own cost take all steps which are or may be necessary at any time to cure any defects in the title to the Finds; and

2.1.5 the Site Owner warrants that it or its contractors have complied with all of the requirements of the Treasure Act 1996 and any statutory modification or re-enactment of that Act, and all other legislative requirements relating to the Excavation.

2.2 The Site Owner will indemnify the Museum against any and all claims, demands, proceedings, costs, expenses, loss or damage, of whatever nature which may be made or brought against or incurred by the Museum arising out of or in connection with any breach of the warranties given respectively by the Site Owner in clause 2.1.

3. INTERPRETATION; GOVERNING LAW AND JURISDICTION

3.1 This Deed will be governed by and construed in accordance with the Laws of England and Wales regardless of the place of execution or performance. The English Courts will have exclusive jurisdiction to deal with any dispute or other difference arising out of or in connection with this Deed, unless the Museum chooses to invoke, or voluntarily submits to, the jurisdiction of some other tribunal.

IN WITNESS of which the parties hereto have executed this document as a Deed on the date first written above

[]
By means of these signatures:

Director

Director/Secretary

The **COMMON SEAL** of
THE BOARD OF GOVERNORS
OF THE MUSEUM OF LONDON
was hereunto affixed in the presence of:

Chairman

Secretary

8 Health and Safety Risk Assessment and Method Statement (RAMS)

8.1 Use of Risk Assessment and Method Statement

8.1.1	This section constitutes the MOLA Health and Safety Risk Assessment and Method Statement (RAMS) for 5-11 Pope Street, Southwark, SE1 6PR project dated 06/01/2016.	Project Manager responsible
8.1.2	The Project Manager is responsible for ensuring that a copy signed and approved by the Health and Safety Compliance Manager (HSCM) of the RAMS is available on site.	
8.1.3	The MOLA Site Supervisor is responsible for ensuring that all MOLA staff study and familiarise themselves with the RAMS and that they sign the health surveillance, RAMS and induction registers to indicate that they have understood and will comply with them.	Site Supervisor responsible
8.1.4	Where changes or additions to the RAMS are required these should be appended to the site master copy by the Site Supervisor and staff briefed on those changes.	

8.2 Site Specific Health and Safety Control Measures

Site Handover

8.2.1	Before MOLA commences work on site there will be a hand-over meeting on site. This may occur after initial site clearance or set-up, but before actual archaeological excavation commences. This meeting will be attended by at least one representative from MOLA and the client's team. From MOLA this might include any or all of the following, depending on the complexity of the site: the Division Director, Health and Safety Compliance Manager, Senior Project Manager, Project Manager, and the Site Supervisor(s). Similarly, upon completion of the excavation, a hand-back meeting, attended by key representatives, will be held on site.	Project Manager responsible
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Site Security and Access

8.2.2	The site will be protected by: existing fencing with suitable warning signs displayed.	Project Manager responsible
8.2.3	All visitors will report to the site supervisor.	Site Supervisor responsible
8.2.4	All visitors to site must sign the visitors' register and will be accompanied by an inducted operative for the duration of their visit or given an appropriate visitor induction.	

Trench or Work Area Access and Barriers

- 8.2.5 The Site Supervisor will establish inspect and maintain the designated safe access routes to and from MOLA excavation areas/trenches and demarcate them with suitable barriers where required.
- 8.2.6 On this site the trench will be protected by:
- Netlon fencing or similar temporary barrier system set at least c 1m back from excavation edge with suitable warning signs
- Will be backfilled as soon as practicable.

Site Supervisor responsible

Project Manager and Site Supervisor responsible

Shoring, Stepping-in, Battering Back of Excavations

- 8.2.7 On this site the excavation trench will be stepped in when required.
- 8.2.8 The need for stepping in will be the responsibility of the site supervisor.
- 8.2.9 If stepping in is not considered suitable shoring will be installed, inspected and maintained by a competent sub-contractor.
- 8.2.10 Inspection of all deep excavations will be by the site supervisor before each shift or after any event which may have affected the integrity of the excavations. The inspection of shoring may be by MOLA supervisor but only after they have received adequate instruction from the shoring installation contractor.
- 8.2.11 No MOLA staff will enter an excavation area/trench if it is declared unsafe by any competent person.
- 8.2.12 No member of MOLA staff will enter an excavation area/trench if they consider it unsafe to do so and will report the issue to the MOLA site supervisor.

Project Manager responsible

Site Supervisor responsible

Lifting Equipment (Hoists)

- 8.2.13 On this site it is not currently anticipated that any mechanical lifting equipment, (electric powered hoist or similar or machine used as a hoist) will be used. However if this does become necessary:-
- 8.2.14 The hoists or machines used as hoists will be installed and operated by a competent sub-contractor.
- 8.2.15 The MOLA supervisor will ensure that the sub-contractor carries out all statutory inspections as required.
- 8.2.16 Where mechanical hoists are used, MOLA staff will leave shafts or trenches of less than 4m x 4m before hoisting of buckets takes place and not to re-enter until the bucket is lowered back into position UNLESS:
- Enough space or protection is available within the shaft so that staff will not be at risk should the bucket fall
 - A banksman (top person) is present to ensure that the bucket is not lowered or suspended over the shaft while staff are below

Project Manager responsible

Site Supervisor responsible

- There is clear agreement that the hoist, or machine operating as a hoist, will not be in operation for a specified period and will not recommence operations without the agreement of the MOLA supervisor.



Underground and Overhead Utility services

- Irrespective of the availability of utility service diagrams for the site, all MOLA excavation areas and trenches will be scanned with a cable and pipe locator (CAT). The CAT will be fully checked and certificated within the last 12 months and will only be used by a person trained and competent to do so. The excavation area or trench will be scanned:
 - Before any machine excavation commences including breaking out.
 - Immediately after the breaking out and removal of any surface concrete.
 - Before any further levels of machine excavation.

Site supervisor responsible

8.2.17 All underground and overhead utility services will be assumed to be live and be subject to an exclusion zone by MOLA until proved otherwise or been made safe by a competent person.

8.2.18 In the event of the accidental disruption of a live utility service by MOLA or contractors working for MOLA the Site Supervisor will inform the Project Manager and, when appropriate, call the relevant emergency number for the utility service owner.

8.2.19 Where for whatever reason the making safe of any under- or overhead services relevant to MOLA works does not happen MOLA may need to remove its staff from the site or an area until it has been made safe.

Hazardous Chemicals (COSHH)

8.2.20 On this site the following COSHH controlled substances will/may be used:

- Spray Paint
- Petrol (for a Power Auger)

Project Manager responsible

8.2.21 All COSHH controlled substances in use on site will be accompanied by a material safety data sheet (MSDS), and a risk assessment detailing control measures for safe use, transport, storage, disposal and emergency procedures.

Site Supervisor responsible

8.2.22 A site specific risk assessment under COSHH will be undertaken by a competent person for any COSHH controlled substance discovered or subsequently used on site which is not presently foreseen. This will include the sourcing of a material safety data sheet (MSDS), and control measures for safe use, transport, storage, disposal and emergency procedures.

