

156–164 GRAY’S INN ROAD AND PANTHER HOUSE
London WC1
London Borough of Camden

**STAGE 2 WRITTEN SCHEME OF INVESTIGATION FOR AN ARCHAEOLOGICAL
EXCAVATION & WATCHING BRIEF**

Date 09/04/2016



156–164 GRAY’S INN ROAD AND PANTHER HOUSE

London WC1

London Borough of Camden

Written scheme of investigation for an archaeological excavation (Stage 2 WSI)

Planning reference 2015/6955/P and condition number 26

Site code – GIP21

Sign-off History:

Issue No.	Date:	Prepared by:	H&S signed off by:	Checked/ Approved by:	Reason for Issue:
1	30/03/21	Craig Halsey	TBC	Craig Halsey	First Draft
2	06/05/21	Craig Halsey	TBC	Craig Halsey	Amended following comments from HE

© MOLA

Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED
tel 0207 410 2200 email business@mola.org.uk

MOLA (Museum of London Archaeology) is a company limited by guarantee registered in England and Wales with company registration number 07751831 and charity registration number 1143574.
Registered office: Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED

Contents

<u>Contents</u>	<u>1</u>
<u>1 Introduction</u>	<u>2</u>
<u>2 Objectives of the excavation</u>	<u>7</u>
<u>3 Site specific methodology</u>	<u>8</u>
<u>4 Finds, archive and storage</u>	<u>12</u>
<u>5 Post-excavation reporting and dissemination</u>	<u>14</u>
<u>6 Programme and staffing</u>	<u>15</u>
<u>7 Funding</u>	<u>18</u>
<u>8 Bibliography</u>	<u>19</u>
<u>9 Appendix 1: Draft Transfer of finds ownership form</u>	<u>24</u>
<u>10 Appendix 2: Management, delivery and quality control</u>	<u>29</u>
<u>11 Appendix 3: generic 'controlled excavation' procedures</u>	<u>32</u>
<u>12 Health and Safety Risk Assessment and Method Statement (RAMS)</u>	<u>40</u>

List of figures

Fig 1 Site Location	21
Fig 2 Location of phased excavation areas, trenches, and pile locations	22
Fig 3 Schematic section across the site	23

1 Introduction

1.1 Project background

- 1.1.1 This Written Scheme of Investigation (or WSI) for an archaeological excavation on the site of 156-164 Gray's Inn Road and Panther House has been commissioned from MOLA by Avison Young on behalf of the client Panther House Developments Ltd.
- 1.1.2 The site is located at 156–164 Gray's Inn Road and Panther House (NGR 530998 182068: Fig 1). It comprises four different buildings. In the east there are three five-storey warehouse blocks which constitute Panther House, dating to 1905–06. Brain Yard, in the centre of the site, is a low building built in 1906–07 as an electricity substation for London Tramways. Number 156 Gray's Inn Road was also built in 1906–07 as a house for the supervisor on the tramways. Numbers 160–164 Gray's Inn Road are shop buildings built in 1926.
- 1.1.3 The site is bounded by Gray's Inn Road to the west, Tiverton Mansions and 11 Mount Pleasant to the south, Mount Pleasant to the East and Dulverton Mansions and Holsworthy Square to the north. The site falls within the historic parish of St Andrew Holborn, and lay within the county of Middlesex prior to being absorbed into the administration of the Greater London Borough of Camden. The ground level is recorded at 20.0m Ordnance Datum (OD) on Gray's Inn Road, immediately to the west of the site and is at 17.0m OD at the corner of Laystall Street and Mount Pleasant at the north-eastern corner of the site. Ground level in the open yard in the eastern part of the site is at 19.2m OD, reflecting a uniform level above the existing basement.
- 1.1.4 The site is being developed to create retail/restaurant uses at ground and basement levels with residential units at the upper levels. The proposal comprises the following elements.
- the demolition of the early 20th century 156 Gray's Inn Road, a tram master's house of 1906–07 in the south-western corner of the site. A multi-storey building would be constructed in its place, extending to the north over the retained early 20th century buildings at 160–164 Gray's Inn Road in the western third of the site;
 - the partial demolition of the early 20th century Panther House (locally listed) and Brain Yard building at ground floor level to provide a new through east-west pedestrian access route between Gray's Inn Road and Mount Pleasant;
 - Panther House would be partly demolished and reconfigured at ground level in the north-eastern corner of the site, and infill buildings constructed in the currently open yard between the three Panther House blocks;
 - Various multi-storey buildings would be constructed over the retained existing buildings. These would extend over the northern half of the currently open Brain Yard.
- 1.1.5 The single level basement in Panther House would be retained but with new pile caps installed. Across the footprint of 156-164 Gray's Inn Road, Brains Yard and the Tram shed area a new basement would be constructed with a formation level of c 15.2m OD. This would involve reducing the ground within the footprint of 154-164 Gray's Inn Road and Brain's Yard by c 4.8m bgl (below ground level), and extending the existing basement under the Tramshed by c 2.5m bgl. The extent of

the new basement in relation to the existing and the archaeological deposits recorded during the evaluation is shown on Fig 3.

- 1.1.6 The potential archaeological interest on the site is concerned with the remains of the 17th/16th century alms houses that previously existed on the site, underlain by a thick deposit of nightsoil/garden deposits overlying post-medieval quarry pits subsequently utilised for the dumping of domestic refuse.
- 1.1.7 An archaeological excavation as defined by the Chartered Institute for Archaeologists is 'a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design' (CIFA, 2014).¹
- 1.1.8 The development received planning permission on 1st November 2017 (planning reference 015/6955/P) and included Condition No 26 which states;
No demolition or development shall take place until a stage 1 written scheme of investigation (WSI) has been submitted to and approved by the Local Planning Authority in writing. For land that is included within the WSI, no demolition or development shall take place other than in accordance with the agreed WSI, and the programme and methodology of site evaluation and the nomination of a competent person(s) or organisation to undertake the agreed works.

If heritage assets of archaeological interest are identified by stage 1 then for those parts of the site which have archaeological interest a stage 2 WSI shall be submitted to and approved by the local planning authority in writing. For land that is included within the stage 2 WSI, no demolition/development shall take place other than in accordance with the agreed stage 2 WSI which shall include:

- A. The statement of significance and research objectives, the programme and methodology of site investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works.*
- B. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged until these elements have been fulfilled in accordance with the programme set out in the stage 2 WSI.*

¹ Attention may also be drawn to paragraph 1 (under 'The Role of Archaeologists') of the *Code of Good Practice On Archaeological Heritage in Urban Development Policies* established by the Cultural Heritage Committee of the Council of Europe which points out that archaeology can 'add value' to a development, influencing overall concept and/or architectural design:archaeological work will thereby contribute to the urban landscape of the future (CHCE, 2000).

The written scheme of investigation will need to be prepared and implemented by a suitably professionally accredited heritage practice in accordance with Historic England's Guidelines for Archaeological Projects in Greater London.

Reason: Built heritage assets on this site will be affected by the development. The planning authority wishes to secure building recording in line with NPPF, and publication of results, in accordance with Section 12 of the NPPF and in order to ensure the identification of and minimise damage to important archaeological remains which may exist on this site, in accordance with the requirements of policy D2 of the Camden Local Plan 2017.

- 1.1.9 Details of the consented development are available at the following website;
<https://planningrecords.camden.gov.uk/Northgate/PlanningExplorer/Generic/StdDetails.aspx?PT=Planning Applications On-Line&TYPE=PL/PlanningPK.xml&PARAM0=424197&XSLT=/Northgate/PlanningExplorer/SiteFiles/Skins/camden/xslt/PL/PLDetails.xslt&FT=Planning Application Details&PUBLIC=Y&XMLSIDE=/Northgate/PlanningExplorer/SiteFiles/Skins/camden/Menu/PL.xml&DAURI=PLANNING>
- 1.1.10 This document has been produced to address the Stage 2 WSI part of the condition (Parts A & B). It should be noted that at the time of writing the client is applying for a Section 73. However, the change to the proposals does not change the impact on the archaeological deposits from the consented scheme.
- 1.1.11 Following the results of the evaluation and in consultation with Historic England (email correspondence with Laura O’Gorman – dated 12th March 2021) it has been agreed that the mitigation strategy should focus on the unbasemented parts of the site located within the footprint of 154-164 Gray’s Inn Road and Brains Yard. The works will consist of the following elements.
- Excavation and recording of the walls, structural features, and internal features (floor surfaces/hearths) associated with the former alms houses
 - Sample excavation of the post-medieval garden/night soil deposits and quarry pits undertaken as two trench excavations
 - Watching brief across the remainder of the area during ground reduction works and enabling works
- 1.1.12 Further details on the methodology are stated in Section 3.
- 1.1.13 The results of the excavation will be set out in a preliminary report (i.e. *Post-excavation Assessment*) to be issued within 6 months of completing the fieldwork.
- 1.1.14 This document sets out the methodologies (including Health & Safety) which will be followed during the excavation and during the post-excavation analysis and reporting stages. These will follow the Standards and Code of Practice laid down by the Chartered Institute for Archaeologists, local and regional planning authority archaeology guidance and Historic England Centre for Archaeology Guidelines where appropriate.
- 1.1.15 Other relevant documents include:
- the Archaeological desk-based assessment (MOLA, 2019). This presented the initial assessment of archaeological potential on the site.
 - Report on an archaeological evaluation (MOLA, 2021)

1.2 Planning and legislative framework

- 1.2.1 The Planning and legislative background to the site has been adequately summarised in the previous Archaeological desk-based assessment (MOLA, 2019, section 9). The reader is referred to this document for further details.

