Hampstead Heath Ponds
London Borough of Camden

WRITTEN SCHEME OF INVESTIGATION FOR AN ARCHAEOLOGICAL WATCHING BRIEF

18/03/2015

Project Manager: Craig Halsey

MOLA MUSEUM OF LONDON ARCHAEOLOGY

REGISTERED CIfA ORGANISATION

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Hampstead Heath Ponds
London Borough of Camden

Written scheme of investigation for an archaeological watching brief

Planning reference 2014/4332/P and condition number 8

Sign-off History:

Issue No.	Date:	Prepared by:	H&S signed off by:	Checked/ Approved by:	Reason for Issue:
1	18.03.15	Craig Halsey	TBC	Craig Halsey	First issue

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1 Introduction

1.1 Project background

1.1.1 This Written Scheme of Investigation (or WSI) for an archaeological watching brief on the site of Hampstead Heath Ponds has been commissioned from MOLA by the City of London.

1.1.2 Hampstead Heath ('the site') is located in north London to the north and east of Hampstead and to the south and west of Highgate (NGR 527012 186722: Fig 1). The ponds, which are to be the focus of the proposed works, lie in the eastern part of East Heath, on the eastern part of the site. The ponds form two north-west to south-east aligned chains in the western (the Hampstead chain) and eastern (the Highgate chain) part of East Heath. The Highgate chain runs along the eastern boundary of the Heath and the Hampstead chain runs from the centre of the Heath to its southern boundary at South End Road. The proposed works involve various modifications, engineering and landscaping works to several of the ponds in order to reduce local flood risk and to improve the facilities.

1.1.3 The development received planning permission on 27th January 2015 and included Condition No 8. The condition requires;

Prior to the relevant parts of the proposed development commencing the applicant (or their heirs and successors in title) will secure the implementation of a programme of archaeological investigation in accordance with a Written Scheme of Investigation which has been submitted by the applicant and approved in writing by the local planning authority. The relevant parts of the development shall not take place other that in accordance with the Written Scheme of Investigation.

Reason: Heritage assets of archaeological interest are expected to survive on the site. The planning authority wishes to secure the provision of appropriate archaeological investigation, including the publication of results, in accordance with the requirements of policy CS14 of the London Borough of Camden Local Development Framework Core Strategy and policy DP25 of the London Borough of Camden Local Development Framework Development Policies.

1.1.4 The watching brief will be focused on any of the works requiring topsoil stripping and excavation. These include such works as the creation of new spillways, excavations for culverts, new wetland areas, minor drainage channels, pond desilting and the excavation of borrow pits to provide material for new dams. The full scope of works is set out in Section 2.

1.1.5 The potential archaeological interest on the site as determined from the *Historic Environmental Assessment* (MOLA, 2014) is summarised below.

- **Palaeoenvironmental remains**. There is high potential for evidence of past environments within alluvial deposits at the base of the pond chain valleys, of low or medium significance.
- **Post-medieval remains**. There is a high potential for buried remains of 17th century and later pond water management, of low or medium significance, and for quarrying and field boundaries, of low significance.

- **Prehistoric remains**. There is low to moderate potential for finds relating to the exploitation of marsh resources, close to the ponds. The significance of any remains would depend on their nature or extent. Isolated finds would be of low significance. Prehistoric remains may also occur across areas of higher and drier ground.

1.1.6 An archaeological watching brief as defined by the Chartered Institute for Archaeologists is *a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons (see below Section 2.1)*

1.1.7 If during the course of the watching brief an area or group of features is identified which warrants 'controlled excavation', as determined on site by the local authority and/or their advisor, this will be dealt with under methodologies applicable to 'controlled excavation' as outlined in 2.3.4 below.

1.1.8 The results of the watching brief will be set out in a report to be issued within 4 weeks of completing the fieldwork. The site archive will be deposited with the Museum of London within 12 months of issuing the report.

1.1.9 This document sets out the methodologies (including Health & Safety) which will be followed during the watching brief and reporting stages. These will follow the Standards and Code of Practice laid down by the Institute for Archaeologists, London region archaeological guidance from English Heritage (GLAAS 2014), and English Heritage Centre for Archaeology Guidelines where appropriate.

1.1.10 Other relevant documents include:

- the Archaeological Historic Environment Assessment (MOLA 2014). This presented the initial assessment of archaeological potential on the site.
- The Environmental Statement (Atkins 2014), Section 9 – Historic Environment.