Contaminated Land

8.2.23 MOLA has not so far received a copy of a contamination/ground conditions/environmental report for the site. Previous documented land usage suggests that there may be some potential for contamination on the site. As a result of previous documented land usage particularly in relation to the use of the site as a glue factory at the close of the 18th century and its location adjacent to a tannery in the late 19th century.

Project Manager responsible

<p>8.2.24 The following minimum precautions will apply to all MOLA sites, excavation areas and trenches. Staff will:</p> <ul style="list-style-type: none"> - Be subject to daily, simple health monitoring by their supervisor. - Wear all required and appropriate PPE when working in the excavation area/trench i.e as a minimum in this context gloves suitable for site work. - Not eat drink or smoke in the excavation area/trench or outside designated zones. - Wash hands before eating drinking or smoking - Consider the environment and not dispose of spoil or site waste down drains or in water courses or similar. - Report signs of any contaminants on site to their supervisor eg discarded containers, odd coloured deposits, or strange smells. 	<p>Site Supervisor responsible</p>
<p>8.2.25 The site supervisor will inform the Project Manager or Principal contractor as appropriate if contaminants are discovered and assist in the production any necessary risk assessment and safe system of work</p>	

Asbestos

<p>8.2.26 All work on this site will be external. No work will be undertaken within a standing building or structure, therefore structural, above ground asbestos is not considered a significant hazard.</p>	<p>Project Manager responsible</p>
<p>8.2.27 Where asbestos is a known ground contaminant (see previous section) or discovered below ground during the course of MOLA works, it will be a subject to an individual risk assessment and safe system of work based on its type, condition and extent.</p>	<p>Site Supervisor responsible</p>
<p>8.2.28 MOLA is not a HSE licensed Asbestos contractor. MOLA will not remove, transport or store asbestos. MOLA staff will</p> <ul style="list-style-type: none"> - Not interfere with the above ground fabric of a building and will not knowingly disturb any materials they know or suspect to be asbestos above or below ground. - Report all suspected finds of asbestos to their supervisor and not resume work in the affected area until a safe system of work is in place 	

Human Remains

<p>8.2.29 On this site it is not anticipated that human remains will be present.</p>	<p>Project Manager responsible</p>
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Confined Spaces

<p>8.2.30 The Project Manager in consultation with the MOLA Health and Safety Compliance Manager will consider if an excavation area or trench or other work area requires Confined Space designation, what the level of risk is and what precautions are required to work within the space. Work areas may become Confined Spaces as work progresses.</p>	<p>Project Manager responsible</p>
<p>8.2.31 Where a Confined Space is designated by a Principal Contractor, MOLA will work in accordance with the designation, assessment of risk and safe systems of work implemented as a minimum standard required.</p>	
<p>8.2.32 At the time of writing no areas or trenches have been defined by MOLA or</p>	

the client as Confined Spaces. This will be kept under review.



Unexploded Ordnance

8.2.33 The documentary evidence indicates that during WWII the London County Council bomb maps for the area show the site as 'seriously damaged but repairable' (London Topographic Society 2005, map 77).

Project
Manager
responsible

8.2.34 The following minimum precautions will apply to this site irrespective of defined UXO risk. MOLA staff will:

- Not touch suspected unexploded ordnance unless safe to do so.
- MOLA staff will report any suspected unexploded ordnance found to their supervisor who will inform the principal contractor (if applicable) or police.
- MOLA staff will vacate the danger area and not return until suspected ordnance has been identified and removed or made safe.

Site
Supervisor
responsible

Plant

8.2.35 On this site the following plant will be operated by a MOLA sub-contractor using a JCB.

Project
Manager
responsible

8.2.36 All plant sub-contracted to MOLA will be 'suitable for purpose' and operated by trained and certificated contractors.

8.2.37 The MOLA site supervisor will check that the operators have a CPCS qualification or equivalent and not allow un-certificated operators to work on site

Site
Supervisor
responsible

8.2.38 The MOLA site supervisor will ensure that all plant is inspected as required by the operator and in a fit state to use. Defective plant will not be used.

8.2.39 All plant operations on the site will be subject to a risk assessment and safe system of work and will be under the supervision of the MOLA site supervisor.

8.2.40 All plant operation within MOLA work areas will be under the supervision of the MOLA site supervisor and banksman where required.

Site
Supervisor
responsible

8.2.41 MOLA staff working near plant will ensure that operators are aware of them, not approach unless the operator has indicated that it is safe to do so and maintain a safe distance at all times. MOLA staff will not work near plant operated erratically.

Power Tools

8.2.42 On this site MOLA MAY be using a petrol Power Auger.

Project
Manager
responsible

8.2.43 The electric Power Auger will only be used by staff trained and certificated to do so and will be subject to a task and equipment specific risk assessment and safe system of work.

Site
Supervisor
responsible

Sub-contractors

8.2.44 On this site MOLA will be employing the following sub-contractors:

- Plant Hire

Project
Manager
and HSCM
responsible

8.2.45 In order for MOLA to assess competence and commitment to Health and Safety the sub-contractors to be employed by them on this site have provided MOLA with their company Health and Safety Policy and filled in a confidential MOLA questionnaire, which has been evaluated by the Health and Safety Compliance Manager and others where appropriate. Copies of this can be made available in confidence on request to the client or appointed Principal Contractor where applicable.

8.2.46 The sub-contractors work will be restricted to the following aspect of the project and supervised by the MOLA site supervisor:-

8.2.47 Machine excavation of the evaluation trench and its subsequent backfilling.

Site
Supervisor
responsible

Emergency Procedures

8.2.48 On this site the fire emergency procedures will be determined by the site supervisor on the first day of work. The emergency procedures will include:

- Fire extinguisher
- The fire safety co-ordinator/marshal
- The fire exit routes
- The emergency assembly point
- The alarm will be raised by shouting by the first person to discover the fire

Site
Supervisor
responsible

Emergency Contact Details

8.2.49 In all emergencies the MOLA site supervisor will be responsible for summoning the relevant emergency services (999) and liaising with them on site. For non-emergency injuries and other contact with the emergency services as might become necessary during the project, the following contact details are provided

Site
Supervisor
responsible

Service	Nearest
The nearest Accident and Emergency Unit (or Minor Injuries Unit if A&E too far) is located at:	Address: Urgent Care Unit Guy's Hospital Ground floor, Tabard Annexe, Great Maze Pond, London SE1 9RT Phone number: 020 3049 89700 Quickest Route from site: North to Tanner Street and west into Tower Bridge Road, south to Long Lane, west along Long Lane. Turn right/north into Kipling Street. Left/East into Snowfields, North/right into Great Maze Pond – Urgent Care half way up on

	right. Nearest Station: London Bridge
The nearest Police station is located at	Address: Southwark Police Station 323 Borough High St, London, SE1 1JL Telephone number: 020 7378 1212 Quickest Route from site: North to Tanner Street and west into Tower Bridge Road, south to Long Lane, travel 1km to Borough High St/A3, Turn left onto King's Place, destination will be on the left. Nearest Station: Borough
The nearest Fire station is located at:	Dockhead Fire Station 8 Wolseley Street SE1 2BP Phone: 999 in an emergency Quickest Route from site: North to Tanner Street and west into Tower Bridge Road to Tooley Street, east into Tooley Street to Dockhead and Wolsley Street. Nearest Station: Bermondsey

8.2.50 The out of hours emergency MOLA contact for the site will be:

Name	Role	Out of Hours Contact Number
Derek Seeley	Project Manager	07860 716340

First Aid and Injury

- 8.2.51 On this site MOLA will provide all first aid requirements, this will include:
- A first aid kit(s), of an appropriate size for the site, located in the site office/mess hut/canteen.
 - At least one qualified first aider who will normally be the site supervisor

Project Manager and HSCM responsible

8.3 Welfare

- 8.3.1 On this site the MOLA fieldwork may extend, over several days to one week, the MOLA archaeologist(s) will require access to toilets with hot and cold water, office space for working on the archaeological records and for storing finds, and a lockable facility for storage of tools and equipment. These facilities will be supplied by the Client.