1.3 Archaeological background

- 1.3.1 The *Archaeological desk-based assessment* (MOLA 2019), and the *Archaeological evaluation report* (MOLA 2021) set out the results of desk-top assessment and archaeological field evaluation which have been carried out on the site to date.
- 1.3.2 The reports should be read for the results of these investigations, although they can be quickly summarised as follows:
- 1.3.3 The evaluation demonstrated that the potential for the survival of post medieval archaeological remains in the form of structural remains, garden soils and quarry/refuse pits is high within the footprint of the Gray's Inn Road properties. Across the remainder of the site the remains are limited to the base of cut features, interpreted as quarry/refuse pits, cutting into the natural terrace deposits.
- 1.3.4 At the time of writing the remains of the alms house are considered to be of moderate significance. Very little is known on the form and layout of these alms houses from historical information. The survival of internal features potentially provides the opportunity to investigate the form of construction, layout and function of the structures, adding information to the understanding of day-to-day life in the alms house of 16th-18th century London.
- 1.3.5 At this stage the garden/night soil deposits are considered to be of low significance. These deposits probably accumulated over a considerable period of time and by their very nature are likely to have been subjected to post-depositional processes disturbing and mixing any discrete horizons that may have been present. Therefore, they are likely to hold low stratigraphic and chronological integrity. Although these deposits contained finds related to domestic life in post-medieval London the possible mixed provenance of the find's assemblage may negate the ability to reach meaningful conclusions on the material.
- 1.3.6 The post-medieval quarry/refuse pit features are also considered to be of low significance. Although they appear in some cases to represent discrete features, and therefore hold reasonably good stratigraphic integrity, they may still represent multiple episodes of quarrying disturbing and mixing older deposits. As with the garden/ night soil deposits any finds recovered from them may be of a multitude of dates and therefore of relatively low value.

1.4 Quantification of the archaeological resource

- 1.4.1 The evaluation demonstrated that just below the existing slab (c 200mm) structural remains of the 17th/18th century alms houses survive. These occurred as thick brick walls (c 500mm in thickness) extending to a depth of c 2m bgl. In association with these wall a series of possible floor layers and a hearth were encountered. These extend to a depth of c 500mm below existing ground level, measuring c 200-300mm in thickness. Given the level of survival in the two evaluation test pits it is predicted that these remains will survive across the entirety of the unbasemented parts of the site (i.e. the properties fronting onto Gray's In Road).
- 1.4.2 The remains of the alms houses were found to cut through a thick series of

homogenous partially humic soils which extended to a depth of c 2m bgl. These were interpreted as possible garden soils with an influx of night soils gradually raising the ground level. These deposits are thought to predate the alms houses dating to the 16th/17th century, although in places they may be contemporary. The garden soils sealed a thin gravelly layer (c 0.3m thick) which is thought to represent an attempt to consolidate the ground. These deposits sealed a series of intercutting pits thought to represent quarrying activity in the 16th/17th century. The fills of these features contained domestic refuse in the form of animal bone and pottery sherds suggesting a secondary use as refuse pits. These pits are thought to extend to a depth of c 1.5m. The full sequence of the deposits in relation to the existing buildings and OD heights is illustrated on Fig 4.

1.5 MOLA team and other responsibilities

In the document below the following terms should be understood:

- 1.5.1 *MOLA (Museum of London Archaeology)* is a company limited by guarantee registered in England and Wales with company registration number 07751831 and charity registration number 1143574. Registered office: Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED.
- 1.5.2 *Project Manager* - MOLA office based manager who is the client's principal point of contact and who has overall responsibility for the project budget and delivery.
- 1.5.3 *Site Supervisor* - MOLA site based manager who is responsible for the direction of the field team. Site supervisors on larger sites will tend to be Project Officers in grade, whilst on other sites they will be Senior Archaeologists. On some sites there may be both a Project Officer and/or one or more Senior Archaeologists.
- 1.5.4 *Archaeologists* - MOLA excavation staff responsible on site for archaeological excavation.
- 1.5.5 *Field Services Operations Manager* - MOLA office based manager responsible for allocation of staff and supply of equipment and resources.
- 1.5.6 *Health and Safety Compliance Manager* – The MOLA manager with sole responsibility for site inspections, reporting and issuing of recommendations for the Site Supervisor and Project Manager to implement. Reports directly to MOLA CEO
- 1.5.7 *Principal Contractor* - appointed directly by the Client with overall responsibility for site H&S under CDM regulations.
- 1.5.8 *Attendance Contractor* - the contractor responsible for providing such attendances to MOLA as are deemed necessary to carry out their archaeological work (see section 6.3). These might for instance include but not be restricted to shoring, lighting, facilities, fencing, additional labour, spoil removal, etc The Attendance Contractor may be the same as the Principal Contractor, or it may be subcontracted to the Principal Contractor or it may sub-contracted to MOLA.
- 1.5.9 *Sub-contractor* – where this term is used in this document it refers to any contractor employed directly by MOLA during the course of its work on the site.

2 Objectives of the excavation

2.1 Site specific objectives and research aims

2.1.1 The excavation and research is undertaken in the context of the wider archaeological research priorities for London. These are set out in the Museum of London's 'A research framework for Greater London' (MOL, 2002).

2.1.2 The following research objectives have been compiled after consultation with appropriate experts, and in particular on consideration of the results of previous archaeological investigations both on the site and on other sites in the area.

- *What information can be gained on the form, layout and the structure of the alms houses and how does this compare to that known from other alms houses dating to the 17th/18th century?*
- *What information can be gained from the internal features of the alms houses and any associated refuse pits on day to day life and domestic activities of the alms houses residents?*
- *What information can the nightsoil/garden soil deposits provide on the development of urban London and the hinterlands of the city limits?*
- *Do the nightsoil/garden deposits and underlying refuse/quarry pits preserve well dated palaeoenvironmental and finds assemblages which can be used to elucidate on the domestic activities, subsistence strategies, and the trade and commerce of 16th-18th century London?*
- *What information does the site provide as to the development of the streets and properties of 16th-18th century London?*

2.2 Variation to site specific research priorities

2.2.1 Any changes to the Research Priorities above will be further to the process set out in paras 11.1.23 to 11.1.29.

3 Site specific methodology

3.1 Background

- 3.1.1 A unique site code (GIP21) been agreed with the Museum of London Archaeological Archive (LAA).
- 3.1.2 Unless otherwise stated below, the generic terms in Appendix 3: generic 'controlled excavation' procedures are applicable, and details the archaeological methodology that will be carried out on site.

3.2 Excavation ('digging')

- 3.2.1 The general excavation methodology will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.
- 3.2.2 The archaeological works will proceed to completion prior to the main enabling works or other ground works. However, ten number piles will be installed to support the existing façade. These are likely to occur before or concurrently with the archaeological works. These works will be monitored under a watching brief. The location of the piles is shown in Fig 2. The site-specific approach to excavation and the sequencing of the works is described below. The works will be undertaken in three stages as follows;

Stage 1

- 3.2.3 Stage 1 will consist of a controlled archaeological excavation across the entirety of the properties fronting Gray's Inn Road and Brain yards to a depth of c 500m below existing ground level. This will be undertaken to excavate and record the remains of the alms houses and any surviving internal features. This stage will be undertaken in three phases to facilitate site access and spoil management. The Phases are shown in Fig 2.
- 3.2.4 The breaking out of the slab and removal of any modern overburden will be undertaken by the principal contractor and monitored by a MOLA supervisor. Removal of soft deposits will be undertaken by a toothless ditching bucket. The depth to the top of the archaeological remains is expected to be c 100-200mm. When the top of the archaeological horizon is reached hand cleaning and excavation of the archaeological features will commence by the MOLA team.
- 3.2.5 The wall of the alms houses will be cleaned by hand to facilitate recording and for obtaining a photographic record. Internal features, such as floor surfaces and hearths will be 100% excavated.

