BOND STREET STATION UPGRADE
LUL Works
2 Stratford Place Site
London W1

City of Westminster

Written Scheme of Investigation for
Archaeological Investigations

National Grid Reference: 528545 181145

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Contents

List of Figures

1 Executive Summary

This Written Scheme of Investigation (WSI) sets out the scope of archaeological investigations recommended for construction of the Bond Street Station Upgrade at 2 Stratford Place by London Underground Ltd (LUL). It summarises works of both assessment and mitigation commensurate with the archaeological implications of the development and draws on the conclusions of a previous Heritage Scoping Appraisal. The station upgrade is a complex engineering project and the WSI has considered development works to the extent that these are currently known .It will be updated and re-issued as further engineering design details become available.

There will be substantial enabling and main-construction phase ground works for the new station concourse and entrances beneath the Grade II Listed building 2 Stratford Place (retained subject to strengthening and opening up works). The site falls within an Area of Special Archaeological Priority designated by the City of Westminster and the Stratford Place Conservation Area.

For the purposes of this WSI, archaeology has been defined as all heritage remains below present ground-level; excluding the standing building 2 Stratford Place but including its cellars and foundations which retain some original features of interest. The Heritage Scoping Appraisal indicated that the main archaeological potential is for deep alluvial deposits within the former Tyburn valley and related structures that included medieval and later conduits supplying the City of London with fresh water. The conduit head was associated with the Lord Mayor's Banqueting House, close to the site and conduit houses are also documented. An archaeological watching brief in 1979 recorded a masonry structure, thought to be a water cistern, beneath the pavement vaults of no. 2 Stratford Place.

The Heritage Scoping Appraisal recommended site-based assessment (archaeological field evaluation) in the form of initial archaeological trial pits; leading to a mitigation strategy, should significant remains be present and are unavoidably affected by the development scheme. It also recommended a historic fabric record for alterations to the Listed structures.

Archaeological features of national importance suitable for preservation in situ not anticipated. The mitigation strategy is therefore one of further investigation and record (preservation by record) to be undertaken prior to and during the construction process. Based on current knowledge of the development works it is proposed to conduct the following archaeological investigations:

- *an archaeological field evaluation within the basement of no. 2 Stratford Place in the form of two archaeological trial pits and associated augering/sampling of the deeper alluvial deposits*
- *archaeological monitoring (watching brief) of enabling works in the basement of no. 2 Stratford Place; including four geotechnical test pits, two boreholes and the exploratory opening up works for any original structural features concealed behind modern alterations or additions*
- *historic fabric record of relevant below-ground features of the Georgian structure to English Heritage Level 2 standard; to include the cellars and associated elements such as the lightwell and front steps and the rear ground floor room designated for a future plant room*
- *possibly further investigation and recording of any significant archaeological remains (mitigation) depending upon the field evaluation and geotechnical results*

2 Project Background

2.1 Introduction

London Underground Ltd (LUL) has commissioned Museum of London Archaeology (MOLA) to prepare an archaeological Written Scheme of Investigation (WSI) – a scope of proposed works - for the upgrade works at Bond Street Station, London W1 (Fig 2). The WSI is in two parts – this document relates to development works affecting 2 Stratford Place and a separate WSI covers the remainder of the Bond Street Station upgrade. The proposed works are subject to alteration and the scope of works reflects our current interpretation, as of the date of issue of this report.

The development proposal comprises alterations, strengthening and enabling works to 2 Stratford Place, which is Grade II Listed, including ground reduction of the basement level. These will allow construction for the new station concourse, escalators etc to take place beneath the building. These works will affect potential archaeological remains likely to be present below ground level; including original historic features of the building likely to be present within and beneath its cellars. The Listed building consent for works affecting the standing building was issued by City of Westminster in August 2010 and includes a condition requiring archaeological investigation of the underlying archaeological deposits, to be in accordance with an approved WSI.

Monitoring of ground investigations was carried out in the vicinity of Bond Street Underground Station by MOLA in 2008 (site code MBB08). The boreholes to be monitored by a geoarchaeologist were selected by MOLA as those that would contribute towards deposit modelling of the former Tyburn channel, and to any subsequent archaeological mitigation project design (*MoLAS 2008*).

A Heritage Scoping Appraisal for the whole station upgrade site was undertaken in September 2010 (*MOLA 2010*). This assessment defined the potential for any surviving built or buried heritage assets on the site and mapped the site into zones of differing archaeological potential; based on predictive deposit modelling, fieldwork sources, historic maps, plans of existing and previous buildings and services, and a site inspection (see Fig 2). The appraisal recommended that the initial desk-based predictions were tested by site-based assessment in the principal areas of impact, notably the basement of no. 2 Stratford Place where archaeological test pits were recommended. Monitoring of soft-stripping of the building at basement level was also recommended, in case further structural details are revealed.

This document forms the required Written Scheme of Investigation for the 2 Stratford Place component of the station upgrade scheme. It scopes heritage works of assessment and mitigation, commensurate with the predicted effect of the proposed development works on the historic environment. Annex 1 is a Method Statement specifying how these heritage works would be carried out, to the required standards, both on and off-site. There is a further WSI for the remainder of the station upgrade project.

2.2 Site Description

The Bond Street Station upgrade project is located at the north-east corner of the junction of Stratford Place and Oxford Street, London W1 in the City of Westminster. It includes 354-358 Oxford Street, 2 Stratford Place and surrounding below ground areas eg an existing access into Bond Street Station. Adjacent areas will also be required for utilities works in Oxford Street and Stratford Place, a compensation grout shaft to the north in Stratford Place and for temporary works compounds. The centre of the site lies at Ordnance Survey National Grid Reference 528545 181145: (). This figure shows the site area at ground level, including areas of proposed utility works in surrounding streets.

No. 2 Stratford Place has a single-depth basement, with a floor level of *c* 19.80m OD, about 2.60m below adjacent street level in Stratford Place. Additional disturbance has occurred from the construction of vaults at the Stratford Place frontage. Historic drawings show that the original pavement vaults at the front of No. 2 Stratford Place have been partly cut back in order to construct the Stratford Place entrance stairs to the current underground station ticket hall. The remainder of the vaults have been filled in with concrete.

2.3 Summary of Previous Studies

Previous archaeological investigations in the site vicinity are described in the following documents:

- Bond Street Station Upgrade Project , City of Westminster, Archaeological Monitoring of Ground Investigations (*MoLAS 2008*)
- Bond Street Station Upgrade LUL Works, City of Westminster, Heritage Scoping Appraisal (*MoLA 2010*)

2.4 Geology and Topography

The geology and topography of the site have been addressed in the Heritage Scoping Appraisal (*MOLA 2010, section 3.2*).

The station upgrade site is located in the centre of the City of Westminster, in the valley of the now culverted River Tyburn, close to the former course of the river itself. The modern street levels still reflect the underlying river valley: falling significantly from Orchard Street to the west (*c* 26.00m OD), to Marylebone Lane (*c* 21.50m OD) and then rising again to Cavendish Square (*c* 26.00m OD). Adjacent to the site in Stratford Place the road level lies at 22.40m OD and at *c* 23.20m OD in Marylebone Lane.

The site lies in an area associated with the main Thames river gravels (Lynch Hill terrace) but on the site the geology is varied by the Tyburn, which forms a buried valley cutting through the gravel terrace. The British Geological Survey map shows a band of alluvial river deposits associated with the Tyburn valley, snaking through Westminster from Marylebone in the north, to the Thames in the south. The general topography of the area suggests the site lies on the eastern side of the basin of the River Tyburn, within the flood plain of the river, possibly filled with alluvium. This has resulted in areas of intact terrace gravel beyond the Tyburn valley, east of the site; areas where the Tyburn has eroded out the gravels directly onto the underlying London Clay (north-east of the site) and areas within the main Tyburn valley that contain deep made ground and possibly alluvium (west of the site). The site appears to be towards the eastern edge of the buried river valley; resulting in the presence nearby of areas of terrace gravel, London Clay and alluvium.

2.5 Archaeological and Historical Development of the Site

A more detailed description of the archaeological and historical development of the site can be found in the Heritage Scoping Appraisal (*MOLA 2010, section 3.3*).

The site falls within one of the City of Westminster Areas of Special Archaeological Priority defined for the Roman and medieval settlement around the crossing point of the former river Tyburn (adjacent to the site on Oxford Street). It is also within the Stratford Place Conservation Area. No. 2 Stratford Place and an adjacent Porter's Lodge are Grade II listed.

The main archaeological potential is for deep alluvial deposits within the former Tyburn valley and related structures that included medieval and later conduits supplying the City of London with fresh water. The conduit head was associated with the Lord Mayor's Banqueting House, close to the site and conduit houses are also documented. An archaeological watching brief in 1979 (site code STP79) recorded a masonry structure, thought to be a water cistern, beneath

the pavement vaults of 2 Stratford Place. These were filled in during construction of subway access to Bond Street Station from Stratford Place. Features associated with it may continue outside the infilled pavement vaults and subway if these areas have not been disturbed.

Evidence of settlement and land use from the prehistoric period onwards, on and over the terrace gravels could be present. The site is on the eastern side of the former Tyburn valley and very close to historically-documented courses of the river.

The site lies just to the north of the ancient highway Oxford Street and includes the former Tyburn village, both of which have been the focus of occupation since the Roman period. Although the focus of the later medieval village moved northward, to become Marylebone, early medieval activity adjacent to the Tyburn and north of the Roman road is documented.

From the early medieval period, the Tyburn and other rivers across this area were utilised as sources for clean water to supply the City of London and it was during this period that a major alteration affecting the topography was made. This was the diverting in 1236 of the Tyburn stream at a point near Oxford Street from where it was sent to the City via conduits gathered at conduit houses. The land upon which one of the conduit houses was built became the property of the City of London and a Banqueting House was constructed for the Mayor and the Aldermen in 1565, possibly on the site. The Banqueting House had a number of cisterns associated with it and at least one has been identified on the site.

The site vicinity remained largely rural during the 17th century, lying to the north west of the Cities of London and Westminster. The Lord Mayor's Banqueting House was still regularly used, in spite of the fact that the construction of the New River in 1609 meant that the City was no longer reliant on the Tyburn for its water supply and during the late 17th century the Banqueting House was extensively refurbished. However by 1739 the Banqueting House had fallen into a state of disrepair, had been demolished and urbanisation was expanding, to a lesser extent, north of Oxford Street. This included properties on the west side of Stratford Place including No. 2 Stratford Place which was constructed in 1772-74. Two Porter's Lodges were constructed at the street entrance, one of which survives today. The area of the site was a fashionable, wealthy area during the 18th century and remained so throughout the 19th and 20th centuries.

There are at present no major known monuments likely to be of national importance - the Greater London Sites and Monuments Record, archaeological investigations in the area and historical documents indicate potential for archaeology of local and regional significance.