Client responsible

- 8.3.2 The MOLA site supervisor will ensure that any accommodation or and welfare facilities used by MOLA staff and MOLA sub-contractors is kept clean and tidy and in a fit state to be used.

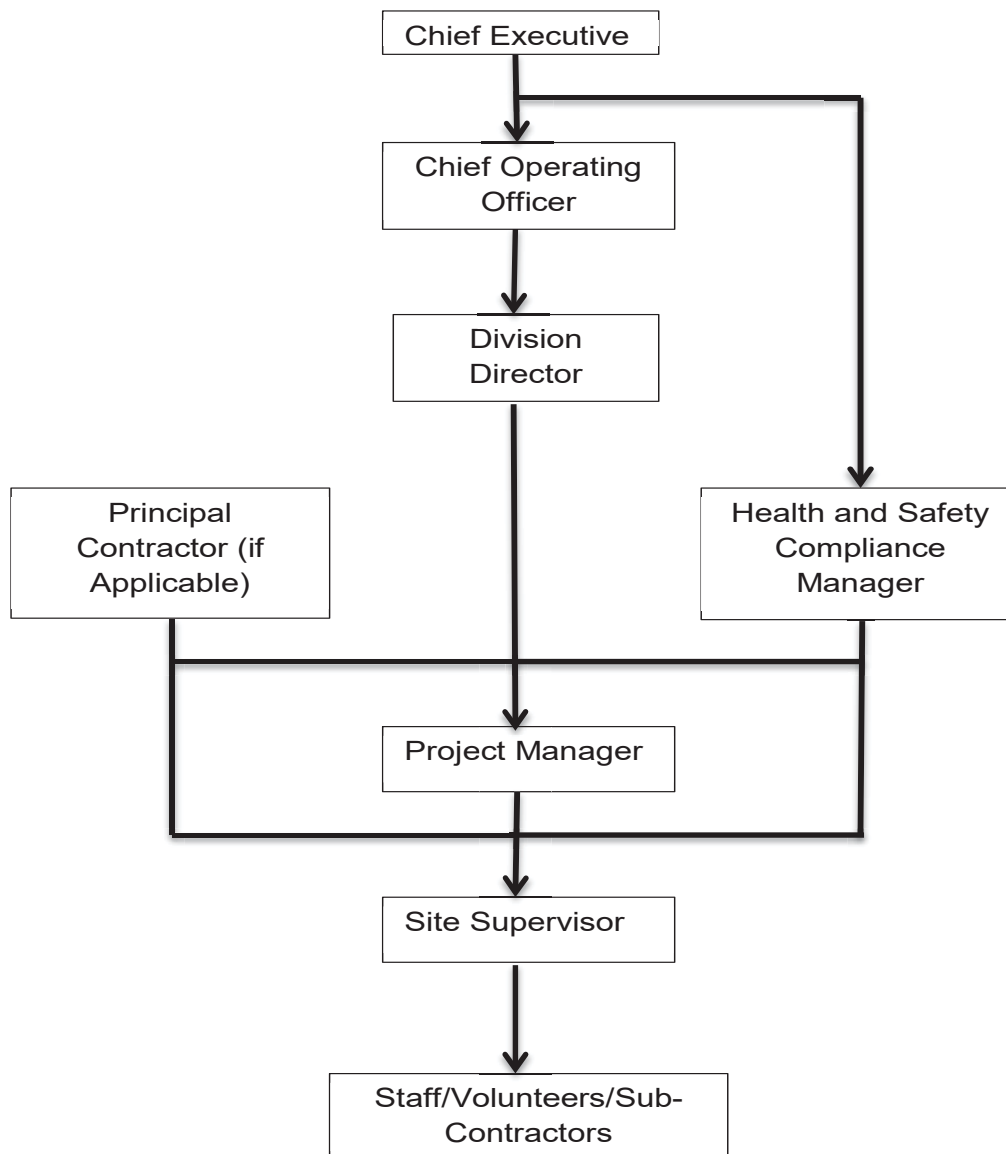
Site supervisor responsible

8.4 Co-operation with other contractors

- 8.4.1 The appointed MOLA site supervisor will act as the principal liaison with the Principal Contractor and all other contractors where applicable.
- 8.4.2 The MOLA Site Supervisor will ensure the liaison is regular and sufficient to guarantee that:
- all contractor works within or immediately adjacent to MOLA works have been risk assessed and the control measures in place adequately protect MOLA staff. This will apply particularly to high risk activities such as plant operations piling and demolition.
 - all MOLA works are risk assessed with regard to contractors within or adjacent to MOLA works to ensure that control measures are in place to assure their safety

Site Supervisor responsible

8.5 MOLA H&S Project Responsibility Flow chart



8.6 Non-site specific MOLA H&S information

Health and Safety Policies

- 8.6.1 MOLA staff will at all times comply with all existing national legislation regarding Health and Safety at work.
- 8.6.2 All MOLA staff will adhere to the Health and Safety procedures and rules laid down in the MOLA Health & Safety Policy and MOLA Site Safety Rules. Copies of these documents will be available for inspection on site.
- 8.6.3 In so far as they do not contradict procedures laid out in our own H&S Policy or current legislation, MOLA staff will also comply with any on-site Health and Safety procedures and instructions provided by the client or their appointed Principal Contractor.

All MOLA
staff
responsible

Project Inspection and Audit

- 8.6.4 MOLA's Health and Safety Compliance Manager (HSCM) will carry out inspections of projects as applicable. In the absence of the HSCM this task may be undertaken by a deputy. The HSCM will issue immediate instructions or recommendations to the MOLA site supervisor and/or Project Manager for any required improvements in on-site health and safety. This will normally be followed within one day by a digital report to the Project Manager and other managers as appropriate for action. This report will be made available to the client and/or Principal Contractor where requested.

HSCM
responsible

MOLA H&S accreditation

- 8.6.5 MOLA is an accredited contractor with the Contractors' Health and Safety Scheme (CHAS) a founder member of Safety Schemes in Procurement (SSIP). MOLA is also accredited with PICS, Construction Line and the Achilles Utilities Vendor Database. These demonstrate compliance with sound H&S management practise.