Stage 2

- 3.2.6 Following the hand excavation, recording and mapping of the alms house remains the deeper nightsoil/garden deposits and the underlying quarry pits will be investigated by two stepped trench excavations (trench 1 & 2). The location of these trenches is illustrated on Fig 2.
- 3.2.7 Trench 1 will be orientated roughly north to south measuring 22m x 6m at the top of the dig and 2m x 18m at the base. The trench will be stepped to reach a maximum

- depth of c 3m bgl.
- 3.2.8 Trench 2 will be aligned roughly east to west measuring 6x14m at the top of the dig 2x12m at the base. The trench will be stepped to reach a maximum depth of c 3m bgl.
- 3.2.9 If possible the trenches will be undertaken concurrently. However it may be necessary to undertake the trenches in sections, backfilling areas as required to facilitate spoil management. The sequence of the trench works will be agreed with the principal contractor.
- 3.2.10 Due to the homogenous nature of the garden/night soils, these will first be investigated by hand excavating slots covering c 20% of the trench area. The slots will be continued down through the whole depth of the trench to the base of the night soil deposits. The location of these slots will be recorded by the MOLA supervisor on site. The remainder of the night/garden soil will be removed in machine excavated spits (c 100-300mm) under the control and discretion of the MOLA supervisor.
- 3.2.11 Sections will also be drawn through the deposits to distinguish any layers or cuts that may not be visible in plan. If appropriate monolith tins, and kubiena tins with associated bulks samples (taken at 10cm intervals down through the deposits of interest) will be taken through the deposit for understanding soil formation process and for recording palaeoenvironmental remains.
- 3.2.12 The surface of the underlying quarry/refuse pits will be cleaned by hand to define the edges of cut features. For each defined quarry/refuse pit 50% of the fill will be excavated. Bulk samples will be taken for the recovery of palaeoenvironmental remains/domestic waste as appropriate.

Stage 3

- 3.2.13 Stage 3 will involve an archaeological watching brief on the contractors ground reduction works and any other enabling works required to support the ground reduction. The watching brief will focus on recording the full extent (in depth) of the wall foundations associated with the alms houses and any other structural features that may be encountered.
- 3.2.14 No further recording should be needed of the garden/night soil or quarry/refuse pits as these will be characterised by the trench sample excavation. If features are encountered that are not associated with the garden/night soil deposits or quarry pits, for example barrow wells, these will be hand excavated as appropriate.

Excavation percentages

- 3.2.15 In general the percentage excavation per feature (unless stated otherwise above) will be as follows.

Feature Type	Minimum percentage of each example
Stake-hole	100%
Post-hole or pit (less than 1.5m)	50%
Pit (greater than 1.5m)	25%
Linear feature (less than 5m)	20%; all termini and intersections will be

	excavated
Linear feature (greater than 5m)	10%; all termini and intersections will be excavated
Deposits relating to funerary activity – unlikely to be encountered (e.g. burials, cremation deposits)	100% (subject to agreement with curator)
Deposits relating to domestic/industrial activity (postholes, hearths, floor surfaces/floor makeup deposits)	100%
Agricultural pits and features	50%
Agricultural linear features (e.g. ditches/gullies, paths/tracks)	20% for prehistoric features 10% for Roman and later features. All termini and intersections will be excavated

- 3.2.16 Where features are half- or quarter-sectioned as above MOLA will normally draw a sketch section on the context sheet. Where appropriate, (normally for larger features or significant ones) scaled 1:10 or 1:20 sections will be drawn.

3.3 Engagement with Historic England

- 3.3.1 The works will be monitored by Historic England's archaeological advisor to the local authority. Due to the covid situation the monitoring visits are likely to be undertaken remotely with information communicated via phone calls, onsite video calls with photographic updates. Site visits will be made in person if circumstances allow.

3.4 Site survey (Geomatics)

- 3.4.1 Survey methodology will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.5 Written records

- 3.5.1 Creation of written records will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.6 Drawn records

- 3.6.1 Creation of drawn records will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.6.2

3.7 Photographic records

- 3.7.1 Use of photography will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.8 Use of archaeogeophysics

- 3.8.1 Use of Archaeogeophysics will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.9 Use of computers

- 3.9.1 Use of computers will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.10 Documentary research

- 3.10.1 Documentary research will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

3.11 Artefacts and ecofacts from site

- 3.11.1 Sampling and retention of artefacts and ecofacts from the site will be as set out in Section 11, Appendix 3: generic 'controlled excavation' procedures.

4 Finds, archive and storage

4.1 Ownership of finds

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

4.2 Interim storage and processing facilities

- 4.2.1 Prior to final Deposition of the Archive, the storage and processing facilities available to MOLA are as follows:
- 4.2.2 Both long- and short-term storage of excavated finds and samples at the MOLA's premises at 46 Eagle Wharf Road, London, N1. These premises meet the *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission, 1992).
- 4.2.3 Paper and digital records are initially stored in appropriate environmental conditions at MOLA's offices at Mortimer Wheeler House. The building has 24-hour security.
- 4.2.4 Cold and wet storage as appropriate for organic finds and samples. MOLA uses several freezers and refrigerators for cold storage. Wet storage is provided by versatile, water-filled scaffold tanks, which are well-sealed to prevent contamination.
- 4.2.5 Both dry and wet processing facilities are available at the MOLA buildings at Eagle Wharf Road. Wet processing equipment includes power spraying units, sieving apparatus and flotation tanks.

4.3 The project archive

- 4.3.1 The Project Archive will include all materials retained (or the comprehensive record of such materials as referred to above) and all written, drawn and photographic records relating directly to the investigations undertaken. It will be quantified, ordered, indexed and internally consistent before permanent transfer to the Museum of London.
- 4.3.2 Finds and records will be curated and be made available for public consultation in a site archive compatible with other archaeological archives in the Museum of London and adhering to standards set out in the following:

- Archaeological Archive Forum, Archaeological Archives: a guide to best practice in creation, compilation transfer and curation (2011)
- Museum of London, General Standards for the preparation of archaeological archives deposited with the Museum of London, (2009),
- Museums and Galleries Commission's Standards in the Museum Care of Archaeological Collections (1992),
- Society of Museum Archaeologists' draft Selection, Retention and Dispersal of Archaeological Collections (1992).
- Society of Museum Archaeologists (1995) Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales.
- United Kingdom Institute for Conservation Guidelines for the preparation of excavation archives for long term storage (1990)

4.3.3 Copyright of the written archive will be vested in the Museum.

4.3.4 The archive will be presented to the archive officer or relevant curator of the Museum of London following the completion of any publication work (unless alternative arrangements have been agreed in writing with the Local Planning Authority).

5 Post-excavation reporting and dissemination

- 5.1.1 Following the completion of field work, the initial post-excavation assessment of the site records and finds will lead to a *Post-excavation assessment report and Updated Project Design* in accordance with 'Appendix 4: assessment report specification'. in the *Management of Archaeological Projects* (MAP2).
- 5.1.2 In addition to this technical report, which MOLA is obliged to prepare, an additional interim report giving an overall view of the project and its results in non-technical language may be prepared and issued to the client and other relevant parties on or before completion of the post-excavation assessment.

5.2 Publication/dissemination

- 5.2.1 In all cases a short summary of the results of the work will be submitted to the Greater London HER and NAR (using the appropriate OASIS archaeological report form), and for publication in the 'Excavation Round-up' of the *London Archaeologist* and other period-based archaeological journals as appropriate.
- 5.2.2 GIS data will also be made available to the GLHER.
- 5.2.3 Where potential for further archaeological work is identified and detailed proposals for this set out in the *Post-excavation assessment and Updated project design*, further analysis and research may also be required, leading ultimately to publication in either a dedicated site-based monograph report (produced by MOLA), or in one of the relevant national or period-based archaeological journals or regional journal within five years (or as near as possible subject to availability of space in appropriate journal) of the completion of fieldwork on site.
- 5.2.4 The client has been made aware that completion of any such further analysis, publication and archive work recommended in the post-excavation assessment report is a necessary part of the fulfilment of the planning condition and that additional, as yet undefined, resources will need to be made available to achieve this.