3 Construction Impacts and Mitigation

3.1 Construction Impact

The development proposal for the station upgrade project comprises the demolition of the existing building on Oxford Street and ground reduction of the basement level of no. 2 Stratford Place. Additional works will be required in Stratford Place and Marylebone Lane surrounding the station as part of enabling works in association with the construction of new station entrances/concourses at Bond Street Station. The new ticket hall will be accessed via a new entrance on Marylebone Lane, and will also occupy part of a new basement at Nos. 354–358 Oxford Street. Additional works will be required in the surrounding road ways for utility works and the temporary worksite compound(s) for the scheme. The nature of the future redevelopment scheme above the station is not currently known. Effects that are currently considered to have a potential impact on buried heritage within the 2 Stratford Place sub-site include:-

- Enabling works at basement level - exploratory opening up and strengthening of the fabric and foundations; including demolition within the basement and the use of temporary steel frame supports

- Permanent works at basement level - initial piling (mini piles) and permanent piles in basement prior to basement ground reduction by *c* 1.5m.
- Possible impact on area to north and east of subway stairwell in Stratford Place by new connection (if not already disturbed). In area of existing infilled vaults archaeological features could extend beyond and below infilled areas (as yet unknown).

3.2 Outline Mitigation Design

The overall aims are:

Buried heritage

- archaeological field evaluation - to initially assess the significance of any surviving post-medieval or medieval structures or associated deposits below the basement slab level in 2 Stratford Place. This would be achieved by excavating two archaeological evaluation trial pits and additionally by monitoring 4 geotechnical test pits designed to examine the footings of the Listed building
- archaeological field evaluation - to assess the archaeological and palaeo-environmental potential of any alluvial sequence from the former river Tyburn below basement slab level in 2 Stratford Place. This would be achieved by recovering core samples from via two power-auger holes at the base of the evaluation trial pits and additionally by monitoring two proposed geotechnical boreholes to augment existing deposit modelling of the Tyburn valley
- to carry out any further archaeological investigation that may be required (a mitigation strategy) should the initial field evaluation reveal significant buried remains unavoidably affected by the development scheme, such investigation to be undertaken before and/or during construction
- to use the assessment data and further engineering design information to update this WSI where necessary; in terms of predicted effects and proposed mitigation

Built Heritage

- to record the structural archaeological features associated with the original Georgian building below ground level; such as foundations, drainage, blocked doorways/fireplaces and any other detail revealed during the initial exploratory and opening-up works, that may correlated with the remains present below present basement floor level. This includes associated elements such as the lightwell and front steps and the rear ground floor room designated for a future plant room. These areas would be recorded to English Heritage Level 2 standard (*English Heritage, 2006*). This consists of a descriptive record that may include internal and external photographs, a representative floor plan and possibly sketches and drawings (eg of structural details) and a written physical description. There would be a brief supporting account of the development of the building; but Level 2 does not include detailed research or an analysis of the documentary evidence for its history and past uses.

4 Research Design

4.1 Aims of the Proposed Investigation

The overall aim of the archaeological investigation is first to identify and secondly to investigate and record any surviving built or buried heritage remains that may be effected by the proposed station upgrade works.

4.2 Site-specific Research Aims

Buried Heritage

- What is the extent of recent (19th and 20th century) truncation across the site?
- What was the natural topography and environment of the immediate site area? Does it lie within or adjacent to the river Tyburn?
- If the site lies in a dry-land zone on the eastern side of the river valley - what evidence of any settlement and land use from the prehistoric period onwards on and over the terrace gravels is there?
- If the site lies within a former river channel - is there evidence of the alluvial sequence and its chronology? Are there any low water regression phases that might be marked by weathered or organic peaty horizons? Is there evidence of river control and management such as timber structures?
- Does evidence of medieval or post-medieval culverts or conduits survive on the site?
- Does evidence of the Lord Mayor's Banqueting House survive?
- Does further evidence of the cistern recorded beneath no. 2 Stratford Place vaults associated with the Lord Mayor's Banqueting House survive or are other cisterns or associated features present?
- What other evidence of post-medieval development is present on the site, prior to the Georgian urbanisation?

Built Heritage

- Investigate fabric and features of the affected buildings, with the aim of elucidating structural history by appropriate archaeological methods, to include any associated buried structural features such as vaults, foundations, sewerage and water supply.
- Make a suitable record of the fabric and the buildings concerned (basement-level only), by means of photography, sketches and technical notes and drawings, connected to an existing accurate metric survey
- Scan documentary sources for the history of the buildings and carry out a limited amount of documentary research, to interpret their fabric and understand their construction and use, and any subsequent modifications in structure and use.

4.3 Regional Research Aims

These are derived from the research framework for Greater London (*Museum of London 2002*):-

Prehistoric

P3 - Understanding what London looked like – Geomorphological mapping of key feature types (such as lake basins, river channels and channel/dry land interfaces, as well as deeply sealed, surface-intact sites in the floodplains) is of importance in predicting the likely whereabouts of human activity. Predictive modelling using integrated borehole and geophysical ground investigation programmes have already proved valuable.

Roman

R4 – Analysing the nature and reasons form the evolution of the road system, river crossing and internal street layout and their importance as engines of development and change.

Topography and Landscape

TL2 - Understanding London's hydrology and river systems and tributaries and, in particular, understanding the role of the river Thames (as boundary, communication route, resource, ritual focus, barrier, link, etc) in shaping London's history, and the relationships between rivers and floodplains.

Development

TD1 - Studying the correlation between sites associated with watercourses and meander bends, so as to understand the origin of settlements.

TD2 - Contributing to our understanding of the creation of the London suburbs with direct contribution to today's aspirations for an urban regeneration.

TD4 - Understanding how water supply and drainage provision were installed and managed.

Cultural and social property

TS3 - Studying buildings as indicators of cultural and familial associations.

5 Scope of the Investigation

For this WSI, archaeological remains are taken to include resources below ground level (including remains of archaeological, palaeo-environmental and quaternary geological importance) including relevant structural archaeology relating to the existing building.

The Heritage Scoping Appraisal (MOLA 2010) did not indicate that archaeological features of national importance suitable for *preservation in situ* are present. The mitigation strategy is therefore one of *preservation by record*, prior to and during the construction process.

Initial evaluation and watching brief monitoring will identify where any further archaeological design work may be required, eg for further mitigation and these revisions will be incorporated into this WSI, once the corresponding engineering design information is available.

5.1 Archaeological fieldwork

Evaluation

Archaeological evaluation trial pits will be excavated in the basement level of no. 2 Stratford Place to determine survival potential for buried deposits or structures. It is recommended that a 5% sample of trial trenching is set (equating to two trial pits each c 2m square) and that specific requirements are determined in conjunction with the main contractor and the English Heritage Greater London Archaeological Advisory Service who normally monitor archaeological works on behalf of the Local Authority. The methodologies used for conducting the archaeological trial pits will conform to the relevant standards of the Institute of Field Archaeologists and GLAAS (see Bibliography).

The trial pits are targeted sample-based investigations used to assess the character and extent of archaeological remains. The methodology is therefore to expose and define the buried remains rather than completely remove them.

There is potential for archaeological and palaeo-environmental strata, in the form of alluvium and/or peat horizons occurring at depth beneath the basement area. Since it is understood that there are engineering constraints on the depth of test pits prior to strengthening of the standing building (corresponding to the depth of its adjacent foundations) it is intended to asses these deeper horizons by means of small drilled holes using a power auger (one in the base of each trial pit). The additional 4 geotechnical test pits and 2 boreholes within the basement will also be archaeologically-monitored. The aim is to establish the character and depth of alluvial deposits within the Tyburn valley.

General watching briefs

A general watching brief will be maintained on those areas specified in accordance with the established standards (IFA and GLAAS), but not subject to any specific controls over the Principal Contractor's work method and plant (other than making sufficient time and safe access to the works available to allow archaeological recording to take place). A general Watching Brief may for example be appropriate for the exploratory utilities trial pits and for work to existing services, where the associated service trenches have already removed the majority of original archaeological strata.

A general watching brief is defined as a MOLA archaeologist in attendance to monitor the specified contractors' works and to make a basic record of buried strata and features to the extent feasible make without significant disruption of those works. This may typically include taking photographs, making measured drawings or written records, retrieval of finds, and taking levels on observations.

Targeted watching brief

Targeted watching briefs are a programme of observation, investigation and recording of archaeological remains during construction used where there is a possibility of unexpected discoveries e.g. areas of occasional, dispersed features identified at the field evaluation stage but not selected for further archaeological works; the periphery of more significant sites that have already been archaeologically excavated; and areas of potential where logistical constraints have prevented access at an earlier stage. A targeted Watching Brief may for example be appropriate for any new service diversions, in previously undisturbed areas (depending on trench depth) and for the compensation grout shaft.

Due to the greater potential for discoveries, a more controlled monitoring and recording methodology will be adopted. This may include archaeological supervision during the initial removal of overburden/topsoil/subsoil followed, if necessary, by localised hand inspection, and assessment by archaeologists. If no significant remains are discovered, the site will return to general watching brief status.

If in the case of either a General or Targeted Watching Brief, if significant archaeological discoveries are made that cannot be adequately covered by the monitoring archaeologist, then additional staff and time resources may be needed to allow an adequate investigation to be carried out, sufficient for *preservation by record*. This would be separately negotiated with the Principal Contractor, again within the framework of minimising disruption to the works. For example, discoveries are often discrete and localised so that rapid recording can be carried out whilst the Principal Contractor's works continue elsewhere (subject to a safe method of working).

In the case of the proposed Targeted Watching Brief during construction of the Grout Shaft the intention would be to use adjacent geotechnical borehole results to give an advance predictive model defining at what horizons and depths the archaeologists would need to intervene. In this way there can be a finite time and resources allocation (agreed in advance) that can then be drawn down in a structured way, as and when the significant levels are reached. *It is therefore strongly recommended that (if feasible) an advance geotechnical borehole is carried out within the shaft footprint. It should be archaeologically monitored, in order to give meaningful data regarding the deposit types and depths likely to be encountered during subsequent shaft excavation.*

5.2 Off-site work

The proposed mitigation strategy of *preservation by record* requires that the archaeological results are placed in the public domain by means of an off-site process of post-excavation assessment and analysis; leading to a published report and finally to preparation of the data archive of finds, samples and records for deposition with an accredited receiving body for long-term curation. The nominated receiving body for this project is the Museum of London's London Archaeological Archive and Resource Centre (LAARC). The scale of off-site work and the nature of the published report depend entirely on the extent and significance of the fieldwork results. The off-site work will therefore be scoped and agreed by means of an update to this WSI, on completion of the fieldwork phase. For a scheme of this nature, an integrated approach to reporting and publication covering all archaeological results from the various works locations will be the preferred option.

Archive deposition will require the landowner to enter into a deed of transfer in favour of the Museum of London, so that the material may be placed into the public domain via LAARC. The appropriate documents will be included with the updated WSI, once the extent of of-site work has been defined.

6 Conclusions and recommendations

The field evaluation works specified above are combined with an archaeological coverage of geotechnical investigations (fig 3). The aim is to quantify the nature of archaeological remains beneath the basement of 2 Stratford Place (including the topography and palaeo-environmental potential of the buried Tyburn valley). Collectively, the data obtained will be used to define an archaeological mitigation strategy for the 2 Stratford Place component of the Bond Street station upgrade site. Mitigation will be targeted to just those areas where remains are directly affected by the development scheme (on the basis of available engineering design information).