1.2 Planning and legislative framework

1.2.1 The Planning and legislative background to the site has been adequately summarised in the previous Environmental Statement (Atkins, 2014; section 9). The reader is referred to this document for further details.

1.3 Archaeological background

1.3.1 A detailed description of the geology, archaeology and history of the site was provided in the earlier Archaeological Historic Environment Assessment (MOLA 2014). A brief summary is provided below;

Topography and geology

1.3.2 Hampstead Heath lies across the Hampstead-Highgate ridge of permeable Bagshot Sands which forms a high ridge running approximately north-east to south-west through the centre of the Heath. The highest point on the ridge within the Heath is *c* 134.0m above Ordnance Datum (OD), on Spaniard's Road. To the east and west of the ridge the ground falls away fairly steeply. A full description of the topography of the heath is detailed in the Historic Environment Assessment (MOLA 2013).

1.3.3 The British Geological Survey 1:50,000 scale map of North London (sheet

256) shows that the geology of the Heath comprises London Clay capped in the centre and west of the Heath by the sands and clays of the Bagshot Beds and the Claygate formation. In some places there are areas of gravel which are part of the Stanmore gravel formation.

1.3.4 The British Geological Survey holds the logs of several boreholes drilled within Hampstead Heath. Two boreholes drilled in the eastern part of the Heath, one close to the south of the Highgate ponds while the other was close to the southern end of the Hampstead ponds, both recorded London Clay directly below the ground surface. Further to the west however, boreholes drilled in East Heath and Sandy Heath encountered sand of the Bagshot beds overlying the London Clay.

Archaeological potential

1.3.5 Archaeological survival potential within Hampstead Heath is likely to be high, given the undeveloped nature of most of the area.

Prehistoric period (800,000 BC–AD43)

1.3.6 Isolated prehistoric finds dating from the Palaeolithic through to the Bronze Age have been recovered from within the heath, while a Mesolithic settlement has been recorded on the Western Heath. A Bronze Age Bell Barrow (scheduled monument) is located on the high ground of the Eastern Heath.

Roman period (AD 43–410)

1.3.7 Roman activity within the surrounding area is limited although some isolated finds have been recorded within the heath. Throughout this period the heath most likely comprised woodland.

Early medieval/Saxon period (AD 410–1066)

1.3.8 During this period a small settlement was located at Hampstead. Within the heath only isolated finds have been recorded and like the Roman period, the heath was probably comprised of woodland during this time.

Late medieval period (AD1066–1485)

1.3.9 Like the earlier periods the heath is most likely to have comprised woodland during the late medieval periods. Any features which might lie within the heath could comprise quarry pits, field and parish boundaries.

Post-medieval period (AD1485–present)

1.3.10 It was during this period that the heath was gradually formed, and during the Napoleonic period the heath was used for military training.

1.3.11 Post-medieval remains could include quarry pits, Napoleonic military finds, and field boundaries. Water management features such as historic pond walls/dams (behind existing) and sheet piles and culverts may also survive.

1.4 Recent Archaeological Investigations

1.4.1 In 2014, MOLA geoarchaeologists undertook a watching brief on geotechnical investigations in support of the planning application. Thirty four geotechnical pits were monitored in the location of the proposed borrow pits.

A further 14 boreholes and 39 window samples were monitored around the Hampstead and Highgate ponds and across Hampstead Heath. No archaeological remains were found, but in the Central Sports Ground at East Heath the trial pits revealed evidence of terracing with 19th/20th century dumping above London Clay. Boreholes and window samples into the dams revealed that many of them were constructed from upcast redeposited natural soils that were indistinguishable from natural *in situ* soil horizons. Modern made ground was found at the Men's Bathing Pond and the Catch Pit and undated, probably post-medieval, made ground was recorded at the Viaduct Pond.

1.4.2 Full details of the investigations can be found in the Environmental Statement, Appendix 9.2 (Atkins, 2014).

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 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.

2 Objectives of the watching brief

2.1 Scope of works

2.1.1 Following consultation with the principal contractor (BAM Nuttal ltd) and with consideration of the proposals as stated in the ES and Historic Environment Assessment report a number of key activities have been identified that require an archaeological watching brief. The activities outlined below (Table 1) were selected from the work programme supplied by the principle contractor (ref BAM1700-ECI-Rev00; activity ID stated in the table refers to this programme). Other activities not stated explicitly within the programme have also been identified for a watching brief.