6 Programme and staffing

6.1 Field programme

- 6.1.1 The start date for the archaeological works has yet to be confirmed. The works are anticipated to start during the third quarter of 2021. The timetable for the works will be dependent on the logistical operations required to support the works (i.e. spoil management and access arrangements). However, a provisional timetable and resource schedule for the works is as follows.
- (Stage 1) Phase 1: 2 weeks – 1 supervisor and 7 staff
 - (Stage 1) Phase 2: 1 week – 1 supervisor and 5 staff
 - (Stage 1) Phase 3: 1 week – 1 supervisor and 5 staff
 - (Stage 2) Trench 1 & 2: 3 weeks – 1 supervisor and 4 staff
 - (Stage 3) Watching brief on ground reduction and enabling works: Duration dependant on contractors work programme. Anticipated to require 1 supervisor to monitor the works, with additional staff called in as required
- 6.1.2 Time required for any engineering or enabling works before access to the areas is available will not be taken out of the archaeological excavation period.
- 6.1.3 The time needed for watching briefs on the piling, temporary or enabling works as specified will be dependent on the programme of the Principal Contractors. The archaeological monitoring will be undertaken by a Site Supervisor with assistance from a second member of staff if required, and will last for the duration of such works. Attendance for such watching briefs will sometimes be intermittent at the discretion of the Site Supervisor.
- 6.1.4 If unforeseen engineering or health and safety problems should arise, or if extensive, significant deposits are found to survive in the area which cannot be satisfactorily excavated and recorded in this period, then there should be sufficient flexibility within the programme and resources to enable the deposits in question to be excavated and recorded to the satisfaction of the Local Planning Authority's designated representative/advisor. The exact details of time, areas and numbers of staff involved would be agreed in discussions between representatives of the developer and/or their agents, MOLA and the Local Planning Authority's designated representative/advisor.

6.2 Post-excavation programming

- 6.2.1 The time required to complete the *Post-excavation Assessment Report*, including an Updated Project Design will depend on the volume of records generated during the excavation.
- 6.2.2 The report will be completed and submitted to the local planning authority's archaeological adviser/officer for consideration and agreement within 6 months of the completion of fieldwork unless otherwise agreed in writing by the planning authority.
- 6.2.3 The results of any evaluation will be combined in the post-excavation assessment programme.
- 6.2.4 The *Updated Project Design* will include an agreed timetable for completing a program of analysis, publication and archiving which will then be implemented to

fully satisfy the planning condition.

6.3 Attendance requirements

- 6.3.1 This section provides a summary of likely attendance requirements to be provided for MOLA by the site Attendance Contractor during the archaeological excavations.
- 6.3.2 If necessary, these will be revised in light of on-going discussions on excavation methodology. The section is based on standard MOLA procedures, adapted to meet the particular requirements of the project.
- 6.3.3 Erith, appointed by the client, will be acting as the 'Attendance Contractor'.
- 6.3.4 As part of the **site preparation** works, the slab and overburden will be cleared in sections and modern intrusions/foundations removed where appropriate. The slab removal will be undertaken by the client's Attendance Contractors using machines under the supervision of the Site Supervisor. The contractors will comply with all reasonable requests by the Site Supervisor, who will be authorised to decide which modern features are removed or left *in situ* to reveal or protect archaeological features.
- 6.3.5 After the completion of site preparation works there will be a '**hand-over meeting**' to ensure that the on-site conditions are acceptable to the MOLA Project Manager and MOLA Health and Safety Officer.
- 6.3.6 **Safe access** routes will be installed prior to the excavation, and to be maintained throughout the period of the excavation by the Attendance Contractor. Handrails and ladders will be provided as required. Standard Youngmans or duckboards will be required to construct walkways which can be altered as the excavation progresses. Safety guard-rails and suitable access points into the site and areas of excavation, away from any site traffic and machinery.
- 6.3.7 **Shoring** in all excavations which exceed 1.20m in depth, and in those of less than 1.20m which are judged unstable, installed in accordance with Safety Regulations and maintained throughout the occupancy of the area in question. Note that where mechanical or electric hoists are to be used, MOLA Health and Safety policy requires staff working in shored shafts of less than 4m x 4m to leave the shaft before hoisting of buckets takes place and not to re-enter until the bucket is lowered back into position. Time for such evacuation will not form part of excavation programme. Beyond a depth of 3m within such shafts gas monitoring equipment will be required to ensure appropriate air quality for those working there.
- 6.3.8 **Lighting:** halogen lamps (or equivalent 'daylight' lighting) may also be required to enable work to continue to the end of the normal working day. If necessary, up to 4 tungsten halogen lamps (500W minimum) with 110-volt transformer, adequate cabling, and power supply.
- 6.3.9 In addition to welfare facilities MOLA will need limited '**office**' space. MOLA's job on site includes the physical excavation of spoil and the creation of written and drawn records. This requires intermittent use of indoor space with desks and chairs (and electricity, lighting and heating). For archaeological teams comprising five or more, the standard ratio is 4:1; that is for every 4 field staff, including supervisors, one needs to be inside creating or checking records. Two archaeologists can share one standard desk but it is not appropriate for the work space to be shared with canteens or other contractors.
- 6.3.10 Attendance labour will be required to carry out the removal of **spoil** off site (as a guide, a ratio of c 1 labourer to 3 archaeologists has been found workable in the past). Appropriate machinery (hoists, dumpers, skips, buckets, diggers, conveyer

- belts etc) may also be required from the Attendance Contractor. The process of removal of spoil from site must not slow down archaeological progress.
- 6.3.11 If ground-water is encountered in the trenches, adequate **pumps** with generating equipment if needed will be required to remove it in order to complete the excavations.
- 6.3.12 A suitable **security** system to operate overnight, weekends and holidays. Normally this means adequate hoarding/Harris fencing and locks.
- 6.3.13 Effective channels of **communication**, including a designated supervising engineer and/or client's project manager to liaise with the Site Supervisor and Project Manager from MOLA. A designated agent will be necessary to implement agreed attendances.
- 6.3.14 Where archaeological remains are to be preserved *in situ* adequate **protection** will be supplied by the Attendance Contractor. This might involve for instance protective boxing; or wrapping deposits or features in a geo-textile such as Terram; or sealing with sand or other suitable soft materials; or other means as deemed suitable/appropriate at the time by the local authority.
- 6.3.15 **Plant** operators and the following plant:
- A mechanical tracked excavator with a breaker, toothed bucket and a large toothless ditching bucket for site clearance.
 - A small machine (eg a Kubota) to assist the initial clearing work, particularly for use in restricted conditions (eg emptying out small intrusions);
 - Kangos or hammers with compressors to remove small obstructions during the course of the excavation.

7 Funding

- 7.1.1 Funding arrangements for the excavation will be agreed between MOLA and the developers/client, together with agreements for attendance requirements, accommodation and facilities required. It has been agreed that the developer will fund the on-site works up to the *Post-Excavation assessment* stage as defined by MAP2 and as described in this document. Additional costs for the later analysis/publication programme will be confirmed following the completion of the *Post-excavation assessment report and Updated project design*, and the client is aware of this eventuality.