On current understanding of the scheme, the mitigation strategy for 2 Stratford Place is likely to include:

- archaeological record of structural features within the existing 18th century cellars, in particular the parts that will affected by enabling works (opening up. soft strip and remedial strengthening works) plus a watching brief during those works, in case further structural details are revealed
- possible follow-up archaeological investigation within the basement of 2 Stratford Place, if the evaluation reveals significant remains directly affected by the scheme (eg structures associated with the conduits or Lord Mayor's Banqueting House)
- general or targeted watching briefs of any other significant development ground works; including outside the existing building eg utilities street works or any excavations beneath existing pavement vaults (possible survival of features such as the previously-exposed medieval cistern)
- a suitable programme of off-site assessment, analysis and publication of the fieldwork results, followed by preparation of the site archive for deposition with LAARC

This initial mitigation strategy, principally for *preservation by record* , will be reviewed (and the WSI scope updated as necessary) as further engineering design information becomes available; regarding ground excavations associated with enabling, temporary and main construction works. Fig 2 was created during the Heritage Scoping Appraisal (*MOLA 2010*) and indicates preliminary locations for ground works (across the overall station upgrade scheme) that may require archaeological coverage.

7 Programme

The archaeological evaluation in the basement of no.2 Stratford Place will take place concurrently with the proposed geotechnical investigation (programme to be advised).

Structural archaeology recording will take place prior to enabling and opening up works within the cellars, with a follow-up watching brief during such works (programme to be advised)

General and targeted watching briefs will take place during the relevant enabling and main works eg utilities diversions and grout shaft construction (programmes to be advised)

8 Specification

8.1 Generic standards

The archaeological evaluation and mitigation works will be carried out in general accordance with the relevant best practice (as per IFA, English Heritage and MOL standards and guidance – see Bibliography).

8.2 Potentially nationally important remains

Unexpected, potentially nationally important archaeological remains are not anticipated.

8.3 Human remains

It is not considered likely that human remains will be encountered, confined to a low background possibility of redeposited, disarticulated bones in the Tyburn channel.In such eventuality, MoLA has full capability for obtaining the necessary Ministry of Justice consents speedily and for rapid excavation of remains to the required professional standard.

8.4 Treasure Act

Objects defined as Treasure as per The Treasure Act 1996 are not anticipated. In such eventuality, MoLA has full capability for removing, conserving and storing artefacts under the normal reporting and consents requirements of the Act.

8.5 Health and safety

MoLA shall undertake the specified works in general accordance with the Employer's Health and Safety requirements, the Principal Contractor's Health and Safety Plan and the Designers Risk Assessment. Specific health and safety planning, including communications, attendances and risk assessments are set out in the MoLA Method Statement (see Annex 1).

8.6 Recording standards

A unique number site code will be agreed with the Museum of London Archaeological Resource Centre.

Recording will be to the required standard and format; as per 8.1, above and the Method Statement (Annex 1).

A digital camera will be provided for day to day record shots. In addition, the MOLA professional photographer will attend as and when necessary for set piece publication-quality shots.

8.7 Survey requirements

The investigation areas will be machine or hand-cleared to appropriate archaeological levels, archaeologically cleaned by field staff, and then features will be assigned and labelled with context numbers, before the MOLA Geomatics team directly digitally-capture the context locations and extent in 3D, using a total station referenced to Ordnance Survey control networks and datum.

Alternatively, the investigation areas may be set out first by MoLA surveyors from appropriate survey stations (eg those installed for the development). Contexts are then three-dimensionally hand recorded by the archaeologists (to temporary baselines and bench marks) and then those locations will be subsequently surveyed in. This data will be processed off-site, and a site plan of contexts produced which will be plotted to scale onto hardcopy and supplied back to the archaeologists on site.

8.8 Hand investigation and recording

At the evaluation stage, MoLA will undertake sufficient sample-based hand investigation and recording of any archaeologically significant horizons to achieve the stated project objectives (4, above). Any further follow-up investigation and recording (mitigation) will be focused and targeted to features, structures and deposits considered to have significant potential to address the research agenda (4, above).

8.9 Use of mechanical excavators

The approach is detailed in the Method Statement (*Annex 1*).

For field evaluation and targeted watching brief elements; all machine work down to the first archaeological horizon; structural demolition, opening and removal of obstructions (e.g. basement slabs) shall be carried out by the Principal Contractor under MoLA supervision. The Principal Contractor shall cease work when archaeological evidence is revealed and allow the archaeologists sufficient safe access and time to undertake hand investigation and recording, as appropriate.

The archaeological levels or structural features shall be suitably exposed and prepared by the Principal Contractor using appropriate plant and/or labourers as required, under MoLA supervision. If the machine has to re-enter the investigation area, care will need to be taken to ensure that it does not damage underlying remains

8.10 Archaeological science and environmental sampling

The sampling strategy will be developed on -site under the advice of appropriate MoLA specialists who will be available to attend when required. For example, the palaeo-environmental sampling strategy for any peat or alluvial deposits present will be supervised by the MoLA geoarchaeology specialist. If necessary, further advice from the English Heritage regional archaeological science advisor may be sought.

9 Required deliverables

9.1 Archaeological Method Statement

A draft Method Statement has been prepared (see Annex 1) and will be further developed in the light of the requirements of the Principal Contractor.

MOLA will agree a sequence and programme of the works, in conjunction with LUL and the Principal Contractor, in order to meet the requirements of the construction programme.

9.2 Reports

MOLA shall submit a survey report, Interim statement, Summary Report, OASIS Summary Sheet and an illustrated fieldwork report on the results of the works. The deliverables shall be prepared and submitted in accordance with appropriate IFA and English Heritage standards and guidance (see Bibliography)

9.3 Post investigation assessment

Following completion of mitigation fieldwork and issue of the fieldwork report, MoLA shall (if the archaeological results are sufficient to warrant it) undertake a further assessment in order to determine the nature of any further publication or other disseminaton that may be required to achieve *preservation by record*. Assessment of potential for analysis shall be undertaken in accordance with the relevant guidelines (*English Heritage 1991*)

MoLA has provided details of its current post investigation assessment procedures with their Method Statement.

9.4 Archive

Digital datasets and the site archive will be compiled and accessioned in accordance with appropriate standards and guidance.

The site archive shall be organised to be compatible with other archaeological archives in London. This requirement for archival compatibility includes computerised databases.

Individual descriptions of all archaeological strata and features excavated or exposed shall be entered onto prepared pro-forma recording sheets which include the same fields of entry on the recording sheets of Museum of London Archaeology. Sample recording sheets, sample registers, finds recording sheets, registered finds catalogues and photographic record cards shall also follow the Museum of London Archaeology equivalents.

Archives shall be prepared to conform with current best practise (e.g. *Brown and Duncan 2007; Institute of Field Archaeologists 2008f*) The archive shall cover all finds, samples and records (drawn, written, photographic and electronic) collected and produced during the works. The archive shall be indexed and internally consistent. The site archive containing original records and finds will be stored temporarily with MOLA pending a future decision over the longer-term archive deposition and public access process for the wider project.

9.5 Digital data

MoLA shall produce a digital data archive of all primary field data produced during the works in accordance with ADS guidelines (Richards and Robinson 2001).

MoLA shall prepare and provide field and laboratory data, evaluation or investigation trench and phasing plans showing archaeological features recorded, and report text in digital form, as well as in paper form. Consideration should be given to recording electronic plans during fieldwork.

The digital archive for each fieldwork event shall be copied to CD-R or DVD (recordable laser disc) and submitted in a suitable format compatible with the LAARC document management system.

9.6 Site monitoring & progress reporting

The English Heritage (GLAAS) officer for Westminster shall be informed in writing in advance of commencement of fieldwork by MOLA.

10 Annex 1 – Method Statement for an archaeological investigation

10.1 Site-specific methodology

This document forms the Method Statement for archaeological investigation for the proposed upgrade works at Bond Street Station, London W1 by LUL. This consists of a field evaluation (possibly with further localised follow-up mitigation recording if significant remains are revealed), structural recording and general and targeted watching briefs.

This is an integrated method statement covering all proposed archaeology works for the overall Bond Street Station upgrade project.

It is proposed to conduct the following investigation in relation to **buried heritage** on the site (*further information is given at section 5.2 of the WSI*):-

Evaluation

An archaeological evaluation in the form of two archaeological trial pits measuring 2m x 2m to be located in the basement of no. 2 Stratford Place to determine the presence/absence and significance of archaeological deposits or features below the basement slab level. The depth of the trial pits will be no greater than the maximum depth of the existing foundations of the basement (subject to engineers advice).

There is some potential for palaeo-environmental evidence in the form of alluvium and/or peat horizons beneath the basement area. It is therefore proposed that the deposits at the base of the trial pit are sampled. This would consist of a auger hole being drilled in the base of each evaluation trial pit. These will assist in providing a site-wide picture of the past topography and buried deposit sequence.

For the evaluation:

- The initial breaking-out of concrete ground slab shall be conducted by the Principal Contractor on the site.
- Modern slab, rubble and overburden will be cleared by labourers under supervision by MOLA staff until archaeological levels are reached.
- Spoil will be removed and mounded by the Principal Contractor.
- The planning and recording of archaeological remains will occur after either the hand-digging or the machining process, with areas being cleaned in order to determine the sequence. The restricted nature of no. 2 Stratford Place basement would suggest that machine excavation may not be viable and that hand digging by labourers is more feasible.
- Trial pits will require shoring in areas which exceed 1.20m in depth (and those of less than 1.20m which are judged unstable) will be installed in accordance with Safety Regulations and maintained throughout the occupancy of the site by the Principal contractor.
- Dependent on archaeological horizons and features exposed selective investigation and sampling of individual features will occur as required to meet the stated research objectives.
- It will be important for both the trial pits and auger locations that the Principal Contractor has traced and disconnected (or otherwise made safe) all known or potential live services. If necessary MoLA can re-locate pit positions.
- The auger holes will be drilled with hand-held a power auger by a MOLA Geoarchaeologist. The boreholes will be drilled through the Quaternary sequence. The geoarchaeologist will keep a field log of the boreholes and a photographic record of the cores.

- The sequence of deposits recovered in the samples from each auger hole will be described and preliminarily interpreted on site and the nature and depths of the interfaces between the different deposits noted. Description will follow standard archaeological terminology and will aim to characterise the visible properties of each deposit, in particular relating to its texture, colour, structure, inclusions and evidence for depositional and post-depositional processes.

Archaeological watching briefs

- Archaeological monitoring of the four geotechnical test pits and two boreholes planned in the basement of no. 2 Stratford Place. Monitoring will help to determine the presence/absence and significance of archaeological deposits or features below the basement slab level around the perimeter of the building particularly at the site frontage.
- A targeted watching brief on the grout compensation shaft excavated in Stratford Place to allow mitigation (investigation and recording) for any surviving archaeological deposits or features at the north end of Stratford Place.
- Targeted and general watching briefs on utility works for the site, including works to locate utilities, utility diversions and excavations for new utilities.
- A general watching brief on intrusive works within the temporary construction compound
- Monitoring of any further geotechnical boreholes

The location of the geotechnical test pits and archaeological evaluation trial pits are show on Fig 2. The location of the targeted and general watching briefs is as yet to be finalised, as the detailed location of these works is not currently well defined. Fig 2 was created during the Heritage Scoping Appraisal (MOLA 2010) and indicated preliminary locations for ground works that may require archaeological monitoring.