2.1.2 An overview of the work areas is provided in Fig 2. A masterplan for each pond area indicating the location of the proposed works is also provided (see Fig 3 to Fig 15). Where applicable areas selected for a watching brief are indicated by a red box drawn round the 'activity description' on the master plans.

2.1.3 To summarise; the activities requiring an archaeological watching brief are predominately related to the works associated with new spillways and the construction of culverts. In some cases new overflow pipes, 'wetland scrapes' and additional drainage channels are also being constructed. Of all the ponds undergoing redevelopment the Model Boating Pond will be subject to the most extensive works. Here, a substantial area of the western bank will be excavated to create a pond extension and to reprofile the western bank. The Model Boating Pond is also being desilted to a level below what is termed the 'hard bed'. This is the gravel base of the pond below which undisturbed deposits of archaeological potential may survive.

2.1.4 In addition to the modification of the ponds two borrow pits are also proposed to provide material suitable for dam construction. The watching brief on the borrow pits will be focused on the initial top soil strip of the area, below which archaeological remains could be expected to occur.

Table 1: Activities requiring watching brief

Borrow Pits					
Site	**Task**	**Activity ID**	**Start date**	**Duration (days)**	**Comments**
Sports field	Strip topsoil	BP-Sports-1010	03/12/2015	3	Watching brief will focus on the initial topsoil stripping.
Pryor's file	Strip topsoil	HH-CP-680	18/12/2015	5	

Hampstead Chain					
Site	**Task**	**Activity ID**	**Start date**	**duration**	**Comments**
Vale of Health	Profile for spillway	HH-VV-1120	06/09/2015	4	Excavate to c 500mm depth and c 5m in width.
	Outfall, inlet - Trim ground to formation & blind	HH-VH-1190	23/07/2015	2	Construction of a new 500mm diameter outlet pipe within the existing dam.
	Outfall, pipe - Excavate to formation of pipe	HH-VH-1070	29/07/2015	1	
	Outfall, discharge outlet headwall - Trim ground to formation and blind	HH-VH-1060	17/07/2015	1	
Viaduct Pond	Profile for spillway	HH-VP-1140	10/06/2015	3	Open channel spillway c 4m wide and 300mm deep.
	Outfall/Box Culvert, inlet - Installation of trench sheets, removal of existing structure	HH-VP-1020	15/05/2015	3	Excavations to install a c 500mm overflow pipe.
	Outfall/Box Culvert, inlet - Trim and blind to inlet structure	HH-VP-1030	20/05/2015	1	

	Outfall/Box Culvert, pipe - Excavate pipe route/trench sheets	HH-VP-1070	27/05/2015	2	
	Outfall/Box Culvert, outlet - Trim and blind to outlet structure	HH-VP-1090	11/05/2015	1	
Catch pit	Strip topsoil & move to sports field	HH-CP-900	25/02/2016	5	Excavations to create new dam with outflow pipe cutting through dam embankment
	Earthwork - Excavate cut -off trench	HH-CP-1000	04/03/2016	5	
	Drainage - Install 600 drainage thr0gh embankment	HH-CP-1030	06/04/2016	6	
	Drainage - Trim and Blind for inlet headwall	HH-CP-1040	20/04/2016	1	
	Drainage - Trim and Blind for outlet headwall	HH-CP-1060	21/04/2016	1	
	Establishment of open stream and creation of wetland area - i.e. wetland scrapes and informal channel flows c 0.5m in depth	NA	TBC	TBC	Expected to be c 0.5m in depth
	Silt collection ponds	NA	TBC	TBC	c 1m in depth
Mixed Bathing Ponds	Spillway - Strip topsoil	HH-MB-1040	29/01/2016	5	Excavations expected to be c 0.5m in depth
	Overflow outlet - demolish and remove existing inlet structure	HH-MB-1090	03/02/2016	2	Will involve some topsoil stripping at the ends of the dam
	Excavate and blind inlet structure	HH-MB-1120	15/02/2016	2	
Hampstead No.2 Pond	Spillway inlet - Excavate to formation level and blind	HH-Nr2-1010	06/08/2015	2	Excavations for box culvert and associated spillway. The box culvert will be c 2.1m wide and 900mm deep.
	Box culvert northern end - excavate for box culvert	HH-Nr2-1360	24/09/2015	5	