HSCM
responsible

MOLA and Construction Design and Management Regulations CDM 2015

- 8.6.6 Archaeology as a stand-alone activity and profession is not considered to be part of the construction industry and is specifically exempt from the CDM regulations 2015 where undertaken alone as pre-construction work.
- 8.6.7 However, where archaeological work is undertaken as part of a construction project, that is during the construction phase, that work must conform to CDM 2015.
- 8.6.8 MOLA is generally classed as a Contractor under the regulations for a construction project, but may be considered a Designer in certain circumstances.
- 8.6.9 The HSE does not regard any archaeological contractor as competent to act as Principal Contractor for a construction project. However where the activities on site for a construction phase are predominantly archaeological in scope, MOLA will consider acting as Principal Contractor if it believes the work lies within its competence.
- 8.6.10 Any request for MOLA to act as a Principal Contractor on a project must be referred by the project manager to their Division Director and/or the Chief Operating Officer for decision acting on the advice of the HSCM.

Project
Manager,
Division
Director,
Chief
Operating
Officer,
HSCM
responsible

MOLA staff information

- 8.6.11 MOLA Human Resources department ensures adherence to all UK employment legislation covering the legal right to work in the UK of all staff.
- 8.6.12 In compliance with the Data Protection Act (1998) and to protect the personal and financial safety of our staff, MOLA will not provide personal data for MOLA staff to clients, Principal Contractors, or other bodies without the written permission of those staff. We will also seek to ensure that such information is being securely held and responsibly used by the organisation seeking it and not provide the information without first obtaining a written assurance to that effect.

HR
responsible

Project
Manager
responsible

Construction Service Certification Scheme (CSCS)

- 8.6.13 Archaeological contractors are classed as Construction Related

Line

Organisations under the Construction Service Certification Scheme. All relevant MOLA staff have or are in the process of obtaining a CRO White Card for Archaeological Technician (Code 5363).

Managers,
HR and
HSCM
responsible

Inductions, Task Briefings and Tool Box Talks

8.6.14 All members of MOLA staff are sufficiently fluent in both spoken and written English to understand all verbal and written safety instructions and warnings on site.

HR
responsible

8.6.15 All MOLA staff and volunteers receive a full day's Induction, including Health and Safety, on commencement of their first day of work with MOLA

HSCM
responsible

8.6.16 The MOLA Site Supervisor is responsible for ensuring that all MOLA staff, volunteers and sub-contractors working on site receive an H&S Induction whether given by MOLA or a Principal Contractor.

Site
Supervisor
responsible

8.6.17 Where the site is controlled by MOLA, the MOLA site supervisor will give a health and safety induction to all staff, volunteers and sub-contractors prior to commencement of work on their first day on site.

8.6.18 When given by a MOLA Site Supervisor the H&S Induction will always include all the following: Supervisors; Site layout (work areas, 'no-go' areas, pedestrian routes etc); Fire precautions; First Aid precautions; nearest Accident and Emergency Unit; Accident reporting; Welfare (office, washing, toilets etc); Site Security; Contractor Key Personnel; Significant Hazards.

8.6.19 Where a site is under the control of a Principal Contractor, MOLA staff will attend the site induction given by the Principal Contractor before attending a MOLA site RAMS specific induction given by the site supervisor

8.6.20 The MOLA supervisor will ensure where appropriate that all staff, volunteers and sub-contractors receive daily pre-start briefings for the tasks they are to undertake that day.

8.6.21 Where appropriate e.g. Projects with more than one-two staff and of more than a week's duration, regular toolbox talks will be given by the MOLA Supervisor or other suitable member of staff. As a minimum requirement these talks will occur once a week and be of 10-15 minutes duration.

8.6.22 A signed record of all on site inductions, task briefings and tool-box talks will be maintained by MOLA for inspection

Health and Safety Training

8.6.23 It is MOLA policy to ensure that resources are available so that all staff receive adequate and appropriate training and certification to perform their duties safely, and that this training is undertaken as promptly and regularly as is reasonably practicable.

HSCM
responsible

8.6.24 MOLA provides Project relevant Health and Safety Training for its staff as follows:

Training	All Staff	'Field staff'	Supervisory staff	Management staff	HSCM responsible
Manual Handling	✓				
Asbestos awareness	✓				
Safety in Excavations		✓			

Quarry Passport		✓		
Entry into Confined Spaces with Breathing Apparatus		✓		
UXO Awareness		✓		
IOSH Supervising Safely training or Site Supervisors Safety Training Scheme as appropriate			✓	
First Aid at Work training			✓	
Cable Location training			✓	
Competence in Chainsaw and Related Operations Level 2		✓ (selected)		
IOSH Managing Safely training				✓
Health and Safety management Seminars				✓

MOLA Hours of work

- 8.6.25 MOLA staff will generally work Monday to Friday from 8.0/8.30am until 4.30/5.0pm on site, with suitable breaks conforming to all legal requirements. Where requested and funded by the client any overtime worked will also conform to legal requirements with regard to duration and breaks. MOLA staff contracts permit only voluntary overtime over 40hrs per week.

Project Manager responsible

MOLA staff behaviour on site

- 8.6.26 Mobile phones, personal CD players, I-pods and similar will not be used by MOLA staff in archaeological trenches or areas of work. Smoking and naked flames are/is not permitted in the trenches or areas of work. Alcohol is not permitted anywhere within the site.

Site Supervisor responsible

- 8.6.27 MOLA operates a zero tolerance policy towards any form of bullying or harassment (sexual, racial or other) by its staff towards anyone. (A) Any member of MOLA found responsible for such behaviour will be removed from the site immediately and may be subject to further disciplinary action. (B) MOLA further expects that the Principal Contractor will take similar measures with any of its staff, or those of any other contractors on site, who are responsible for such actions towards MOLA staff. All such instances will be formally reported through the MOLA Project Manager to the Principal Contractor. If remedial action is not promptly taken by the Principal Contractor MOLA reserves the right to withdraw its staff temporarily from site. Such withdrawal will constitute a withdrawal for the safety of its staff as per para 9.6.36 and may incur additional costs.

A - Site Supervisor responsible

B Principal Contractor responsible

Personal Protective Equipment (PPE)

- 8.6.28 On field projects all MOLA staff will wear or use the following PPE as a

Site

minimum unless specified as not required by the site supervisor:

- Safety Helmet (EN397)
- Safety footwear - steel toecap and mid-sole boots or Wellingtons EN345-47
- High-visibility vest or jacket (EN471)

Supervisor
responsible

8.6.29 Where required, MOLA staff will be supplied with and wear task specific PPE such as:

- Safety spectacles (EN166)
- Gloves, (nitrile, nitron, 'Grippa' or latex disposable EN374, 388, 420)
- Ear Defenders (EN 352-3)
- Goggles (Chemical BSEN 166 Type 3)
- Dust masks valved FFP3 (EN149 2001)
- Half masks and filters (EN140 & A1B1E1K1P3)
- Disposable overalls (Type 5/6 disposable EN340)
- Fall arrest harnesses (EN361) with Lanyards (EN355) and connectors (EN362), winch and tripod.
- Escape Set and Breathing apparatus, full-face respirator (EN136) filter (A1B1E1K1P3), PVC gauntlets, chemical overalls (type 3)

Safety Documents

8.6.30 The MOLA site safety documents will be located with the first aid kit in the site office/mess hut/canteen. The safety documents will include:

- Current Health and Safety at Law Poster
- MOLA H&S policy
- MOLA site rules
- Where to get first aid poster
- Accident/Near Miss/Witness statement forms.
- MOLA Insurances summary
- Induction prompt sheet
- CAT procedure
- Safety signs
- Tool box talk registers

Site
Supervisor
responsible

Accident reporting

8.6.31 All accidents, dangerous occurrences and near misses, including those that do not cause injury, will be reported immediately to the MOLA supervisor for recording, investigation and action to prevent re occurrence where appropriate.