It is proposed to conduct the following work to record structural archaeology features (*further information is given at section 5.1 of the WSI*):-

An English Heritage Level 2 historic building record of the below-ground (cellar level) structural features at 2 Stratford Place, as existing, would be undertaken (concentrating particularly on elements to be altered in the opening up, soft strip and remedial strengthening works) plus a subsequent watching brief of those works.

The initial opening up and structural investigation within the basement would be monitored (being undertaken as part of the geotechnical works). The basement area has undergone modifications, but the original layout of rooms, corridors and chimney breasts along with other features are visible (such as the brick vaulted ceilings and the stone steps from the ground floor). The probability that further original or historic features remain hidden behind modern furnishings and above suspended ceilings is high. The light well at the front of the building is also a potential area of interest, despite modern alterations. A short phase of site visits scheduled into the programme during or after the soft strip stage would enable the inclusion of these potential historic features into the archaeological record, prior to their loss by demolition. As the basement layout is likely to be unique amongst the buildings of Stratford Place, the production of a floor plan of the basement is also recommended before its demolition.

This recording will make use of any existing detailed surveys of the site, and will include photography, accompanied by explanatory notes and drawings. At the report stage, the Historic Building Specialist will carry out a brief survey of documentary sources for the history of the buildings and extract information sufficient to provide the historical context in which the buildings were constructed and used, to date their construction and explain their subsequent development.

Results of the recoding will be reported in suitable form and archive the records at an appropriate repository. The records and report will conform to English Heritage Level 2 standard (*EH 2006*) and the Institute of Field Archaeologists relevant Standards and guidance.

10.2 Recording systems

A unique-number site code will be agreed with the Museum of London Archaeological Resource Centre.

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.

The site archive will be so organised as to be compatible with other archaeological archives produced in the Museum of London. It will follow the Museum of London, *General Standards for the preparation of archaeological archives deposited with the Museum of London*, (2009). This requirement for archival compatibility extends to the use of computerised databases.

A 'site plan', based on the Ordnance Survey 1:1250 map (reproduced with the permission of the Controller of HMSO), will be prepared.

Plans and sections will be drawn on polyester based drawing film at a scale of 1:10 or 1:20. 'Single context planning' is preferred on deeply stratified sites.

10.3 Treatment of finds and samples

Treatment, analysis and subsequent handling of all finds and samples will be carried out by MOLA Specialists.

Where necessary, the strategy for sampling archaeological and environmental deposits and structures (which can include soils, timbers, animal bone and human burials) will be developed by MOLA in accordance with English Heritage and IFA guidelines. Advice will be sought from the LPA Archaeological Advisor and the Regional Archaeological Science Advisor throughout the project, as appropriate. Subsequent on-site work and analysis of the processed samples and remains will be undertaken by MOLA Specialists.

Any organic samples will be subject to appropriate specialist analysis. There may be a requirement to submit timbers to dendrochronological analysis and to process some samples to provide C14 dating. Other forms of specialist analysis may also be appropriate.

The finds retrieval policies of the Museum of London will be adopted. All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained. No finds will, however, be discarded without the prior approval of the curatorial departments of the Museum of London.

All finds and samples will be treated in a proper manner and to standards agreed in advance with the Museum of London. They will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the guidelines set out in the United Kingdom Institute for Conservation's *Conservation Guidelines No. 2* and the Museum of London's *Standards for the Preparation of Finds to be permanently retained by the Museum of London.* Metal objects will be x-rayed and appropriate objects then selected for conservation.

The programme of ceramic dating and analysis will be undertaken by MOLA Specialists.

10.4 Reporting

On completion of the fieldwork a summary report will be prepared for the client and the Local Planning Authority. It will contain any recommendations for subsequent off-site assessment, analysis and publication. A brief resume will also be submitted to the Greater London SMR and NAR (using the appropriate archaeological report forms) and for the London Archaeologist annual summary of fieldwork.

10.5 Site Archive

The site archive will be organised as to be compatible with other archaeological archives in the Museum of London. It will follow the Museum of London, *General Standards for the preparation of archaeological archives deposited with the Museum of London*, (1998). This requirement for archival compatibility extends to the use of computerised databases.

10.6 Quality and Environmental Management Plans

For this site, quality issues are primarily driven by clear advance specification and understanding of the works; a suitably experienced Site Supervisor able to work closely with the Principal Contractor; and corporate support via experienced project managers and technical specialists able to attend site to advise where necessary (including health and safety advice via the MOLA consultant). A Post-investigation Project Manager will oversee off-site works and all report deliverables will be checked, edited and signed off by the Project Officer and Contract Manager.

Any environmental protection issues specific to the site and MoLA works within it (such as dust, groundwater management, contamination or wildlife habitats) will be discussed and developed with the Principal Contractor (as a contribution to their Environmental Management Plan) and risk assessments and remedial measures updated. The project planning prior to commencement has not identified any significant environmental issues specific to the archaeological works defined in this method statement.

10.7 Programme

The timing and duration of the programme will be agreed with the Principal Contractor and the client LUL and will be dependent on activities such as breaking out, removal of obstructions, removing spoil and installing temporary support. Since the archaeologists will not be able to work in the areas during attendances, the preparatory site set-up time taken will not form part of the archaeological programme.

In order to plan the Watching Brief elements, MOLA will require regularly updated copies of the Principal Contractor's programme for the relevant works and at least two weeks notice of commencement.

10.8 Resourcing

It is currently envisaged that that a MOLA Senior Archaeologist and archaeologist will be required for the excavation of the evaluation trial pits and that the power augering will be carried out under the supervision of the MOLA Geoarchaeologist.

Monitoring of soft stripping and a record of any structural features exposed within the cellars will be carried out by one Historic Building Specialist.

The timing and overall duration of the archaeological watching briefs on the groundworks will be determined by the contractor's programme and the nature and extent of any surviving remains. It is envisaged that one Senior Archaeologist will monitor the groundworks, with others coming in to assist with any recording work if required.

Occasional attendance by a surveyor or finds, or palaeo-environmental specialist may be required, depending upon what features are exposed. Similarly if further investigation (mitigation) should be required additional resources appropriate to the extent and significance of what has been revealed will be suggested by MoLA.

10.9 Principal Contractor's attendances to archaeologists

The majority of the specified archaeological investigations will operate as a MoLA specialist attendance and supervision during works being undertaken by the Principal Contractor, who will be responsible for providing a safe working environment and the following facilities. Attendances

will be discussed and specified in more detail on site with the Principal Contractor. Those in **bold** will be required – others may be:

- ***General site security*** including hoardings, gateway, warning notices, etc; to create a secure site perimeter, sufficient to prevent unauthorised access both into the site and into individual areas of excavation, particularly out of hours. If the Principal Contractor has retained security guards, it is recommended that the archaeological investigation areas be added to their schedule for regular patrols.
- Specific site security (if required): it may be necessary to separately secure individual archaeological areas via a physical barrier (e.g. Heras fencing).
- ***Providing safe access*** from the site entrance to offices and welfare facilities and to the specified archaeological investigation areas via defined access routes, secure ladders etc. This includes segregating access and archaeological work areas from any plant operating nearby e.g. via a physical barrier. For historic building recording all openings, potential falls, stairwells etc should be safely barriered off and the Principal Contractor's manager should give a prior accompanied tour to explain safe access and egress, any areas where demolition is taking place etc.
- ***Managerial services*** – nominated points of contact for Principal Contractor's site manager, health and safety coordinator and other key members of development team.
- ***Technical advice*** to be available if required (e.g. via client or Principal Contractor's consulting engineer) re. protection of adjacent streets and buildings, obstructions, depth of excavation, live services etc.
- ***Site accommodation*** and welfare facilities with power, running mains water, heating and lighting. To include furnished main base cabin or other area to use as a work space, access to a furnished mess area; a separate male/female changing area and toilets; plus additional lockable steel cabin for tools and finds.
- ***Site preparation and clearance***. Removal of structures, rubbish, spoil heaps, demolition materials, slab, modern obstructions, infill, made ground, etc. as required, prior to and during the archaeological investigation. If necessary use of a mechanical excavator, under archaeological supervision, but occasional hand work by labourers may be needed (e.g. clearing individual obstructions or removing spoil from excavation areas if access for a machine if not possible).
- ***Transport/mounding/storage of spoil*** from archaeological investigation areas. This includes removal from site, if necessary.
- ***Filling back and reinstatement*** upon completion (investigation areas are normally backfilled, for safety reasons, unless there are client instructions to the contrary).
- ***Supply of plant and equipment***; Use of a 360 degree tracked mechanical excavator if necessary; supplied with driver, breaker, toothed digging bucket and toothless ditching blade. Other plant such as a Kubota type mini-excavator, dumpers, compressor/breakers, hoist and pumps may also be needed dependent on ground conditions and the depth of archaeological investigation
- ***Accreditation and supervision of operatives, plant and equipment***, including supply of banksmen if necessary.
- ***Temporary support*****:** design, installation and maintenance of appropriate temporary support to archaeological investigation areas (or to individual deep features such as wells), where deeper than c 1.20m. This is normally via benching/battering back and/or shoring, depending on depth and ground conditions. A review will be carried out with the Principal Contractor at c 1.20m to determine the most appropriate method.

- *Pumping-out* (if required): A suitable method to keep investigation areas (or individual deep features such as wells) dry, e.g. pumping into a previously investigated trench, to create a sump.
- *Temporary roofing* (if required) to archaeological excavations (e.g. clear plastic sheets on scaffolding frame). Needs to have adequate water drainage and ventilation. Small-scale, portable roofing may be required if individual archaeological features of particular significance are revealed (e.g. a grave) depending on weather conditions.
- ***110v. site lighting*** (if required) for general access to excavations, plus individual task lighting within trenches (e.g. tripod-mounted spotlights) if required. The need for lighting depends on the availability of natural light eg depth, season, weather conditions or whether operating inside a standing building
- ***Locating and making safe any live services or hazardous substances*** (above or below ground): This includes advising on the presence of any services; biological, chemical or industrial contamination; polluted water, asbestos etc inside standing buildings or within the ground. MoLA is unlikely to be able to commence the specified investigations (or to continue them in the case of encountering unexpected services etc) until these have been removed or otherwise made safe.
- ***Development of a safe method of working***: archaeologists will not be able to work within excavations whilst attendances (such as installing temporary support or removing spoil) are taking place or when demolition, construction or heavy plant activity occurs adjacent or overhead.

10.10 MOLA Welfare, Health & Safety Method Statement

The MOLA Site Supervisor is responsible for ensuring that a copy of the Welfare, Health & Safety Method Statement is made available at every archaeological site. Where further changes or additions to the WH&S Method Statement are required and agreed these should be appended to the site master copy by the Site Supervisor. All changes to the WH&S Method Statement will be signed off by the Contract Manager and Field Manager

MOLA Site Supervisor

10.11 Site-specific Health and Safety methodology

10.11.1 Site Access

General site access and visitors

Safe access routes from the site gate to work Areas and any offices and/or facilities will be erected and maintained at all times throughout the course of the archaeological works by the Principal Contractor

Principal Contractor responsible

All visitors to site for archaeological purposes will be accompanied by a member of MOLA staff for the duration of their visit.