8 Bibliography

- Archaeological Archive Forum, 2011 *Archaeological Archives: a guide to best practice in creation, compilation transfer and curation*
- BADLG, 1991 *Code of Practice*, British Archaeologists and Developers Liaison Group
- Chartered Institute for Archaeologists, (CIFA), 2014a *By-Laws, Standards and Policy Statements of the Chartered Institute for Archaeologists, Standard and guidance: Excavation*
- Chartered Institute for Archaeologists, (CIFA), 2014b *By-Laws, Standards and Policy Statements of the Chartered Institute for Archaeologists, Standard and guidance: the creation, compilation deposition and transfer of archaeological archives*
- DCLG [Department of Communities and Local Government], March 2012 *National Planning Policy Framework*.
- English Heritage, 1991 *Exploring our Past. Strategies for the Archaeology of England*
- English Heritage, 1991 *Management of Archaeological Projects (MAP2)*
- English Heritage, 1997 *Sustaining the historic environment: new perspectives on the future*
- English Heritage, May 1998 *Capital Archaeology. Strategies for sustaining the historic legacy of a world city*
- English Heritage 2008 *SHAPE 2008: A Strategic framework for Historic environment Activities and Programmes in English Heritage. Guidance for external grant applicants*. Swindon English Heritage.
- English Heritage Ancient Monuments Laboratory, Conservation and Technology, 1998 *Guidelines on producing and interpreting dendrochronological dates*
- English Heritage Centre for Archaeology Guidelines, Feb. 2001 No. 1: *Archaeometallurgy*
- English Heritage Centre for Archaeology Guidelines, 2011 *Environmental archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (second edition)
- English Heritage Centre for Archaeology Guidelines, 2004
- Historic England, Greater London Archaeology Advisory Service, 2015 *Guidelines for Archaeological Projects in Greater London*
- MOLA, 2019, Historic Environment Report for 156-164 Gray's Inn Road, MOLA unpub report
- MOLA, 2020, Written Scheme of Investigation for an archaeological evaluation, MOLA unpub report
- MOLA, 2021, An evaluation report for 156-164 Gray's Inn Road & Panther House (Sitecode GIP21), MOLA unpub report
- Museum of London, 2002 *A research framework for London archaeology 2002*
- Museum of London, 2009 *General Standards for the preparation of archaeological archives deposited with the Museum of London*
- Museums and Galleries Commission (1992) *Standards in the Museum Care of Archaeological Collections*.
- Pevsner, N, 1977 *The Building of England: The City of London*; or appropriate xx
- Schofield J with Maloney C (eds), 1998 *Archaeology in the City of London, 1907–91: a guide to records of excavations by the Museum of London and its predecessors*, MoL Archaeol Gazetteer Ser 1, London
- Society of Museum Archaeologists (1993) *Selection, Retention and Dispersal of Archaeological Collections. Guidelines for use in England, Wales and Northern Ireland*.
- Society of Museum Archaeologists (1995) *Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales*.
- Standing Conference of Archaeological Unit Managers, (1991 rev. 1997) *Health and Safety in Field Archaeology, Manual*

Treasure Act 1996 Code of Practice (2nd Revision) 1996, DCMS

Treasure (Designation) Order 2002, TSO

Thompson, A, Westman A, and Dyson, T (eds), 1998 *Archaeology in Greater London 1965-90: a guide to records of excavations by the Museum of London*, Archaeol Gazetteer Ser Vol 2, London