Site
Supervisor
responsible

8.6.32 Where the site is controlled by a Principal Contractor the MOLA site supervisor will ensure that all accidents, dangerous occurrences and near misses are reported to the Principal Contractor and that the Principal Contractor's reporting and investigation procedures are followed.

8.6.33 The *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations* (RIDDOR) sets out requirements for the reporting of certain types of accidents and incidents. RIDDOR notifiable accidents and incidents and other serious accidents and incidents that may not be covered by RIDDOR will be reported immediately by the MOLA site supervisor to:

- the MOLA Health and Safety Compliance Manager, who will inform the appropriate enforcing authority, normally the Health and Safety Executive and commence an investigation into the incident as outlined in Section 11 of the current Health and Safety policy document.
- their line manager, the MOLA Project Manager, the Principal Contractor or the client's representative on site

8.6.34 If necessary and practicable the scene of the accident will be sealed off by

MOLA and left undisturbed until the HSE's Inspector and any other interested party have carried out an investigation.



Stoppages

- 8.6.35 Where MOLA considers a work area unsafe or the safety of MOLA staff is endangered by others, MOLA will inform the client and or Principal Contractor of the unsafe conditions (which will be confirmed in writing if a claim for compensation is to be made). If reasonable steps are not taken within a reasonable timeframe to make the area safe then MOLA reserves the right to withdraw its staff and workforce from that area until it is safe, and the period of time of the withdrawal will be added to any agreed period of work. If MOLA is unable to find suitable work to redeploy such staff financial compensation may also be sought.

Project
Manager
responsible

8.7 Preliminary Site Risk Assessment

- 8.7.1 MOLA has undertaken a preliminary risk assessment of the hazards to employees, other contractors, and visitors, to which they may be exposed whilst they are on site.
- 8.7.2 This preliminary assessment is not intended to, and cannot, replace the need to review and undertake further risk assessments as required once work on site has commenced.

Project
Manager
responsible

- 8.7.3 Risk assessments are part of the project RAMS and will be communicated at induction and where relevant thereafter via pre-start briefings to all staff, volunteers and sub-contractors working on the project.
- 8.7.4 The Site Supervisor will be responsible during the site work for the monitoring and review of the risk assessments and the communication of all modifications and additions to the risk assessments to all relevant parties.

Site
Supervisor
responsible

Risk Assessment Register

MOLA RISK ASSESSMENT REGISTER			
For Site/Task: 5-11 Pope Street, SE1		Type: Evaluation	
Persons Affected	No	Classification	No
Employees	4	Experienced	4
Other workers	1	Inexperienced	-
Public	-	Disabled	-
Tick known or suspected hazards on site and complete a risk assessment for each one			
1 Access		25 Manual Handling	X 49 COSHH: Petrol
2 Ladders	X	26 Fumes/Gas	X 50 Spot Dating
3 Plant	X	27 Dust	51 Glass Recording
3a Plant (loading and unloading)		28 Noise	X 52 COSHH:Sthil Lubricant
4 Dumpers		29 Deep Excavations	X 53 COSHH:Sthil two stroke oil
5 Scaffolding (inc Towers)		30 Power Tools	X 54 SHARPS (hypodermics)
6 Excavations	X	31 Vibration	X 55 Task Lighting (laniro etc)
7 Work at height	X	32 Vehicles (Driving)	56 Site Walk Over
7a Work at Height (Cherry Picker)		32a Vehicles (Site)	57 Processing: Finds washing
8 Slips, Trips, falls	X	32b Vehicles (load/ unload)	57a Processing: Environ samples
9 Underground services	X	33 Lifting Equipment	57b Processing: Artefact marking
10 Overhead Power Lines		34 Plant (lifting)	57c Processing: Manual handling
11 Electrical		35 Human Remains	57d Processing: Power hose
12 Fire (inc LPG)		36 Public Safety	57e COSHH: Parafin (Processing)
13 Confined spaces		37 Violence	58 Office Work
14 Breaking Out	X	38 Chainsaw	59 DSE (Work Stations)
15 Hand Tools	X	39 Power Auger (COBRA)	X 60 Young Person
16 COSHH: Spray paint	X	39a Power Auger (Comp)	61 Person Specific/Pregnancy
17 Contaminated Land	X	39b Power Auger (Electric)	62 Light Duties
18 Weil's Disease	X	40 Hand Auger	63 Individual Stress
19 Psittacosis		41 Foreshore/water	
20 Tetanus		42 Adverse Weather	
21 UXO	X	43 Spoil Mounding	X
22 Asbestos (Buildings)		44 LPG(Butane)	
22a Asbestos (Ground Contam)		45 Waste	
23 Welfare		46 Storage	
24 Lone working		47 Animals	
24a Empty Premises		48 Non-ionising radiation	
General Controls			

Project Manager in overall charge of project is: Derek Seeley Ph: 0207 410 2274

Supervisor(s) in daily charge of project is:

Number, training and experience of supervisors will be sufficient for the project

All staff will comply with the: MOLA H&S policy, MOLA and/or principal contractors site rules, the project RAMS, safe systems of work and permits to work.

All staff will have sufficient training and experience for the tasks they undertake or be under close supervision

All staff will hold a CSCS card appropriate to their profession or be in the process of obtaining one where appropriate

All staff will be fit to undertake their work

All staff will be inducted on first day of work and briefed on the project RAMS.

The full site induction will be undertaken by the MOLA supervisor if no principal contractor present.

All staff will sign the induction and RAMS register to confirm that they have received, understood and will comply with both.

Tool box talks/staff briefings will be conducted on the hazards and control measures on a regular basis


Appropriate PPE to be worn for each task.

Minimum site PPE (unless otherwise stated by supervisor): Steel Toe-cap/midsole boots, Safety helmet, high visibility vest or jacket.