MOLA supervisor responsible

Trench Access and barriers

The Contractor will establish and maintain designated safe routes to and from MOLA areas of work, and demarcate them and areas of archaeological work with suitable barriers as required and necessary.

Principal contractor to supply and maintain

The MOLA project supervisor will monitor the safety of access routes and areas used by MOLA.	MOLA supervisor responsible
Safe access into deep investigation areas will be provided and maintained by the Contractor.	Principal Contractor to supply and maintain
Shoring in areas which exceed 1.20m in depth (and those of less than 1.20m which are judged unstable) will be installed in accordance with Safety Regulations and maintained throughout the occupancy of the site by the Principal contractor.	Principal contractor to supply and maintain

10.11.2 Services – Gas, Electricity, Water, Sewers, Telecomms

No member of MOLA staff will touch or otherwise interfere with a live service even if declared 'safe'. In the event of the accidental disruption of a live service by archaeologists or sub-contractors under archaeological supervision the MOLA supervisor will inform both their project manager and the Principal Contractor and, when appropriate, call the relevant emergency number.	MOLA supervisor responsible
In so far as is reasonably possible the location of all live under ground and over ground services has been ascertained by the client and/or his agents and notified to MOLA before the 'handover meeting' (see above) and disconnected, diverted or made safe as appropriate.	Principal Contractor responsible

10.11.3 COSHH and Contaminated land

MOLA is not aware of any previous documented land usage suggesting that the site is likely to contain specific potentially dangerous subsurface ground contamination.

10.11.4 Area safety

10.11.4.1 <u>Preliminaries</u>

• All machine investigation of the area (under the supervision of the archaeological supervisor) will be assisted by a qualified banksman provided by the Principal Contractor.	Principal Contractor

10.11.4.2 <u>During investigation</u>

• No MOLA staff will enter the area if it is declared unsafe by any competent person or the MOLA project supervisor. • A safe working distance of 6 metres, between archaeologist recording and planning features and the machines in use will be maintained at all times.	MOLA site supervisor

10.11.5 Confined Spaces

A “confined space” is any space of a substantially enclosed nature where there is a reasonably foreseeable risk of injury from a specific source. The space does not have to be completely enclosed. MOLA will accept any area as a “confined space” where so designated by LU or Principal Contractor and may independently designate such spaces where the MOLA contract manager in consultation with the MOLA H&S advisor considers that conditions in the working area are consistent with the need to adopt Confined Spaces working practices. Note that work areas may become confined spaces as work progresses. Where so designated MOLA staff will operate the space in accordance with a safe system of work.

At the time of writing no areas have been defined by MOLA or the client as Confined Spaces. This will be kept under constant review.

10.12 Generic

10.12.1 National legislation

MOLA staff will at all times comply with all existing national legislation regarding Health and Safety at work.

10.12.2 Health and Safety Policies

All MOLA staff will adhere to the Health and Safety regulations and procedures laid down in the most up to date version of the MOLA *Health & Safety Policy*. Copies of this document will be made available for inspection on site to clients, visitors, MOLA staff and contractors.

MOLA Site Supervisor

The Policy reflects guidance contained in the HSE’s publication HS(G)65 *Successful Health and Safety Management* as a guide to management of Health and Safety; and guidance contained in the HSE ’s *Protection of workers and the General Public during the Development of Contaminated Land.*

10.12.3 Client or Principal Contractor H&S Policy/Instructions

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 Health and Safety Policy or specific on-site instructions provided by the client or their appointed Principal Contractor or H&S coordinator.

10.12.4 Specialist H&S Advice

MOLA retains the services of and is advised by a third party H&S advisory company, who provide ongoing advice on health and safety matters to all departments in the organisation. On most sites a member of this organisation will visit at least once to carry out a H&S audit. They report to the MOLA site supervisor who will carry out their recommendations. Where necessary, or if requested, this report will be made available to the client’s H&S representative.

MOLA Site Supervisor

10.12.5 Construction Design and Management Regulations CDM 2007

Archaeology as a stand-alone activity and profession is not considered to be part of the construction industry and is therefore currently formally exempt from the CDM regulations 2007. However, where archaeological work is undertaken as part of a construction project, whether defined as notifiable or not under the regulations, it is considered reasonable to expect that work to conform to CDM 2007. MOLA cannot act as the CDM co-ordinator or Principal Contractor for any construction project, but may be considered a Designer under the regulations.

10.12.6 CSCS

At present the profession of Archaeologist is largely covered by the CSCS, Construction Related Organisation CRO White Card for Archaeological Technician (Code 5363); other cards are available for site visitors etc. For this all MOLA staff likely to undertake fieldwork must pass a CITB Health and Safety Test at least to operative level. Where a member of staff has not yet received their card they will produce a certificate to prove that they have passed the test or a letter confirming that a test has been booked for them.

10.12.7 CHAS

MOLA is an accredited contractor with the Contractors' Health and Safety Scheme (CHAS) a founder member of Safety Schemes in Procurement (SSIP). This demonstrated compliance with and sound management of current basic H&S legislation.

10.12.8 Hours of work

MOLA staff will generally work a 37 hour week between the hours of 8.0/8.30am until 4.30/5.0pm, Monday to Friday 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.

10.12.9 English Language

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.

10.12.10 Behaviour

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 areas of work. Alcohol is not permitted on site.

10.12.11 Legal Status of employees

As a division of the Museum of London, MOLA conforms to all UK employment legislation covering the legal right to work in the UK of all staff, and has in place, via the Museum's Human Resources department, rigorous procedures to ensure that legislation is conformed to.

10.12.12 Training and Certification

MOLA provides Safety Training for its staff as follows:

- Induction Training for all staff (undertaken on joining MOLA, and as appropriate on individual projects).
- General H&S Training for supervisory staff (an H&S awareness course targeted at Field and Support Staff).
- Specialist H&S Training (designed to cover specialist areas and to update professional knowledge; as appropriate to deployment)

All MOLA staff on site will be competent to carry out their archaeological work. Where less experienced staff are used these will at all times be under the supervision of the Site Supervisor or other experienced member of staff for training. Certain specific aspects of MOLA work require additional and specific training and certification, and only those members of staff with the relevant training and certification will be allowed to undertake them. These include Cable and Pipe/Underground Service Location, Chainsaw use, Confined Spaces and Power Auger use.

10.12.13 Personal Protective Equipment (PPE)

All MOLA staff are supplied with and will wear or use the following PPE where required and as appropriate:

- Safety Helmets (EN397)
- Ear Defenders (EN 352-3)
- Safety spectacles (EN166)
- Goggles (Chemical BSEN 166 Type 3)
- Dust masks plain and valved (EN149 2001)
- Half masks and filters (EN140 & A1B1E1K1P3)
- Disposable overalls (Type 5/6 disposable EN340)
- Hi-visibility vests (EN471)
- Gloves Nitrile and latex disposable, PVC, EN374
- Heavy duty nitron rubber gloves (EN420, 388)
- Safety footwear - steel toecap and mid-sole boots and Wellingtons EN345-47
- 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).

Any other PPE required by the client and/or Principal Contractor must be provided or funded by them**.**

10.12.14 MOLA H&S Responsibility matrix

		Overall responsibility	***Accountability, monitoring and/or actions***	***In consultation with:***
Policies and Procedures	Maintain WSI and H&S MSs masters	MOLA MD	Senior Consultant	Ops Managers
	Regular maintenance Health & Safety Policy	MOLA MD	Field Manager	Client Teams, Ops Teams, Union MOL H&S
	Relay of H&S legislation or guidance changes to appropriate managers	MOLA MD	Operations Manager	H&S Advisors (External and MOL)
Project Activities	DTA template and H&S components	Senior Consultant	DTA Team Manager	Contract Managers
	Project-specific H&S elements of DTA	DTA Team Manager	DTA team member	Contract Managers
	Create Project Specific Risk Assessment	Senior Consultant	Contract Manager	Site Supervisor / H&S advisor Field Manager
	Create Project Specific H&S Method Statement in WSI	Senior Consultant	Contract Manager	Site Supervisor / H&S advisor Field Manager

	Handover of site to Operations for H&S	Senior Consultant	Contract Manager	Field Manager and Site Supervisor
	Acceptance of site by Operations for H&S	Operations Manager	Field Manager**	Site Supervisors and Contract Manager
	Adherence to H&S Method Statement	Field Manager	Site Supervisor	Project team 3rd party advisor Contract manager
	Updates of site specific risk assessments	Field Manager	Site Supervisor	Contract Manager 3rd party advisor
	Updates of site H&S Method Statement	Field Manager	Site Supervisor	Contract Manager 3rd party advisor
	Raising H&S issues during site	Site supervisor	All	All
	Resolving H&S issues at site level	Field Manager*	Site supervisor	Contract Manager , 3rd party advisor
	Escalation of non-resolved H&S issues	Senior Consultant	Field Manager*	Site Supervisor 3rd party advisor
	General Health & Safety Liaison with Client	Contract Manager	Site supervisor	3rd party advisor Field Manager*

* or, in absence, Operations Manager

** may be delegated on smaller sites to site supervisors. This will be recorded.

Note: in general, 'final responsibility' rests with those in column three; continuous monitoring, actions required, documents to write etc are by those in column four.

10.12.15 Liaison with Client/Principal Contractor H&S representative

The appointed MOLA site supervisor will act as the principal liaison with their counterpart at the offices of the Principal Contractor and/or Attendance Contractor throughout the periods of investigation. They will take advice from MOLA's 3rd party H&S advisor and liaise with the Contract Manager.

MOLA Site Supervisor

10.12.16 Personal information relating to MOLA staff

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 express 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 it without first obtaining a signed standard written statement.

10.12.17 Fire and Emergency Procedures

Where the client or Principal Contractor has procedures for dealing with fire and other emergencies on site, MOLA staff will at all times inform themselves of these procedures and follow them

MOLA Site Supervisor

Where the client or Principal Contractor advises that it is necessary for MOLA to establish its own procedures with regards to fire and other emergencies on a site, this will be done by the Site Supervisor by the end of the first day of site work, after details of the site layout (e.g. entrances/exits, safe assembly points, fire equipment points, location of accommodation, trenches and other work areas) have been finalised.

MOLA Site Supervisor

10.12.18 First Aid and appointed First Aider(s)

MOLA will ensure there is an appointed first aider(s) for the site. A MOLA first aid kit, of an appropriate size for the site, will be located in the site office/mess hut/canteen.

10.12.19 MOLA Safety Documents and Accident Book

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 a minimum of:

MOLA Site Supervisor

- Current Health and Safety at Law Poster for display where legislation requires
- Accident Book compliant with the Data Protection Regulations.
- MOLA Public Liability Insurance & Employers Liability Insurance for display
- Where To Get First Aid poster – to be displayed if required.
- Current MOLA Health and Safety Policy
- A copy of the site Welfare, Health and Safety Method Statement, extracted from the Site WSI, and modified as agreed during the course of the site.