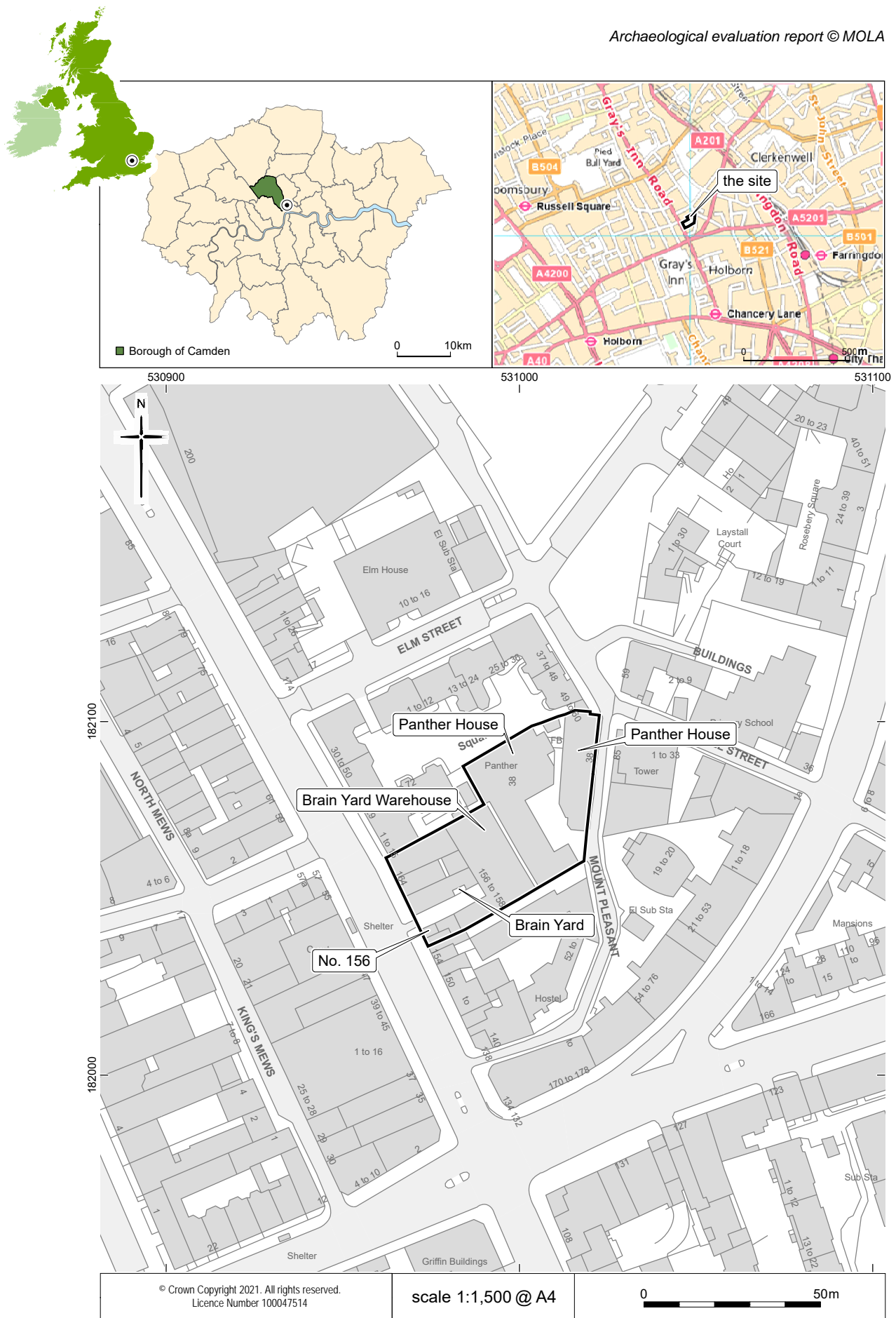


Fig 1 Site location



Fig 2 Location of phased excavation areas, trenches and pile locations

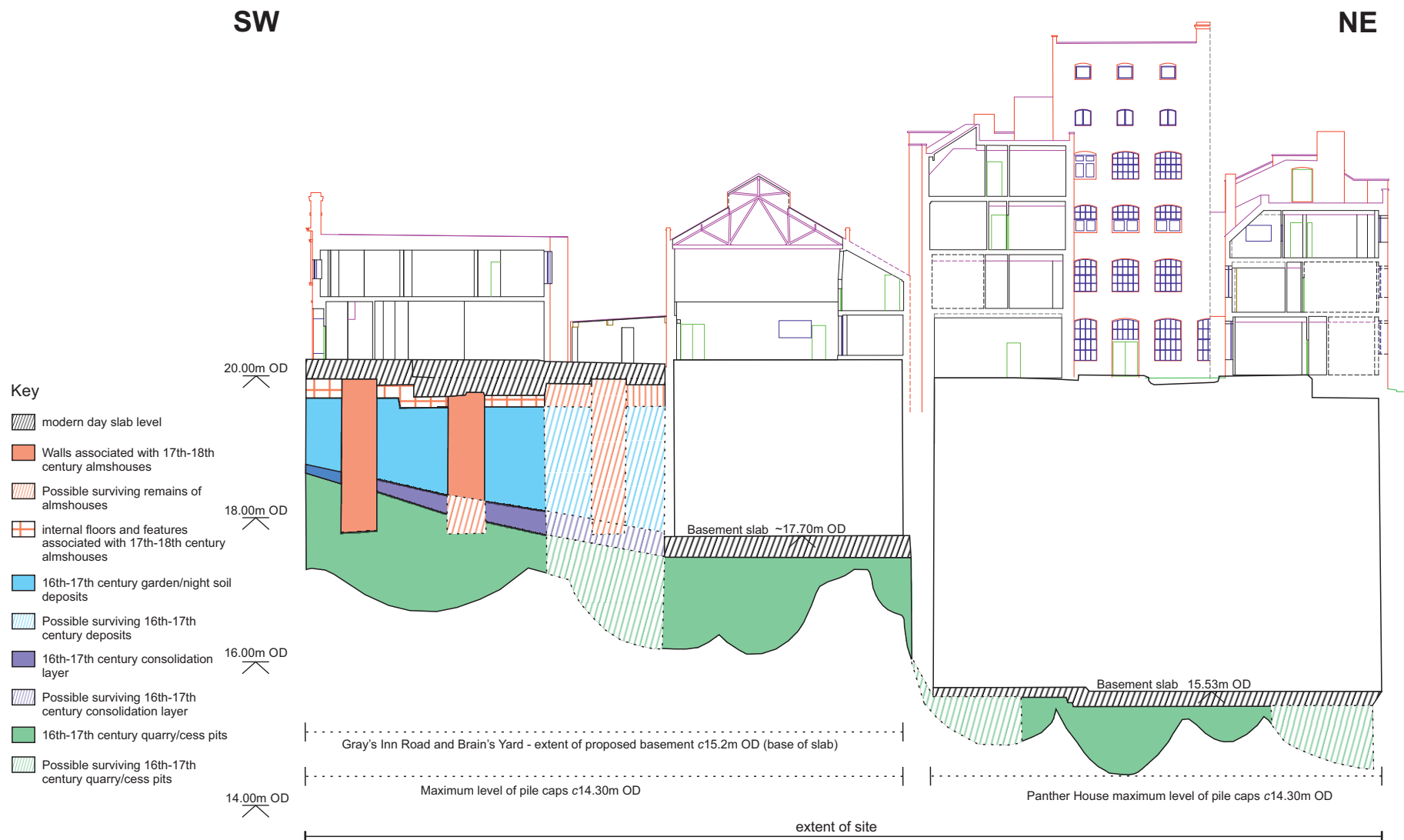


Fig 3: Schematic section across the site

9 Appendix 1: Draft Transfer of finds ownership form

DATED

20

[]

-AND-

THE BOARD OF GOVERNORS OF
THE MUSEUM OF LONDON

DEED OF TRANSFER
of Finds excavated at
[]

Site Code []

THIS DEED OF TRANSFER is made on the day of 20

BETWEEN: -

[] a company registered in England under Reg. No [] whose registered office is situate at [] ("the Site Owner");

AND

THE BOARD OF GOVERNORS OF THE MUSEUM OF LONDON an exempt charity established under the Museum of London Acts 1965-1986, whose principal place of business is located at 150 London Wall, London EC2Y 5HN, ("the Museum") which expression shall include any Governors appointed from time to time acting in accordance with the powers vested in them under the Museum of London Acts 1965-1986.

WHEREAS

- A. The Site Owner is the owner of a property at [] known by its site code [] whereupon an archaeological intervention has been carried out ("Excavation").
- B. The Site Owner is the owner of any items of archaeological interest found during the Excavation.
- ~~C.~~ The Site Owner wishes to transfer to the Museum title to the items referred to in Recital B.
- D. The Museum has agreed to provide facilities for the accommodation and, at its discretion, the display of the items referred to in Recital B on condition that the same are assembled as an archive in accordance with the provisions of this Deed.

NOW IT IS HEREBY AGREED as follows: -

1. PREPARATION AND DELIVERY OF THE ARCHIVE

1.1 The Site Owner will procure the preparation of the items of archaeological interest found during the Excavation in accordance with the requirements of the Museum's *General Standards for the Preparation of Archaeological Archives deposited with the Museum of London*, a copy of which is available to the Site Owner for inspection, and generally in accordance with best archaeological practice. The Site Owner will also procure to be prepared a full inventory of the items so prepared ("the Finds Inventory") and a list of the boxes and other containers in which those items will be transported to the Museum ("the Final Transfer Summary"). The items of archaeological interest listed in the Finds Inventory are hereinafter referred to as "the Finds".

1.2 The Site Owner will arrange for delivery of the Finds, Finds Inventory and the Final Transfer Summary to the Museum without cost to the Museum, after consultation with the Museum as to the method and time of delivery.

1.3 Title to and risk in the Finds will pass to the Museum on delivery of the Finds to the Museum in accordance with clause 1.2.

2. WARRANTIES

2.1 The Site Owner warrants to the Museum that:

2.1.1 [to the best of its knowledge and belief ***delete as appropriate***] at the date of this Deed ownership of the Finds is vested exclusively in the Site Owner;

2.1.2 [to the best of its knowledge and belief ***delete as appropriate***] at the date of this Deed the Finds are free of all charges, encumbrances and third party rights and no right has been granted in respect of them which would affect the transfer of title to the Finds by the Site Owner to the Museum or otherwise give rise to any conflict with the provisions of this Deed;

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

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

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

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

3. INTERPRETATION; GOVERNING LAW AND JURISDICTION

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

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

[]

By means of these signatures:

Director

Director/Secretary

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

Chairman

Secretary

10 Appendix 2: Management, delivery and quality control

- 10.1.1 MOLA (Museum of London Archaeology) is a company limited by guarantee registered in England and Wales with company registration number 07751831 and charity registration number 1143574. The Registered Office is Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED). It has its own independent Board of Trustees but works in partnership with the Museum of London via a Memorandum of Understanding.
- 10.1.2 MOLA is a 'Registered Organisation' with the archaeological professional body, the Chartered Institute for Archaeologists (CIfA). The *CIfA Register* is a rigorous Quality Assurance scheme for archaeologists. In order to be accepted, MOLA has passed a Board resolution to comply with the CIfA Code of Conduct and Standards, to demonstrate that compliance through bi-annual re-registration, to submit to regular CIfA inspections, and to ensure that all MOLA activities are under the overall direction of a Member grade (MCifA) 'responsible post-holder'. The Registered Organisation scheme also provides procedures for investigating and handling of external complaints.
- 10.1.3 MOLA is currently working with a specialist consultant towards achieving an ISO9001 Quality Management standard (proof can be provided if required).
- 10.1.4 MOLA subscribes to and abides by the general principles and specific terms of the *Code of Good Practice On Archaeological Heritage in Urban Development Policies* established by the Cultural Heritage Committee of the Council of Europe, and adopted at the 15th plenary session in Strasbourg on 8-10 March 2000 (CC-PAT [99] 18 rev 3). In particular to the following points:archaeologists shall be aware of development costs and adhere to agreed timetables (Para 3 'The Role of the Archaeologist'), with all work 'carried out to written statements setting out standards timetables and costs' (para 4 *ibid*).
- 10.1.5 MOLA further subscribes to and ensures that its activities comply with and/or are guided by the following policies, procedures and guidance:
- Appropriate local and regional planning authority archaeology guidance – eg for London: English Heritage Greater London Archaeology Advisory Service, *Standards for Archaeological Work*, 2015.
 - Appropriate national professional standards eg Chartered Institute for Archaeologists *Guidance* papers (eg CIFA 2014a and 2014b)
 - Appropriate Archaeological Research Framework for the region – eg for London: English Heritage Archaeology Division, *Research Agenda* (1997); Museum of London, *A research framework for London archaeology* (2002); and *Historic Environment Research Strategy for Greater London* (in prep. CBA/MoL/Rowsome).
 - English Heritage, Management of Archaeological Projects (MAP2), (1991)
 - English Heritage Centre for Archaeology, *Guidelines* (various)

- National archive disposition standards including Museum and Galleries Commission, *Standards in the Museum Care of Archaeological Collections* (1992) and Society of Museum Archaeologists, *Towards an Accessible Archaeological Archive: the Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales* (1995)
 - Relevant local archive deposition standards, eg for London, Museum of London, General Standards for the preparation of archaeological archives deposited with the Museum of London, (2009).
- 10.1.6 MOLA governance and organisational strategy are determined by the Senior Management Group (SMG), led by the CEO and comprising the Finance Director, Chief Operating Officer, and five other Directors. The SMG reports regularly to an independent Board of Trustees, who oversee MOLA's performance and strategic direction. As a charitable company MOLA is monitored and regulated by the Charities Commission.
- 10.1.7 MOLA is structured to reflect its project orientation. One Director manages the Client Team of Project Managers (PMs). Individual PMs are responsible for developing new work for MOLA, and thereafter for designing, budgeting and delivering projects for clients. They remain the principal point of contact for the client for the duration of each project.
- 10.1.8 PMs drive projects through successive stages in accordance with client needs, forming **project** teams by drawing upon the skills available within MOLA Operations teams. PMs ensure that projects are completed to the highest standards within time and budget. Financial monitoring of projects against budget is undertaken by the Finance Director and PMs at monthly review meetings. Project management software is employed by MOLA Operations to plan resourcing and track and adhere to programme and budget. Project team meetings are held throughout the programme, allowing refinement of research strategies in the light of on- or off-site findings or analysis. Recording, excavation, and sampling strategies may be modified to provide optimum information retrieval in support of the research objectives. At post-excavation phase internal project management is normally devolved to a designated Post-Excavation Project Manager.
- 10.1.9 All archaeological field work is controlled and monitored on a day to day basis by the on-site Site Supervisor (SS), who reports to the designated Project Manager. Together with the Field Services Operations Manager and the H&S Compliance Manager (responsible for H&S) they also liaise as necessary with the client's agents and Principal Contractor regarding all enabling works and H&S.
- 10.1.10 All written documentation, eg initial '*written scheme of investigations*' ('wsis'), evaluation reports, post-excavation *Assessment Reports* and final publications undergo stages of internal review and sign-off prior to final issue to clients. For both field and reporting work PMs and SSs meet and liaise with the client and the Local Authority's archaeological advisor or officer to ensure delivery according to wsis and to review progress, research aims, archaeological procedures, and site strategies as appropriate..
- 10.1.11 At all stages, what constitutes an appropriate archaeological response will

be assessed against criteria of local, regional and national significance and within frameworks of valuable archaeological research topics identified in local or regional Archaeological Research Frameworks (where these exist).