First Aid kit on site, First aider/appointed person on site. Nearest accident and emergency unit located and contact numbers obtained

Competent Person(s) appointed to take action: H&S Manager Ian Grainger Project Manager Derek Seeley ?Project officer ?Senior Archaeologist ?Senior Geoarchaeologist/matician ?sub-contractor	All Risk Assessments seen by (initials)	
	PM	Archaeologists
	SA(s)	
	Client	
	Principal Contractor	
	Other	

8.8 Specific Risk Assessments

MOLA RISK ASSESSMENTS					SITE: 5-11 Pope Street, Southwark, SE1 3PR			
APPROVAL (Name and Title)					SIGNATURE			DATE
Prepared by:		Pat Miller			P Miller			06.01.2016
Approved by:		Ian Grainger						29.01.2016
RA N°	ACTIVITY	Hazards	RISK	Risk Class L/M/H	N° at Risk	Control Measures	Final Risk: I/ L/M/H	Action by
0002	LADDERS	Fall of person from ladder, Fall of material from ladder, Collapse of ladder,	Personal Injury, Equipment Damage	M	4	Use correct length and type, not painted. Daily inspection when in use, do not use if damaged. Must project at least 1.50m above stepping off point. Check/Fix securely at top and base. Check/Install at an angle of 75 degree (1:4 ratio over length). Three points of contact: make sure any load can be carried comfortably with one hand free for ladder.	L	Supervisor and staff
0003	PLANT JCB for evaluation trench excavation	Persons Struck by Machine Shovel or load dropping Hydraulic fluid spray Overturning of machine Fire/explosion	Personal Injury, Equipment Damage	M	4	MOLA staff will not operate plant. Check operator trained and certificated and not permit uncertified operators to start work. Operator must inspect plant before work commences and before each shift. Defective plant must not be used. Service and repair by qualified contractor only. Operations supervised by MOLA staff (supervisor or deputy). Plant to be switched off and secured when not in use. Speed restrictions for JCBs. Separate routes and work areas for plant and pedestrians, warning signs to be displayed where practicable. No work with or near plant operator under influence of drugs/alcohol or behaving erratically. Operations to be under supervision of MOLA supervisor or deputy and trained banks person also where applicable. Staff working near machine to ensure that the operator has seen them and that they are at a safe distance. Staff briefed on plant operations and changes to them. High visibility clothing.	L	Supervisor and staff

0006	EXCAVATION Of 7m x 2m x 2m or greater depth of evaluation trench (at base) – will be stepped in so greater at ground level	Collapse of sides Fall of persons Falls of Plant, equipment, material Flooding	Personal Injury, Equipment damage	M	4	Determine the depth for the installation of shoring/ battering back as outlined in WSI. Shoring will be installed by competent sub-contractor and maintained by them. Shoring will be inspected by competent sub –contractor or MOLA supervisor instructed by them. Netlon fencing or similar will be erected c1m back from trench edge and warning signs displayed. Supervisor will report unsafe excavations to principal contractor. Staff will not enter any excavation they consider unsafe until it is made safe. Staff will report unsafe excavation to supervisor. Warning and information signs in MOLA excavations. Pumps if required inspected and certified.	L	Supervisor and staff
0007	WORK AT HEIGHT Working near deep trenches.	Falls of Persons Falls of materials and equipment	Personal injury, Equipment damage.	M	4	Competent person to determine if work at height. Safe access (ladder or stairs?) Safety harnesses and lanyards if required secured to fixed point. All equipment will be checked daily/before each shift by competent person Staff screening for task suitability – fear of heights etc.	L	Supervisor and staff
0008	SLIPS/TRIPS/ FALLS	Falls of persons Dropping of equipment/material	Personal injury, Equipment damage	M	4	Assess work in adverse weather and suspend if appropriate. Keep all surfaces level and dry where practicable. Keep all areas free of unnecessary obstruction and debris. Keep all areas well lit. All safe pedestrian routes to be sign posted. Staff to be physically fit for the conditions on site. No running or horseplay. Be cautious moving about site.	L	Supervisor and staff
0009	UNDERGROUND SERVICES (UTILITIES) Electricity, Water, Sewage/foul water Gas. Fibre optic etc .	Electrocution Flooding Asphyxiation Fire/explosion Bacterial infection	Personal injury, Equipment and environmental damage, Annoyance to public	M	4	Obtain utility plans where available. Obtain utilities companies emergency contact details. Visually inspect site for manholes etc. Redesign works to avoid remaining live utilities where possible. Mark all known live utility routes on ground Where applicable employ trained sub–contractor to hand dig to locate live services in excavation All sites Briefing on live utilities to be given to all staff Competent person will use a cable location scanner calibrated	L	Supervisor and staff

						<p>within last 12 months to scan for live electrical services: before initial breaking out; before machine clearance of first level; and each machining level thereafter.</p> <p>Any utilities remaining live in excavation areas will be clearly demarcated and segregated. - 1m either side zone.</p> <p>Work will stop on discovery of unidentified service and not resume until confirmed/made safe.</p> <p>Inform utilities company or principal contractor of discovery of any unrecorded service.</p> <p>Inform utilities company or principal contractor immediately of any contact with live utility.</p>		
0014	<p>BREAKING OUT</p> <p>Breaking out slab or foundations</p> <p>Breaker attached to JCB</p>	<p>Falling/flying objects</p> <p>Striking underground utilities</p> <p>Fire/explosion</p> <p>Collapse of structure</p> <p>Dust</p> <p>Noise</p>	Personal Injury, Equipment damage	M	4	<p>MOLA staff will not undertake demolition or breaking out</p> <p>Notify local authority of works, Liaise with any neighbours, minimise noise levels/ duration and restrict times where applicable.</p> <p>Conduct buried Utilities risk assessment.</p> <p>Control dust –damp down, provide ventilation.</p> <p>Demarcate and barrier off work areas -Use warning signs.</p> <p>All sites</p> <p>Maintain safe distance from breaking out.</p> <p>Wear eye protection.</p> <p>Wear P3 dust mask if applicable.</p> <p>Wear correctly rated ear protection.</p>	L	Supervisor and staff
0015	<p>HAND TOOLS</p> <p>Covers use of: Mattock, Shovel, spade, pick axe, trowel, draw hoe, garden fork, hand shovel, brush, lump hammer, sledge hammer, chisel, bolster and similar simple non mechanical tools</p>	<p>Manual handling</p> <p>Impact from tool</p> <p>Impact from flying debris</p>	Personal injury, property damage	M	4	<p>All hand tools to be to industry safety standard.</p> <p>Inspect tools on delivery.</p> <p>Discard tool if not fit for purpose.</p> <p>Assess staff fitness to use tools.</p> <p>Task briefing where applicable.</p> <p>Training and supervision for inexperienced staff.</p> <p>Adequate breaks/rest periods</p>	L	Supervisor and staff
0016	<p>COSHH (SPRAY PAINT)</p> <p>For trench marking out etc</p>	<p>inhalation, ingestion, absorption dermal contact</p>	Personal injury, illness.	M	2	<p>Material Safety Data Sheet and COSHH assessment to be present on site.</p> <p>Brief staff on instructions for product</p> <p>Follow safety instructions for use, transport, storage and disposal.</p>	L	Supervisor and staff
0017	<p>CONTAMINATED LAND</p> <p>Previous documented land usage suggests that there may be some potential for contamination on</p>	<p>solid/liquid contaminants</p> <p>Gas/fumes/airborne particles</p> <p>Ingestion, inhalation, dermal contact</p>	Personal injury, illness damage to the environment	M	4	<p>Review site history.</p> <p>Obtain contamination report if available.</p> <p>Locate work areas to avoid known contaminants where possible.</p> <p>Establish clean (welfare) and dirty (work) areas of the site.</p> <p>Brief staff on known or suspected</p>	L	Supervisor and staff