10.12.20 Inductions and Tool Box talks

All MOLA staff and volunteers receive a full induction including Health and Safety on commencement of their first day of work with the organisation. A record of the induction is kept.

Where a site is under the control of a Principal Contractor, MOLA staff will attend all initial site inductions and subsequent toolbox talks as required and managed by the Principal Contractor

Where MOLA has control of a site: A site-specific induction will be undertaken by the Site Supervisor (or other competent staff member) for each member of staff on their first day of work. All visitors to the site will also receive a short Health and Safety induction on their first visit. A signed record of all on site inductions will be maintained by MOLA for inspection.

MOLA Site Supervisor

Toolbox Talks

Irrespective of whether the site is controlled by MOLA or a Principal Contractor, on

MOLA Site

larger projects e.g. those with more than 2-3 staff and of a week or longer duration, regular toolbox talks will be given by the MOLA Supervisor or other suitable member of staff using the *CITB: construction site safety tool box talks manual.* As a minimum requirement these talks will occur 1-2 times per week and be of 10-15 minutes duration.

Supervisor

10.12.21 Accident reporting and RIDDOR

In order to identify quickly problem areas and allow corrective action to be taken all accidents, dangerous occurrences and near misses, including those that do not cause injury, will be a) reported immediately to the MOLA supervisor and b) entered in the site Accident Book.

MOLA Site Supervisor

The *Reporting of Injuries, Diseases and Dangerous Occurrences* (RIDDOR) Regulations 1995 sets out requirements for the reporting of certain types of accidents. RIDDOR notifiable accidents will be reported immediately by the MOLA site supervisor to:

MOLA Site Supervisor

- the MOLA Field Manager, who inform the appropriate enforcing authority, normally the Health and Safety Executive.

- the client's representative on site

If necessary 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.

10.12.22 Stopping work for Health and Safety issues

If at any time the site or part of the site being worked by MOLA is made unsafe or the safety of MOLA staff is endangered, other than through the actions of MOLA, then MOLA will give notice to the client or his agents 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 immediately to abate the danger or risk then MOLA reserves the right to withdraw its staff and workforce from the site until it is declared 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 will also be sought.

10.12.23 Asbestos

The Client and/or Principal Contractor will supply MOLA with a copy of the documents required under Regulation 4 of the Control of Asbestos Regulations 2006 relating to any building that MOLA staff will be required to enter during their work or any building within the same site where demolition will be taking place. No work will be undertaken without this. Where the client has not provided this before work is due to start, MOLA will procure the services of a competent body to carry out the survey and recharge any costs to the client. Where risks are identified, mitigations will be put in place by the client before work starts.

Client to supply

10.13 Welfare

As the fieldwork may extend over several weeks, the MOLA archaeologist(s) will require access to office space for working on the archaeological records and for storing finds, and a lockable facility for storage of tools and equipment. Although some of the site visits are likely to be

intermittent the archaeologist should also have access to toilets with hot and cold water. These facilities will be supplied by the Principal Contractor.

MOLA will require accommodation for the site staff during the investigation. The following will therefore be supplied by the Principal Contractor/MOLA:

Access to a lockable mess area with lighting, electrical points, heating, mains water supply, chairs, benches and tables.	Principal contractor
Access to a lockable office area with lighting, electrical points, heating, chairs, tables (or desks), shelf units, lockable filing cabinet.	Supplied by Principal contractor
Male and female toilets/changing rooms with hot and cold water.	Supplied by Principal Contractor
A lockable tool store for holding large hand tools, sufficiently robust to store surveying and other equipment.	Supplied by Principal contractor
A lockable store for finds and environmental samples.	Supplied by Principal contractor
Separate finds and environmental cleaning and processing areas, with running water and drainage	Supplied by Principal contractor

10.14 Preliminary Site Risk Assessment

Under the Management of Health and Safety at Work Regulations 1999, MOLA has undertaken a preliminary assessment of the risks to H&S of employees, other contractors, and visitors (authorised and unauthorised) to which they may be exposed whilst they are on site. Prior to the commencement of the on-site work MOLA has prepared the following Overall Site Risk Assessment for the hazards it feels are likely to be present on the site.

This exercise is not intended to, and cannot, replace the need to conduct more detailed Risk Assessments on site once work has commenced. Further Risk Assessments for specific activities and areas of work will be made as work progresses and as required.	MOLA Site Supervisor
Risk Assessments form part of the Health and Safety controls for the site and will be kept on file on site and brought to the attention of and made available to all staff working there.	MOLA Site Supervisor

10.14.1 Preliminary Overall Site Risk Assessment

The MOLA Site Supervisor will be responsible during the progress of the site work for monitoring whether (and what) *additional* updates, modifications or Specific Risk Assessments may be required.	MOLA Site Supervisor

Site name: Bond Street Station LUL Upgrade	**Type: Buried and built heritage investigation**	**Date: Oct 2010**

Persons Affected	**No**	**Classification**	**No**
Employees	Up to 4	Experienced	Up to 4
Other workers	-	Inexperienced	-
Public	-	Disabled	-

Known and Suspected Hazards on site (tick as appropriate)					
Mobile Plant	✓	Power Auger	✓	Ionising radiation	
Moving Machine Parts	✓	Access equipment	✓	Lasers	
Moving objects		Hazardous Substances		Ultraviolet	
Falls from height	✓	Contamination		Temperature	
Falls on level	✓	Micro organisms		Noise	
Manual Handling	✓	Vermin/Weil's Disease		Vibration	
Buried services	✓	Fumes/Gas		Weather	
Electrical		Lone working		Hot/cold objects	
LPG etc		Welfare		Physical attack etc	
Fire/Explosion		Confined spaces		Vehicles	
Chainsaw		Hand Tools	✓	Human remains	✓

Control Measures Required

Compliance with H&S at Work Act 1974, Construction(Design and Management) Regulations 2007 and MOLA H&S Policy

Compliance with MOLA Generic or Site Specific Risk Assessment(s). And:

Assessment of *Remaining* risk (Low, Medium, High) (see notes on reverse)

	L	**M**	**H**		**L**	**M**	**H**		**L**	**M**	**H**
Mobile Plant				Power Auger	✓			Ionising radiation			
Machine Parts	✓			Access equipment	✓			Lasers			
Moving objects				Hazardous Substances				Ultraviolet			
Falls from height	✓			Contamination				Temperature			
Falls on level	✓			Micro organisms				Noise			
Manual Handling	✓			Vermin/Weil's Disease				Vibration			
Buried services	✓			Fumes/Gas				Weather			
Electrical				Lone working				Hot/cold objects			
LPG etc				Welfare				Physical attack etc			
Fire/Explosion				Confined spaces				Vehicles			
Chainsaw				Hand Tools	✓			Human remains	✓		

Emergency action/additional assessment required for remaining medium/high risk

Competent Person(s) appointed to take action: PO HSO Ian Grainger	**Report seen by (initials)**	
	SCM George Dennis	**Archaeologists**
	SA(s)	
	Client	
	Contractor	
	Other	

10.14.2 Specific Risk Assessments

M0LA RISK ASSESSMENT		**MECHANICAL EXCAVATORS**			
Significant Hazards		**Assessment of Risk**			
		Insignif	**Low**	**Medium**	**High**
1	Shovel or load dropping inadvertently		●		
2	Overturning of machine		●		
3	Materials dropping from shovel or bucket			●	
4	Persons struck by machine			●	
5	Restriction of driver's vision.			●	
6	Hydraulic fluid spray		●		
7					

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy

Construction(Design and Management) Regulations 2007

Control of noise at Work regulations 2005

Control of Vibrations at Work Regulations 2005

British or European Standards including:

5228: Noise on construction sites.

6912: Safety in earthmoving machinery

6913: Operation & maintenance of earthmoving machinery

.**Planning:**

MOLA Staff will not operate Mechanical excavators.

Choice of hire equipment and requirements assessed with regards to ground conditions and local operational requirements.

Choice of Excavators and driver/operator to be from sub-contractors competent to provide the machinery and service required.

Physical:

180 degree machines - When using the backhoe the front bucket must be lowered to the ground

360 degree machines - At least 600mm clearance to be allowed for tail swing.

No persons are allowed to stand or work within operating radius without the operator's permission. Loads must not be slewed over personnel, vehicle cabins or huts.

Overhangs are not to be created on high workfaces. Wheels/tracks are to be at 90 degrees to the workface.

Travel and operations on a gradient must be controlled to ensure machine stability.

A banksman is to be used where driver's vision is impaired or operating in congested areas.

Management:

Certification of drivers must be checked.

Drivers must be over 18 years old.

MOLA Staff must not operate mechanical excavators

All trenching and deep excavation work must be supervised to ensure the stability of machine and excavation, and that persons do not work within the swinging radius of a backhoe.

Vehicles must be checked by drivers before use and secured afterwards.

Management must ensure speed restrictions are enforced, and monitor use on sloping ground.

Noise levels are to be monitored and assessed as may be necessary.

Training:

Driver training to CITB/CSCS (or equivalent) standard is required; also to comply with BS 6264: Operator training for earthmoving machinery. Excavator driving by uncertificated operatives is not permitted; this also applies to our subcontractors and the self-employed.

MOLA RISK ASSESSMENT		UNDERGROUND SERVICES			
Significant Hazards		Assessment of Risk			
		Insignif	Low	Medium	High
1	Contact with electricity or gas supplies			●	
2	Contact with sewage		●		
3	Flooding from water services		●		
4	Explosion or asphyxia from gas leaks		●		
5					
6					
7					

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy

Electricity at Work Regs.1989

Construction(Design and Management) Regulations 2007

DSEAR 2002

Regulatory Reform (Fire Safety) Order 2005

HSE Guidance Booklet HS(G)47 - Avoiding danger from underground services.

Highways Act 1980,

New Roads and Streetworks Act 1991

DoT ACOP - Safety at Street Works & Roadworks

Traffic Signs Manual, Chapter 8

National Joint Utilities Group publications :

No.3 - Cable locating devices

No.42 - Identification of small buried mains and services.

Planning:

All work to be planned in advance, taking account of the above.

Full details of underground services must be obtained in advance from the relevant authority, including Television Cable Companies, BT and other telephone companies, and private property owners.

Physical:

Plans and cable location equipment to be available before work starts. Plans must not be assumed to be accurate, and location devices to be used in addition. Trial holes to be dug, using hand digging to confirm locations, taking account of physical indications such as junction boxes and manholes. The lines of services to be marked, using paint, wooden pegs, etc. All services to be assumed to be live until proven otherwise. Services crossing investigations to be supported.

Services in concrete to be isolated before breaking operations begin.

Management:

Site supervisors or the person in charge to ensure that services are located and marked before further work

begins. Full consultation to be held with relevant authorities to agree precautions to be carried out before work begins. All personnel, machine operators and subcontractors to be fully briefed before they begin work. All temporary services to be properly marked.
Training: The person in charge must be trained in operation of cable locating equipment, and the requirements of HS(G)47.Personnel locating services must be similarly trained.