	Box culvert southern end - excavate for box culvert	HH-Nr2-1150	04/08/2015	5	
	Outlet structure - excavate and blind to profile	HH-Nr2-1110	21/07/2015	2	
Hampstead No. 1 Pond	Spillway inlet - Excavate and blind to inlet slab	HH-Nr1-1050	30/11/2015	2	Excavations for new spillway and box culvert. The box culvert will be c 2.1m in width.
	Box Culvert - Excavate to base of culvert and blind	HH-Nr1-1120	05/11/2015	4	
	Outlet structure - Excavate and blind to stilling basin	HH-Nr1-1000	03/11/2015	2	

Highgate Chain					
Site	**Task**	**Activity ID**	**Start date**	**duration**	**Comments**
Stock Pond	Outfall/Box Culvert, Inlet - Trim and Blind to inlet structure	HG-SP-1040	09/11/2015	2	Consists of two new 900mm diameter overflow pipes.
	Outfall/Box Culvert, Box Culvert - Excavate Box and blind	HG-SP-1080	19/11/2015	5	
	Outfall/Box Culvert, outlet - trim an blind o outlet structure	HG-SP-1100	27/10/2015	1	
	Wetland scraps to the south of the pond	NA	TBC	TBC	Expected to be no more than c 0.5m in depth
	Spillway - Excavate to spillway	HG-SP-1200	08/12/2015	3	The open channel spillway will measure c 21m wide at the base and c 500mm deep
Ladies Bathing Pond	Spillway - Excavate to spillway	HG-LP-1150	05/02/2016	5	Expected to be c 870mm deep

	Stilling Basin, West Half- Excavate and blind for stilling basin	HG-LP-1160	04/01/2016	2	Expected to be c 5m wide at the base and c 1-1.5m in depth
	Stilling Basin, East Half - Excavate and blind for stilling basin	HG-LP-1330	06/01/2016	2	
	Overflow Pipe, Inlet - Excavate and blind to base	HG-LP-1010	03/12/2015	1	Excavations to install a 600mm overflow pipe
	Overflow Pipe, central manhole - Excavate and blind to base	HG-LP-1050	18/11/2015	1	
	Overflow Pipe, outlet - Excavate and blind to base	HG-LP-1100	17/11/2015	1	
	Overflow Pipe, pipe -Excavate and install pipe - lower section	HG-LP-1120	25/11/2015	2	
	Overflow Pipe, pipe -Excavate and install pipe - upper section	HG-LP-1130	14/12/2015	2	
Bird sanctuary Pond	New wetland channel - Excavate to form channel	HG-BS-1000	21/09/2015	10	Excavations to form a c 46m long channel
	New wetland channel – Form 4 spill ponds to the west side of BS pond	HG-BS-1040	06/10/2015	2	Depth to be confirmed. Expected to be shallow in depth, c. 500mm
	Inlet headwall -trim to formation and blind	HG-BS-1120	21/09/2015	1	Replacement of existing overflow pipe. Excavations may be limited to previously disturbed ground
	Outlet headwall -trim to formation ad blind	HG-BS-1150	24/09/2015	1	
	Overflow pipe - Excavate and install pipe inlet to manhole	HG-BS-1170	24/09/2015	3	
	Overflow pipe - Excavate and install pipe to outlet and manhole	HG-BS-1180	29/09/2015	5	
Model boating pond	Borrow Pit to West of Model Boating Pond, Silt process area/island - Strip topsoil to silt storage area	HG-MDLB-1130	21/05/2015	5	Excavations on the west bank of the Model Boating lake to create new bank