	the site - . site in use as a glue factory at the close of the 18th century and was adjacent to a tannery in the late 19th century	Pollution of water table, drains, water supply Pollution of atmosphere				contaminants at induction. Provide washing facilities with hot and cold water, soap and towels. Provide full decontamination unit if necessary. Avoid contact with water table/drainage Mound spoil correctly and cover as appropriate. Control dust levels. Reduce exposure time by staff rotation/breaks High standard personal hygiene: wash hands before eating drinking smoking. No eating, drinking, smoking, in contaminated areas. Wear gloves in the contaminated areas. Conduct basic health surveillance. Report all ill health. Report all suspected contaminants – strange smells, strange looking deposits. Cease work area until contaminant is identified and safe system of work in place. Provide disposable tyvek overalls, respirators/P3 rated dust masks, wellington boots, rubber gauntlets if necessary		
0018	WIELS DESEASE (leptospirosis) RATS Identify and deal with any significant rat presence on site prior to commencement of works where possible.	Rat (and Cattle) faeces and urine	Personal injury Illness	L	4	Brief staff on hazard. Carry HSE G 406 instruction card Wear gloves. Clean and cover any cuts or abrasions promptly with a waterproof plaster. Wash hands before eating, drinking, smoking. No eating drinking and smoking outside designated areas. Keep Welfare facilities dry, tidy and secure. Keep food covered and secure. Basic surveillance of staff for flu like symptoms. Report ill health.	I	Supervisor and staff
0021	UNEXPLODED ORDNANCE Some bomb damage WWII	Explosion Fire	Personal Injury, death, Equipment and property damage, Disruption to locality Public anxiety	L	4	Report all discoveries of suspected UXO Vacate and cordon off area immediately Inform UXO specialist (if on site) and principal contractor (or Police in PC not present), Inform contract manager, and Hand S Manager Do not re-enter area until given all clear	I	Supervisor and staff
002a	ASBESTOS (Within site area, above ground) Suspected Asbestos as loose broken sheet material identified stacked on the SW corner of the site footprint	Inhalation of asbestos fibres	Chronic Illness, death asbestosis	M	2	MOLA not licensed asbestos contractor. MOLA staff will not work with store or transport asbestos All sites Be aware of where the sheets are stacked. Do not touch or disturb the material, dampen down if wheather very dry		Supervisor and staff

						<p>Report suspected asbestos to supervisor or to PC.</p> <p>Establish exclusion zone – barriers and warning signs if applicable.</p> <p>If suspected ACM is isolated loose fragment follow SSW below</p> <p>Dampen down Wear impervious gloves FFP3 rated dust mask Double Bag fragment in plastic bag seal and label as Asbestos Containing Material</p> <p>Hand to PC for disposal.</p>		
0025	MANUAL HANDLING	Too heavy, big, awkward load, Too prolonged Dropping load	Personal injury, Equipment damage	M	4	<p>General</p> <p>Remove the need for manual handling where possible. Use mechanical aids where possible. Reduce horizontal and vertical distances. Reduce size and weight of individual load. Ensure team sufficient and fit for task. Ensure that route planned, well lit, obstruction free, and as dry as possible. Liaise with others to keep route safe, use lookouts. Brief and train staff. Rotate staff and/or sufficient breaks for prolonged tasks Use gloves</p> <p>Personal</p> <p>Assess weight before lifting, stay comfortably within personal lifting capacity. When picking up load: stand close with feet slightly apart, crouch do not bend at waist, keep head up and maintain natural curvature of spine, thrust/lift through hips, keep object close to body, maintain clear field of vision and do not run.</p> <p>Use MOLA Manual handling check lists for all significant manual handling tasks 0024a-e :</p> <p>Planks, ladders and boards Drums/round containers Bags and sacks Finds/irregular shaped objects on site Office work – boxes etc</p>	L	Supervisor and staff
0026	FUMES AND GAS Petrol fumes from plant and power auger	Toxic fumes/gas (CO etc) Fire/explosion	Personal injury, unconsciousness, illness	M	4	<p>Remove or contain source of gas/fume if possible. Brief staff on fume/gas source. Emergency procedures to be in place. Maintain adequate ventilation, Inspect work areas before each shift. Vacate area where fumes or gas are known or suspected. Do not return until told safe. Use gas monitor.</p>	L	Supervisor and staff

						Report unwell symptoms immediately. No smoking or other naked flame in specified areas. Use face fitted respirators/BA when required.		
0028	NOISE From breaking out and power auger	Excessive, prolonged noise levels, Nuisance to public	Personal injury – temporary or permanent damage to hearing, loss of hearing Headache/nausea	M	4	MOLA only sites (delete if not applicable) Use less noisy equipment or process where practical, contain noise levels where possible, ensure equipment is inspected and well maintained to reduce noise levels. Ensure that all mufflers and baffles are fitted correctly and working. Liaise with neighbours: Restrict hours, Minimise duration and frequency of excessively noisy operations where possible and necessary All sites Minimise exposure– rotate staff, plan work to avoid noisy times/work areas if possible. Wear appropriate ear protection. Report unwell symptoms immediately. Vacate area if headaches/nausea etc.	L	Supervisor and staff
0029	DEEP EXCAVATIONS Evaluation trench up to 2m or greater in depth	Collapse of sides Fall of persons Falls of Plant, equipment, material Flooding Hazardous atmosphere	Personal injury, Equipment damage	M	4	Determine the depth for the installation of shoring/ battering back as outlined in WSI. Shoring installed and maintained by competent sub-contractor. Shoring inspected by competent sub –contractor or MOLA supervisor instructed by them. Access ladders/scaffolding installed and inspected by competent contractor. Edge protection –fixed scaffolding barrier –installed around trench by a competent person 'Danger Deep Excavation' Warning signs displayed ie on site boundary/entrance, trench edge protection Where appropriate a fixed hoist to remove spoil rather than a crane or mechanical excavator. Hoist and plant operators will be briefed on MOLA works and operating procedures for deep trenches. The size and shape of the bucket or skip used for spoil disposal will be suitable for the size of trench, shoring, and other obstructions. Task specific briefing before commencement. Only staff physically fit and suitable. Basic visual health surveillance. report all unwell, symptom immediately. A mechanical pump(s) where necessary. Gas monitoring equipment where	L	Supervisor and staff