MOLA RISK ASSESSMENT		Manual Handling (Fencing, Planks, Boards)			
Significant Hazards		Assessment of Risk			
		Insignif	Low	Medium	High
1	Immediate Injury to back and body			●	
2	Musculoskeletal disorder etc			●	
3	Slips and Trips			●	

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy; Construction(Design and Management) Regulations 2007

Manual Handling Operations Regulations 1992 (amended 2002)

Health and Safety at Work Act 1974

COSHH Regulations 2002

Provision and Use of Work Equipment Regulations 1998 (amended 2002)

Management of Health and Safety at Work Regulations 1999

Planning:

The need for manual handling to be removed wherever possible, and minimised where practical.

The task or workplace to be structured to reduce the risk of injury wherever possible

Suitable mechanical aids to be provided where possible

Mechanical aids to be maintained in good working order. All large or unusual manual handling tasks to be subject of a site/task specific Risk Assessment by a competent person

Physical and Management:

Fill in Manual Handling Risk Assessment Record below

Determine size and weight as accurately as possible. Assess fragility/flexibility. Assess material and examine for splinters, protruding nails and other puncture/cut hazards. Find and secure all movable parts, eg joints, step ladder legs etc. Ensure appropriate PPE is worn, particularly gloves. Delay task if weather/site conditions inappropriate, particularly if it is too windy – consider wind resistance on boards/planks. Decide on the likely duration of the task and the numbers needed to complete it. Assess carefully how many are actually needed to move each item safely and comfortably. Assess the route to be used, particularly with long or wide objects in mind. Minimise trip hazards, constrictions on space, variations in height for lifting etc. Employ professional movers where practical for larger tasks. Use cranes, pallet or forklift trucks where possible If on site consult other contractors as to route and timing of task. Ensure staff selected for the task are the most suitable for the purpose? E.g identify those who cannot perform the task for medical/physical reasons. Ensure that sufficient breaks/rests are taken.

Training: All staff to be trained in Manual Handling Techniques where practicable and are trained and certificated to use pallet trucks etc. All staff to Follow Manual Handling Instructions as per…..

MANUAL HANDLING RISK ASSESSMENT RECORD			
Risk analysis	**High**	**Medium**	**Low**
The Task			

Does it involve holding the load away from the body?			
Does it involve lifting or lowering distances?			
Does it involve carrying over distances?			
Does it involve twisting or bending?			
Does it involve pushing or pulling?			
Does it involve frequent or prolonged physical effort?			
Does it involve static effort (e.g. holding positions)?			
Does it involve reaching up?			
Does it involve large vertical movement?			
Does it involve the unpredictable movement of Loads?			
Does it involve repetitive handling?			
Does it involve insufficient rest or recovery periods?			
The Load			
How many objects are to be moved?			
Are they too long, wide, thick or heavy(Note over 25kg for men and 17kg. For women are HSE guidelines only –not weight limits)?			
What materials are they made of?			
Are the boards/planks too thin/flexible for their size to be carried manually?			
Are there any movable sections, joints to trap limbs/fingers, cause trips?			
Are there splinters, nails, other hazards protruding			
Does each item involve team handling?			
Could they be moved by other means? (e.g crane or fork lift truck?)			
Should/could professional movers be used?			
Are they dry? Easy to handle?			
Does it restrict the operator's movement or vision?			
Is it unstable with an awkward centre of gravity?			
Are the type and/or size of handholds inadequate			
Does it necessitate the use of PPE (e.g. gloves, safety footwear, etc.)?			
The Working Environment			
Is the floor slippery or unstable?			
Is the lighting inadequate?			
Are there space restrictions or constraints on posture?			
Is there a temporary working platform (e.g. scaffold, hop-up etc)?			
Are there unreasonable levels of hot, cold, wind, or air movement?			

On site - what is the weather like (hot, cold, rain, wind), can the task be delayed for better conditions? In particular is it too windy?			
Are the standards of housekeeping poor?			
Is the floor uneven, or vary in level, are there steps/stairs or obstructions?			
Has the route been assessed with long/wide objects in mind? (corners, stairs, low ceilings etc?			
On site - Has route been agreed with other contractors site?			
The individual			
Does the task require unusual capability?			
Could the task be age restricted?			
Could it be limited to males only? (e.g over 18kg in weight)			
Is there a need for specialist information or training			
Have staff received manual handling training ?			
Have staff received training to operate pallet trucks etc?			
Could the task be hazardous to those with a health problem?			
Should the task be prohibited for pregnant women?			

Is there a risk of injury or the development of one?	**Yes**	**No**
If yes what action is needed?		

Name:	**Signature:**	**Position:**

MoLA RISK ASSESSMENT		**HAND TOOLS**			
Significant Hazards		**Assessment of Risk**			
		Insignif	**Low**	**Medium**	**High**
1	Eye injury		•		

2	Injury to hands, feet and body			•	
3					
4					
5					
6					
7					

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MoLA Safety Policy

Provision and Use of Work Equipment Regulations 1998 (amended 2002)

Construction(Design and Management) Regulations 2007

Planning:

Hand tools = simple none mechanical tools eg spades, shovels, mattocks, grubbing mattocks, pick axes, chisels, hammers, screw drivers etc. Can also include small electrical equipment – drills etc

Tools provided must be assessed to ensure that they are suitable, fit for the purpose, the environment in which they are to be used and are in good working condition.

Operatives must be assessed to ensure that they are physically capable of undertaking the task and using the required tool.

Operative must be trained and supervised in the use of hand tools where applicable.

Consider manual handling risk assessment where applicable.

Physical:

Eye and hand protection is to be provided and used whenever work is done using cold chisels, drills, grinders or other tools where there is a risk of flying particles or pieces of the tool breaking off.

Open-bladed knives, scalpels, screwdrivers and other sharp tools are to be carried and used so as not to cause injury to the user or others.

Use tools correctly as per training.

Do not over exert yourself.

Insulated tools must be used where there is a possibility of live electrical work.

Management:

Site Supervisors and those in charge of work must monitor hand tools which can deteriorate with use, to ensure they are repaired or replaced as necessary, and to ensure that the correct tools are being used.

Specific checks must be made as follows:

Chisels for mushroom heads

Hammer and file handles for deterioration and exposed tangs.

Open-ended spanners for splayed jaws.

Spade and digging tool handles for tightness and damage

Supervisors must also check at the beginning of each day and/or shift, that operatives are fit for the task and to use the tools required. Consideration must be given to the duration and intensity of the task in this regard. Use manual handling risk assessment check list where applicable.

Training:

Personnel must be instructed in the correct method of use and in maintenance requirements as applicable to them (level of experience) and the specifics of the task (unusual tools or task). This may be done as on the job training, task specific instruction and training, tool box talks

MOLA RISK ASSESSMENT		POWER AUGER			
Significant Hazards		Assessment of Risk			
		Insignif	Low	Medium	High
1	Danger of disturbance of live services		●		

2	Manual handling injuries			●	
3	Moving machine parts			●	
4	Petrol fumes/explosion		●		

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy.

Construction(Design and Management) Regulations 2007

Control of Noise at Work regulations (2005)

Control of Vibrations at Work Regulations 2005

Provision and Use of Work Equipment Regs.1998 (amended 2002)

Manual Handling Operations Regs. 1992 (amended 2002)

Management of Health and Safety at Work Regs.1999 (amended 2002).

Planning:

The Power Augers will only be used under the guidance of MOLA Geoarchaeology staff.

Routes of all known underground services to be verified before work commences. A CAT scan Will be carried out in advance of augering at each location.

Physical:

No persons other that the auger operators are allowed to stand or work within operating radius without the operator's permission.

Due care must be taken when lifting heavy auger parts, to avoid back injuries

As there is a danger from petrol fumes, augering will NOT be undertaken in confined spaces.

Ear protectors will be worn whilst drilling.

A minimum of 2 geo-archaeologists or other trained staff will be present during all drilling work.

Steel toe-capped footwear, Hard hats and a high visibility jacket will be worn at all times.

Management:

All operatives working within the augering area will wear head protection.

Each auger area to be CAT scanned before augering commences.

Training:

Experienced operators only can use this machinery.

MOLA RISK ASSESSMENT		STANDING BUILDING WORK			
Significant Hazards		Assessment of Risk			
		Insignif	Low	Medium	High
1	Electrical hazards		●		
2	Working alone/Entrapment etc		●		
3	Slips and Trips on level		●		
4	Fall from height		●		
5	Unsafe structures (collapse, etc)		●		
6	Poor lighting		●		
7	Adverse weather		●		
8	Confined Spaces		●		
9	Vermin, biological and chemical agents.		●		
10	Asbestos		●		

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy. The Management of Health and Safety at Work Regs 1999. Construction(Design and Management) Regulations 2007. Electricity at Work Regulations 1989. HSE Guidance Booklet HS(G)85: Electricity at Work - Safe Working Practices. HSE leaflet IND(G)73(L): Working alone in safety. Work at Height Regulations 2005. HSE Guidance Note GS6 (Revised 1997) - Avoidance of danger, overhead electrical lines. Confined Spaces Regulations 1997 HSE Guidance Note GS5 - Entry into confined spaces. Instruction Card for Work in Rat Infested Buildings & Sewers HSE GS 0406. Leptospirosis: Are you at Risk? HSE IND(G)84L. Control of Asbestos at Work Regulations 2002 and ACOP 2nd edition. Work with asbestos insulation, asbestos coating and asbestos insulating board, ACOP, 2nd edition.

Planning: Consideration to be given to the need to send more than one person to the building – e.g. if in doubt do not send lone female (consult Site Visit Risk Assessment). Assess building/structure for hazards – unsafe electrical circuits, appliances, unsafe floors, stairs, walls; presence of asbestos, vermin, squatters, biological/chemical hazards; poor lighting. Consider need to work at height and in confined spaces, provide appropriate safety equipment: harnesses, scaffolding platforms, escape apparatus etc and trained staff. Consult separate risk assessments as appropriate. Prohibit access to unsafe areas as applicable. Provide individual first aid kit and torch/task lighting, PPE, and mobile phone as applicable.

Physical: Do not enter property without permission of owner/client. Carry either fully charged work or personal mobile. Check signal strength etc. Take a torch with charged batteries if entering disused buildings Wear PPE. Be vigilant and avoid unsound floors, stairs, walls, standing and foul water, faulty electrical circuits etc). Take appropriate precautions when working at height ie wear safety harness, ensure all scaffolding has been declared safe by competent person, ensure that all platforms etc have appropriate edge protection, do not use unsecured ladders and do not use ladders inappropriately (avoid use of ladders where possible). Do not enter a confined space unless trained to do so, if alone, or without appropriate safety equipment. Ensure you have suitable clothing to match weather conditions (waterproof, warm winter clothing, hat/sleeves for hot summer). Do not enter property where there are aggressive/unsecured dogs/other animals/aggressive squatters. Be aware of possible rodent infestations. Carry leptospirosis card, wash hands before eating or smoking. Take individual first aid kit. If bitten etc, wash wound as soon as possible, report to nearest A&E. Ensure you have a tetanus jab if bitten by an animal or have a major cut. Do not enter any area that has no means of safe access/egress.

Management: Ensure that above sections are complied with as required and applicable.

Training: Ensure that all staff required to enter confined spaces are trained and certificated to do so.