	Borrow Pit to West of Model Boating Pond, Silt process area/island - Strip remaining topsoil to silt storage area	HG-MDLB-1510	16/11/2015	6	profile and lake extension. The excavation would extend c 65m inland from the edge of the pond. The material excavated will be used to create a new dam.
	Borrow Pit to West of Model Boating Pond, Silt process area/island - Excavate lake extension leaving temp causeway (approx. 4000m3)	HG-MDLB-1230	18/03/2016	19	
	Borrow Pit, Central section - Strip Topsoil to Central borrow Pit section (2225m3)	HG-MDLB-XXX	29/05/2015	7	
	Borrow Pit, Southern section - Strip Topsoil to Southern borrow Pit section (2225m3)	HG-MDLB-XXX	09/06/2015	7	
	Desilting - Desilt dewatered section (assume 5000m3) and move to dewatering area	HG-MDLB-1030	15/06/2015	60	Desilting to be undertaken below the 'hard bed' level into potentially undisturbed ground
	Excavation for crane base	NA	TBC	TBC	Location and depth to be confirmed. Excavation expected to be c 500mm.
Highgate mens Bathing Pond	Spillway - excavate to profile of spillway	HG-MBP-1050	08/07/2016	5	Majority of the new spillway is expected to be at existing ground level. Some excavation below present ground level may be required at the end of the spillway
Highgate Pond No. 1	Proving trench for sheet piling	NA	TBC	TBC	To be excavated along the crest of the dam.
	Spillway - grade to profile	HG-NR1-1060	12/06/2016	12	Excavation to form a 64m long open channel spillway.

Generic Activities					
Site	**Task**	**Activity ID**	**Start date**	**duration**	**Comments**
All areas	Site set up, and stripping of topsoil to create works compounds	NA	TBC	TBC	Some removal of topsoil is expected to create hard standing suitable for site compound site up. Depth of ground reduction not expected to be more than c 500mm

2.2 General considerations

2.2.1 The purpose of an archaeological watching brief as defined by the Chartered Institute for Archaeologists (CIFA, 2014) as '…a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is the possibility that archaeological deposits may be disturbed or destroyed.'

2.2.2 A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

2.2.3 Further to para 2.2.2, if during the course of the watching brief it is determined by the local authority or their archaeological advisor that 'controlled excavation' is the appropriate mitigation strategy for a given area the appropriate additional objectives and methodologies will be followed, see 2.3.4

2.2.4 The Standard also notes that a watching brief may be the appropriate archaeological response outside the planning process (eg ecclesiastical development, coastal erosion, agriculture, forestry, and countryside management, works by public utilities and statutory undertakers).

2.3 Site specific objectives

2.3.1 The archaeological brief is essentially limited to establishing where, if at all, archaeological deposits survive (presence/absence), recording where necessary, and to ensuring that the proposed groundworks do not involve the destruction of any archaeological deposits of national significance.

2.3.2 The watching brief will involve a MOLA Site Supervisor in attendance on the Principal Contractor's (or any other contractor employed by them or the client) 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 and taking levels on observations. The primary purpose of watching briefs will normally be the identification of the limits of features – size, depth, and alignment.

2.3.3 Bulk finds will not normally be recovered in the watching brief areas, though finds of specific and unique intrinsic interest may be.

2.3.4 Where an agreed area is set aside for 'controlled excavation' the terms of limitations of paras 2.3.1, 2.3.2 and 2.3.3 do not apply. Agreement must be reached on a) the research aims for 'controlled excavation'; b) the size and safe demarcation of any such agreed area; and c) appropriate time allocated by the client for the 'controlled excavation' to take place. Controlled excavation will then be carried out, finds will be recovered and samples taken in accordance and complying with the CIFA Standard and Guidance for Excavation (2014). The curator may decide that an additional WSI, or at least a supplement to the present document, is also required.

2.3.5 The limited nature of the proposed works and the watching brief upon them makes it unreasonable to establish many specific archaeological research objectives. Nevertheless a few research questions can be outlined:

- What is the nature and level of natural topography?
- What are the earliest deposits identified?
- Is there any evidence for prehistoric activity?
- Do any alluvial deposits survive that may contain palaeoenvironmental proxy indicators (i.e pollen, plant macro fossils) suitable for past landscape reconstruction?
- Is there any evidence for post-medieval landscaping and water management?
- What are the latest deposits identified?
- What is the extent of modern disturbance?

3 Watching brief methodology

3.1 Archaeological considerations

3.1.1 Properly arranged, a watching brief will cause minimal disruption to site works and will take place within agreed constraints. Watching briefs are not recommended in circumstances where important or complex archaeological remains are liable to be discovered, resulting in a risk of conflict between the need to record archaeological finds and the need to allow building works to proceed.

3.1.2 Initial breaking out and/or ground clearance by the Principal Contractor will be monitored by MOLA staff in the areas identified in Table 1.