11 Appendix 3: generic 'controlled excavation' procedures

Unless modified in Section 3 above the following apply to all MOLA excavations.

Overall standards

- 11.1.1 **General standards:** excavation strategy will be carried out in accordance with and/or guided by relevant standards and guidance given by the Chartered Institute for Archaeologists (CIFA 2014), Historic England (GLAAS 2015) and other Historic England *Guidelines* where appropriate.

Use of machines

- 11.1.2 **Initial site clearance** will include the emptying of modern backfill of the test trenches from previous phases of investigation work, and other modern backfilled features where these can be identified. This could be carried out by a small machine or narrow trenching bucket under MOLA direction, with final clearing by hand.
- 11.1.3 **Use of machines/hand excavation:** following removal of the slab and/or machine clearance, the areas which require examination or recording will be cleaned using appropriate hand tools. All investigation of archaeological levels will then be carried out by hand unless the use of machines is specifically requested by MOLA to remove certain layers or deposits.

Use of watching brief

- 11.1.4 **'Watching brief' is defined** as a MoLA Site Supervisor in attendance on the client's Principal Contractors' activities and able to make such records as may be possible *without interrupting the progress of the contractors' activities*.. This may typically include taking photographs, making quick sketches or written records, retrieval of finds (subject to below para 11.1.4), and taking levels on observations. The primary purpose of watching briefs will normally be the identification of the limits of features – size, depth, alignment. Bulk finds will not be recovered in the watching brief areas, though finds of specific and unique intrinsic interest may be.

Depth of excavation

- 11.1.5 **Deep modern foundations** may be left *in situ* during the excavation to avoid collateral damage to archaeological deposits and features. Shallow modern foundations which overlie archaeological deposits can be removed, either by machine, or if more appropriate, by hand.
- 11.1.6 **Deep archaeological features** such as pits and wells may require excavation to a greater depth than the general level of reduction required by the client. Agreement will be sought between the client, MOLA, the site engineers and the Local Planning Authority's designated representative/advisor on a case-by-case basis.

Site Handover

- 11.1.7 **Site start up handover:** controlled archaeological excavation will commence once all parties are satisfied that the breaking out is complete and a hand-over meeting has been agreed. Once MOLA has sole access to the prepared area an archaeological team will be mobilised to clean the entire area using appropriate hand tools.

Survey (Geomatics)

- 11.1.8 **General:** The MOLA Geomatics Team carry out site survey using differential GNSS / GPS and optical Total Station systems, as appropriate. Site control is tied into Ordnance Survey National Grid (OSGB36) and Ordnance Datum (OD), or client survey frameworks, as required. Site grids and baselines to be used for traditional site planning are similarly implemented and located using the most appropriate survey method, and are related to the required survey framework. Archeological feature pick-up, and area or trench set-out, is by differential GNSS / GPS, or by optical methods. Laser-scanning survey is similarly tied into the OS framework.
- 11.1.9 **MOLA Surveying Standards:** Standards of precision and accuracy are derived from the accepted standards of accuracy as used by chartered surveyors and defined by the Royal Institution of Chartered Surveyors. The implementation and maintenance of survey standards within MOLA is the responsibility of the Geomatics Manager and the Geomatics team. MOLA Geomatics is responsible for the capture and processing of all survey data, both on and off-site.
- 11.1.10 **Establishment and maintenance of Grids:** Planned archaeological data will be recorded with reference to a horizontal MOLA site grid or to baselines, and a vertical temporary Ordnance Datum point, implemented and maintained by the Geomatics team. The Site Supervisor(s) will be responsible for relating all planned records to these.
- 11.1.11 **Tying in to National Grid:** Sites where significant archaeological remains are uncovered will be tied in to the Ordnance Survey National Grid (OSGB36) by GPS or by establishing or tying-in to existing OS control networks. Tying site grids to features identified on OS mapping will only be used for sites without significant archaeological remains and where no qualitatively preferable survey solution is possible.
- 11.1.12 **Direct data capture:** Archaeological features recorded directly by GNSS/GPS will be automatically located in 3D in Ordnance Survey Grid and Datum coordinates. Trench or area locations set out using GNSS/GPS will similarly, be located in relation to Ordnance Survey coordinates. Laser-scan and digital photogrammetric surveys will be tied into survey control frameworks located in relation to Ordnance Survey Grid and Datum.

Preservation of remains on site

- 11.1.13 **Protection of remains:** where archaeological remains are to be preserved *in situ* they will be adequately protected from deterioration during the excavation. This might involve for instance protective boxing; or wrapping

deposits or features in a geo-textile such as Terram; or sealing with sand or other suitable soft materials; or other means as deemed suitable/appropriate at the time by the local authority

- 11.1.14 **Unforeseen remains:** on the discovery of unforeseen nationally or internationally significant archaeological remains a site meeting will be called immediately with the client, a representative of the LPA, a GLAAS Adviser and the Inspector of Ancient Monuments (if necessary) where a forward strategy for preservation *in situ* or excavation will be discussed, followed by revision/updating of the wsi (if necessary) and negotiations with funding agencies (if necessary) to achieve the agreed revised strategy.

Finds and environmental: retrieval, sampling, retention

- 11.1.15 **Sampling strategies & procedures** used on site will be documented.
- 11.1.16 Artefact and ecofact **data recovery** methods may include hand collection, and both intentional and incidental collection through the application of sampling procedures.
- 11.1.17 Different **sampling strategies** may be employed according to site specific research aims and the perceived importance of the deposits or features under investigation. Where appropriate alternative site specific sampling strategies will be agreed by the Project Manager, Site Supervisor and/or relevant specialist. Sample size will account for the frequency with which material is likely to occur.
- 11.1.18 All **retained finds and samples** will be lifted, cleaned, conserved, marked, bagged and boxed in a proper manner and to standards agreed with the Museum of London.
- 11.1.19 **Finds and Environmental** work will normally be carried out by MOLA specialists. Where external specialists are necessary, eg dendrochronology, relevant method statements will be supplied if requested. All work will be carried out in accordance with relevant CIFA standards (CIFA, 2014), and other established national guidelines.
- 11.1.20 **Human remains:** upon discovery, any finds of human remains will be left *in situ*, covered and protected. If removal is essential it can only take place under or with appropriate Faculty jurisdiction, Department of Justice (Coroner's Division) licence, current environmental health regulations, Coroner's permission, and if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act. It will be necessary to ensure that adequate site security is provided.
- 11.1.21 **Treasure:** all finds of gold and silver, or other objects definable as 'treasure', will be removed to a safe place and reported to the local Coroner according to the procedures of the Treasure Act 1996 and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft
- 11.1.22 There will be **regular liaison** between appropriate MOLA specialists and the Project Manager and/or Site Supervisor during the course of the excavation. On larger, or finds- and environmentally-rich sites, this may take the form of a MOLA specialist working on site as part of the excavation team, or visiting

regularly. The purpose of such liaison to provide the Site Supervisor and Project Manager with information they need to review and, if necessary, revise excavation and/or sampling strategies.

Archaeological monitoring

- 11.1.23 **Reasonable access** to the site will be granted to the representative/advisors of the Local Authority, who may wish to be satisfied, through site inspections, that the archaeological works are being conducted to proper professional standards and in accordance with this written scheme of investigation.
- 11.1.24 **Regular 'site monitoring' meetings** of the appropriate members of the project team and the Local Planning Authority's designated representative/advisor will be held to review research aims, archaeological procedures, and site strategies.
- 11.1.25 **Archaeological progress reports** will be produced by MOLA and made available to the Local Planning Authority's designated representative/advisor if requested.