MOLA RISK ASSESSMENT		ASBESTOS			
Significant Hazards		Assessment of Risk			
		Insignif	Low	Medium	High
1	Inhalation of asbestos-containing dust				•

ACTIONS ALREADY TAKEN TO REDUCE RISKS

Compliance with:

MOLA Safety Policy

Control of Asbestos Regulations 2006

Control of Asbestos at Work Regulations 2002 and ACOP 2nd edition

Work with asbestos insulation, asbestos coating and asbestos insulating board, ACOP, 2nd edition.

HSE Guidance Notes EH36 - Work with asbestos cement.

EH35 - Probable dust concentrations

EH37 - Work with asbestos insulating board

IND G 264 - Selecting Respiratory Protective Equipment for Work with Asbestos

Planning:

The commissioning project manager will obtain a copy of the asbestos certificate for any building or structure before work commences (see section 19 H&S policy)

Where there is no certificate, no work will commence where age or use of a building would suggest presence of asbestos until it has been surveyed by a competent body – Not MOLA staff.

The survey or certificate must indicate that any asbestos is in good condition before work commences in that area

MOLA is not a licensed contractor for the removal of asbestos not and only a licensed contractor will be used if applicable for all asbestos-related work. Note MoLA cannot act a Principal contractor under CDM 2007 and will not sub contract this work under normal circumstances – refer to Hascom for advice

A method statement will be prepared by the contractor before work starts, which will be approved by a competent person -Hascom.

Where asbestos is accidentally disturbed/loose in the ground Sections 19.08-9 of the policy will apply

Physical:

MOLA staff will not disturb or damage asbestos or undertake asbestos removal from a building or structure.

All contractors will wear Impervious hooded overalls and approved respirators will be worn when working with asbestos cement and control or action levels are likely to be exceeded. Entry to work areas will be restricted by use of barriers and warning signs. Damping down and measures to prevent sheets breaking will be used be used to prevent the release of dust. Thorough cleaning of the area by dustless methods (approved vacuum) will be carried out, or by damping, waste will be sealed in bags and labelled, and taken to a licensed tip.

Management:

Where the type of asbestos and possible exposure has not been established, 'worst case'

precautions are to be taken. Work by licensed contractors will be monitored to ensure entry restrictions, warning signs and method statements are complied with. Only authorised and trained personnel will work with asbestos materials (not MoLA staff), and all work will be monitored to ensure compliance with all current guidance
Training: Site Supervisors and those in charge of sites will be made aware of the contents of the ACOPs and other guidance, and precautions. Those personnel working with asbestos cement will be trained in the precautions and requirements of EH36. Training in the use, care, cleaning & maintenance of respiratory protective equipment will be provided prior to the issue of respirators.

10.15 Funding

The client will be making sufficient funds available to allow this archaeological scope and methodology to be implemented to the specified standard.

10.16 Bibliography

Archaeological Archives Forum: *A guide to best practice in creation, compilation, transfer and curation*

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Institute for Archaeologists, 2008e. *Standards and guidance: field evaluation*

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Museum of London, 1987 *Finds Procedures Manual.*

Museum of London, 1994 *Archaeological Site Manual 3rd edition*

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Museum of London, 2009 *General Standards for the preparation of archaeological archives deposited with the Museum of London*

MOLA, 2010 *Bond Street Station Upgrade, LUL Works, Heritage Scoping Appraisal*

MoLAS 2008 *Bond Street Station Upgrade Project, Archaeological Monitoring of Ground Investigations*

Fig 1 Site location

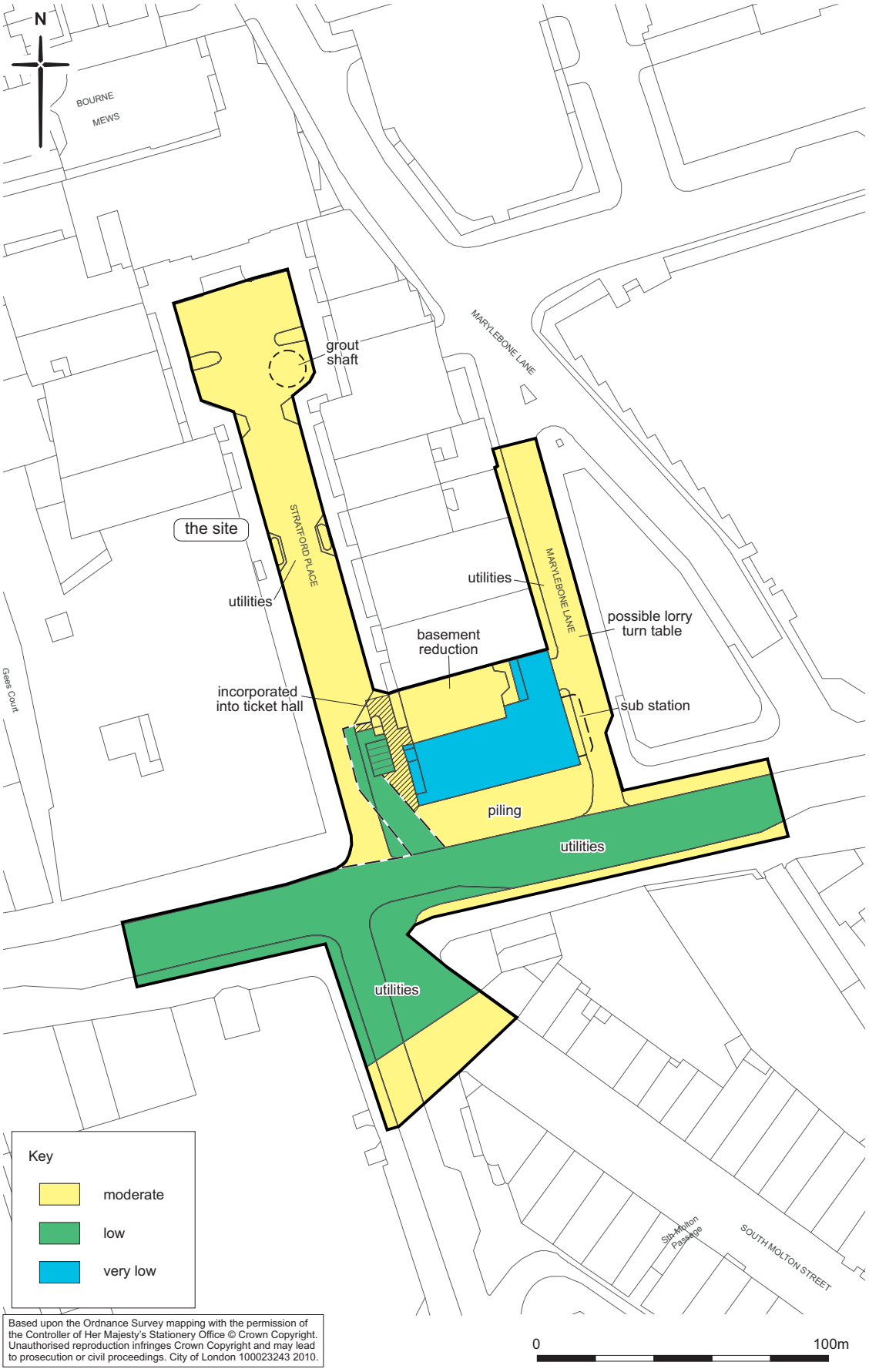

Fig 2 Areas of potential archaeological survival and location of selected groundworks

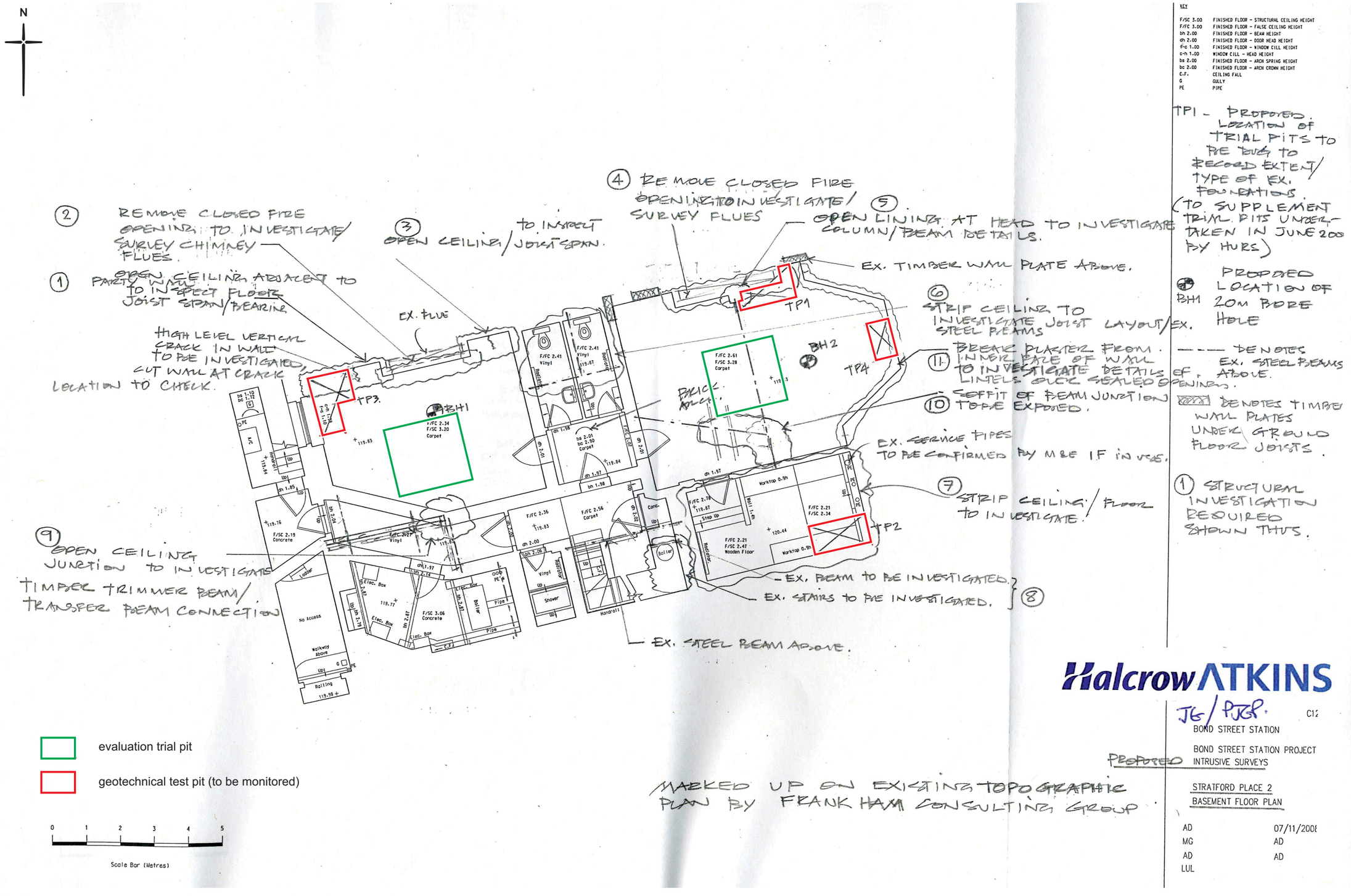

Fig 3 Location of archaeological evaluation trial pits and geotechnical test pits