						appropriate.		
0030	POWER TOOLS Power auger	Noise Vibration Dust Fumes Fire/explosion Falling/flying material Moving machine parts	Personal injury, equipment damage	M	2	No staff to use power tools unless trained to do so Use PAT tested equipment only. Visually Inspect before use. Maintain equipment Do not use obviously faulty equipment Follow manufacturer's instruction. CO2/dry powder Fire extinguisher at point of use Maintain tidy work place – eliminate combustible material Rotate task and/or take suitable and sufficient breaks. Use lower vibration emitting equipment where possible. Ensure baffles and mufflers are fitted as required. All guards and covers to be in place. Do not defeat guards. Do not exceed Workplace exposure limits: vibration, noise, fumes. Report unwell symptoms immediately. Staff to maintain safe working distance from operating power tools. Air quality to be monitored in enclosed areas, provide ventilation where appropriate. Wear appropriate PPE: ear, hand, respiratory and eye protection.	L	MOLA Geoarchaeologists
0031	VIBRATION From use of power auger	Work near breaking out operations, machinery, use of power tools	Personal injury, equipment and property damage	M	2	Remove, contain vibration source where possible. Reduce duration where possible. Liaise with neighbours - minimise possible public injury or distress. Do not exceed work place exposure limits. Increase distance from vibration source if possible. Rotate staff and ensure suitable and sufficient breaks. Report all ill symptoms immediately, Vacate area if headaches nausea, dizziness Monitor work areas for damage, secure loose items.	L	MOLA Geoarchaeologists
0039	POWER AUGER COBRA (petrol)	moving parts machine /falling into trench Noise Vibration Contact with underground service Fumes petrol CO Fire/explosion Manual handling	Personal Injury, equipment damage	M	2	Service/repair regularly– annually as a minimum Inspect before use – obviously faulty equipment will not be used. Assess location prior to start to ensure sufficient space and ventilation. Obtain service diagrams/ CAT scan/ and avoid known service locations where applicable. Cease operating if underground obstruction is encountered. Only use if supervised by Senior Geoarchaeologist. No lone working : minimum of two operatives. Staff will be physically suitable and fit.	L	MOLA Geoarchaeologists

						In deep trenches: Gas monitors, extractor fans, and top person to monitor air quality will be used. Exhaust will be pointed away from the operator face. Take sufficient breaks rotate tasks Sufficient breaks during prolonged operation. Task specific manual handling training. A dry powder or CO2 extinguisher will be available. Provide Petrol COSHH assessment.		
0043	SPOIL MOUNDING	Plant and materials falling into trench Dust Mudslides Slippery barrow runs Overloaded barrows	Personal injury, equipment damage	M	4	Robust barriers around deep excavations. Mound spoil and materials at safe distance from trench, welfare facilities, occupied premises and site perimeter. Supervisor to determine safe distance. Do not block drains, sewers, manholes, water courses, with spoil. Spoil to be mounded - c45 degree slope maximum where applicable. Keep excavation edges clear of loose rubble, spoil, materials etc. Clear and secure barrow runs, staging to be used where possible, fitted with toe boards and guard rails as appropriate. Cover or damp down in dry dusty conditions. Large heaps to be closed in heavy rain or snow and monitored for slippages.	L	Supervisor and Staff
0049	COSHH (PETROL) (power auger)	inhalation, ingestion, absorption dermal contact	Personal injury, disease	M	2	Material Safety Data Sheet and COSHH assessment to be present on site. Brief staff on instructions for product. Follow safety instructions for use, transport, storage and disposal.	L	Supervisor and staff
All persons affected by these hazards must be made aware of the contents of this Risk Assessment								

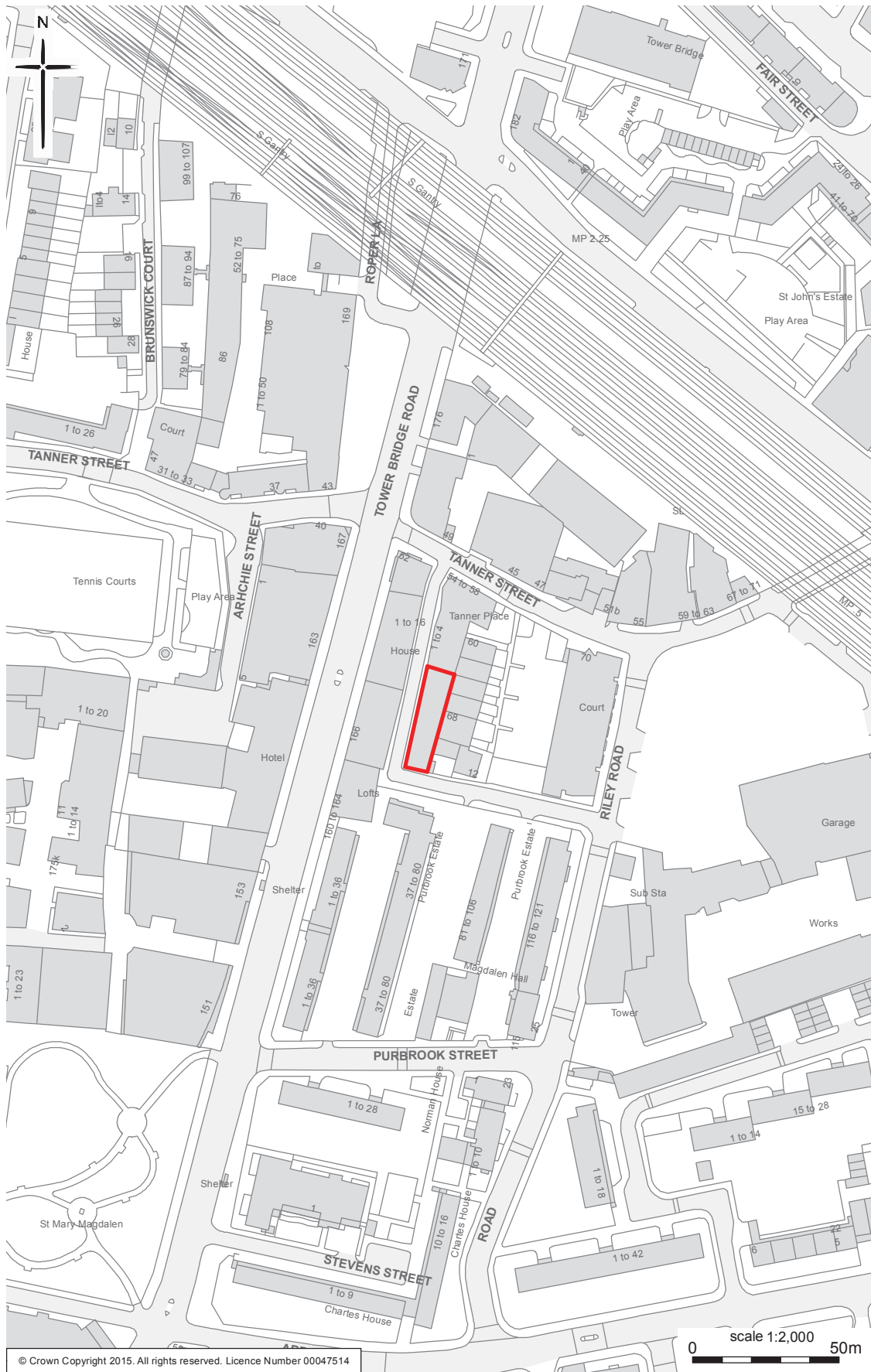


Fig 1 Site location



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Fig 2 Proposed evaluation trench