Variation to research priorities and/or methodologies

- 11.1.26 **Research questions:** the overall site methodology and sampling strategy is primarily determined by the research questions set out in 2 above. These will be kept under constant review as set out in the next paragraph and will continue to drive site strategy and methodology during excavation
- 11.1.27 **Resources:** within this framework the project team will carry through a process of continual assessment and prioritisation of research objectives, allowing informed decisions to be made regarding the optimum level of sampling of archaeological strata. These decisions will reflect the need to balance the recovery of valid archaeological data with prudent management of available resources, avoiding inappropriate cost
- 11.1.28 **Variation:** Decisions made on these bases may result in the enhancement or simplification of recording systems as dictated by the evolving research framework
- 11.1.29 **Agreement:** Where alternative approaches and methodologies are thought to be appropriate within the framework of the stated research objectives these will not be employed without consultation between the Local Planning Authority's representative/advisor, MOLA and the client or their agent.

Written records

- 11.1.30 Detailed, standardised **record sheets** will be completed in accordance with relevant CIFA standards (CIFA, 2014), and other established national guidelines.
- 11.1.31 Record sheets will be checked by the Site Supervisor and a relational **matrix** compiled. The inter-relating of these records, and the compilation of a Harris stratigraphic matrix during the course of the excavation, will be the central processes leading to an understanding of the site sequence.
- 11.1.32 **Computerised systems** of data capture and manipulation may be used

wherever appropriate.

Drawn records

- 11.1.33 The immediate spatial relationship of features and layers to each other will be recorded by **planning**. Each of these plans will be located on the site grid. If appropriate direct digital data capture of contexts by GPS or total station and computerised data capture of context attributes may also be used
- 11.1.34 **Digitisation** of selected drawn records will normally take place after field work is complete using AutoCad and may also be loaded into ArcGIS for analysis.
- 11.1.35 **Plan matrices** will be compiled to illustrate the relative stratigraphic positions of different features, using the 'Bonn' program or similar.
- 11.1.36 Detailed **elevations or sections** will also be drawn where appropriate.

Photographic records

- 11.1.37 The overall site record will include **photographs** made using, as appropriate, high end digital, 35mm, medium and large format cameras. The photographic record will illustrate all significant phases, structures, important stratigraphic and structural relationships, and individual items of interest, including artefacts.
- 11.1.38 All site photographs, except 'working shots', will include a **photographic scale** of appropriate size.
- 11.1.39 When film is used, originals will be archivally processed and stored, contact prints will be produced and mounted on contact cards. Cards will be returned to the site supervisors for annotation during the excavation programme. Colour transparencies will be mounted and stored in archival conditions.
- 11.1.40 A computerised **index** will be compiled, relating image number, site photograph number, context numbers, excavation area, and other relevant information.
- 11.1.41 At the request of the client a file of site photographs may be produced and copied digitally to DVD or similar for them.

Archaeogeophysics

Archaeomagnetic dating

- 11.1.42 Archaeomagnetic sampling may be carried out on suitable structures such as hearths and burnt floor surfaces.

Radiocarbon dating

- 11.1.43 Selective use may be made, where appropriate, of radiocarbon dating methods, particularly if potentially prehistoric material is recovered from aceramic contexts. MOLA will make use of external laboratories for dating.

Computing and electronic support

- 11.1.44 MOLA makes use of the latest digital operating systems, MSOffice applications, digital survey equipment, digital cameras, and CAD packages. These are upgraded continuously. Current details can be provided on request.
- 11.1.45 Our database structure has been developed specifically for archaeological data captured using the single context recording system. MOLA maintains and is continuously developing its sophisticated archaeological GIS. Details can be provided on request.
- 11.1.46 Security Backups of the entire system are done on a daily basis. All backup media is stored off site at a secure location.

Documentary research

- 11.1.47 Provision will be made for sufficient initial documentary research in order to enable the overall research aims to be realised. Further documentary research may be required during the excavation of the site to address particular structures or archaeologically identifiable properties. The final scope of additional research will be determined at the post-excavation assessment stage and be dependent upon the aims of the *Updated project design*.

Ceramic finds procedures

- 11.1.48 The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following procedures are employed:
- 11.1.49 Pottery identified within single contexts will be hand collected.
- 11.1.50 Where partial sampling is carried out on key horizons ceramics will be collected from the sieved material
- 11.1.51 MOLA pottery specialists will be consulted regarding unusual *in situ* groupings.
- 11.1.52 On pottery production sites a retention policy will be established in conjunction with relevant MOLA specialists, which will identify the best practice for that site, with regard to recording and retention of large groups of waste sherds
- 11.1.53 Spot-dating of pottery will not usually take place until all finds processing has been completed. This is because best practice requires that *all* pottery from a finished context is viewed at one time. In certain circumstances it may be useful for the Site Supervisor to have access to dating information during the course of the excavation, and provisional date-ranges from specific contexts can be provided on request.

Building materials procedures

- 11.1.54 The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following procedures are employed:
- 11.1.55 Building material identified within single contexts will be hand collected
- 11.1.56 Mortar and *opus signinum* from structures will be sampled where

appropriate

- 11.1.57 Decorated mosaics will be lifted whole in consultation with MOLA conservators, but plain tessellated pavements will be sampled.
- 11.1.58 Painted wall plaster will normally be collected. Sampling may be appropriate, but only after consultation with the appropriate specialist
- 11.1.59 Bricks: post-medieval bricks will only be sampled, though any unusual ones will be kept. Bricks of medieval date may be sampled if large quantities are present. Mud bricks may be sampled, although complete or unusual ones will be kept.
- 11.1.60 Where excavated buildings are being preserved *in situ* the building material will be studied *in situ* by a building materials specialist.

Registered finds procedures

- 11.1.61 The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following procedures are employed
- 11.1.62 MOLA conservation staff will be consulted on lifting procedures for delicate or fragile objects and may be on hand to lift objects themselves if required
- 11.1.63 All iron objects will be X-rayed with the exception of nails and slag, and then selected for conservation or scientific investigation as appropriate. Most copper-alloy objects will also be X-rayed. All coins are X-rayed as part of the conservation and dating process
- 11.1.64 Selective artefact collection procedures may be considered following discussion between the Project Manager and/or Site Supervisor and the appropriate specialist
- 11.1.65 Once finds have been taken from the site they will be recorded in Oracle using standard procedures.

Artefacts in wood/timber procedures

- 11.1.66 The Project Manager and Site Supervisor(s) will be responsible for ensuring that the following procedures are employed
- 11.1.67 Wooden artefacts will be kept moist and supported to prevent collapse or decay. No biocides will be used at any time. Each individual artefact will be placed in its own bag or waterproof box
- 11.1.68 Timbers with potential for dendrochronological analysis will be seen by a specialist on site prior to any conservation treatment taking place
- 11.1.69 Large artefacts and 'special' timbers (eg with toolmarks, unusual joints etc) will be identified, recorded and where appropriate, dendrochronologically analysed prior to conservation treatment
- 11.1.70 Structural timbers will be recorded and sampled quickly, following standard MOLA recording procedures and advice from specialists. Biocides will not be used. The Museum of London does not normally curate/conservate structural woodwork. Occasionally, the developer, client or another museum may wish to provide an alternative home for ancient structural woodwork
- 11.1.71 The timber specialist will liaise with the Project Manager and/or Site Supervisor(s), and other specialists, to monitor on-site and assist with work

as necessary.

Environmental procedure

- 11.1.72 The Project Manager and Site Supervisor(s) will be responsible for ensuring the following procedures are employed
- 11.1.73 Different sampling approaches will be used as appropriate including bulk sampling, hand collection, column sampling, and monolith sampling.
- 11.1.74 Sampling will be carried out, where possible and appropriate, in accordance with relevant national guidelines, eg CIFA 2014, Historic England 2015, and other Historic England guidelines.
- 11.1.75 Animal bone will be collected by hand, and this will be supplemented by the residues from bulk environmental samples
- 11.1.76 Human burials will be recovered individually, with the separate parts of the body (ie right arm, torso, left leg etc.) bagged separately on site. Samples will be taken for analysis of the abdominal area if soil conditions are wet or moist. Control samples will also be taken by consultation with the appropriate specialist. Cremations will be excavated in consultation with specialists.
- 11.1.77 Environmental procedures will be monitored throughout the excavation, and modified where necessary, eg after the discovery of unexpected features or deposit types, after consultation between the Project Manager and/or Site Supervisor and the appropriate specialist. In some circumstances advice may also be sought from an Historic England Regional Science Advisor.

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

A *Health & Safety Risk Assessment and Method Statement* has been prepared by MOLA to accompany this WSI but will be printed out and submitted separately as appropriate.