3.1.3 A MOLA Site Supervisor will monitor the work and record any archaeological remains revealed in the appropriate manner (plans, sections, field notes and/or pro-forma 'context sheets'). Observations will be transformed onto the Ordnance Survey National Grid Projection and heights OD. Any necessary photographic records will be made using digital or conventional media as deemed appropriate. All recording will be carried out to the format and standards detailed in the *Archaeological Site Manual* (MoL, 1994).

3.1.4 Subject to 2.3 above, where significant archaeological deposits survive in any area of the proposed groundworks, the contractors will allow the MOLA archaeologist(s) reasonable time and access to record deposits as required.

3.1.5 In areas of archaeological interest the excavation and removal of deposits by the Contractor will, as far as possible and subject to 2.3 above, proceed according to the reasonable advice and guidance given by the attending archaeologist.

3.1.6 Subject to 2.3 above some areas may require temporary shoring and groundworks might need to be temporarily re-scheduled in order to provide a safe environment for archaeological recording.

3.1.7 Any finds of human remains will be left *in situ*, covered and protected. If removal is essential it can only take place under appropriate Faculty jurisdiction, Ministry of Justice (Coroner's Division) licence, environmental health regulations, coroner's permission, and if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act. Prior written notice will also be given to the local planning authority. It will be necessary to ensure that adequate security is provided.

3.1.8 Because MOLA is providing a monitoring service to an on-going construction programme, the timing of which can vary considerably, it remains the client's responsibility to ensure that their Principal Contractor informs MOLA no later than one week in advance of the start of any proposed groundworks where a watching brief is required.

3.2 Recording systems

3.2.1 A unique-number site code will be agreed with the Museum of London Archaeological Archive (LAARC).

3.2.2 The recording systems adopted during the investigations will be fully compatible with those most widely used elsewhere in London, and those required by the Archive Receiving Body, the Museum of London.

3.3 Treatment of finds and samples

3.3.1 Where necessary, a strategy for sampling archaeological and environmental deposits and structures (which can include soils, timbers, animal bone and human burials) will be developed in consultation between MOLA, the client and the local Planning Authority. Subsequent on-site work and analysis of the processed samples and remains will be undertaken by MOLA specialists.

3.3.2 For this site the examination of alluvial deposits may be required. Any such deposits exposed by the works will be examined and recorded by a MOLA geoarchaeologist. If necessary the sedimentary sequence will be sampled by monolith tins in order to recover undisturbed blocks of sediment suitable for offsite analysis. This will be supplemented with bulk samples taken to retrieve palaeoenvironmental macro fossils.

3.3.3 All retained finds and samples will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in a proper manner and to standards agreed in advance with the Museum of London.

3.3.4 All finds of gold and silver, or other objects definable as 'treasure', will be removed to a safe place and reported to the local Coroner according to the procedures of the Treasure Act 1996 and the Treasure (Designation) Order 2002. Where removal cannot be effected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft.

3.3.5 Advice will be sought from the LPA Archaeological Advisor and the English Heritage Regional Archaeological Science Advisor throughout the project, as appropriate.

3.4 Ownership of finds

3.4.1 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, in perpetuity, as part of the archaeological Archive from this site.

3.4.2 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).

3.4.3 The client (or their agent) will make arrangements for the signing of the Deed of Transfer Form by the client or, if the landowner is different to the client, by the landowner.

3.4.4 Notwithstanding the above, subsequent arrangements may be made if required between the landowner and/or the client and the Museum for the conservation, display, provision of access to or loan of selected finds in or near their original location.

3.5 Reports and archives

3.5.1 *A Watching Brief report* will be made available to the client and the Local Planning Authority within 4 weeks of the completion of fieldwork.

3.5.2 If further to paras 2.2.3 and 2.3.4 the need for further 'controlled excavation'

is identified during the course of the watching brief, any additional such controlled excavation carried out by MOLA will normally lead to a post-excavation assessment report as per MAP2 (English Heritage 1991). The need for a post-excavation assessment report may also be determined by the local authority if significant finds or environmental samples have been recovered during the watching brief, even if an area of 'controlled excavation' has not been defined during the fieldwork. Any post-excavation assessment report will normally subsume the overall watching brief report.

3.5.3 A short summary of the results of the watching brief will be submitted to the Greater London HER and NAR (using the appropriate OASIS archaeological report form) and for publication in an appropriate academic journal.

3.5.4 Details of the project will be submitted to the online database maintained by the Online Access to the Index of Archaeological Investigations (OASIS) Project

3.5.5 Finds and records will be curated by the Museum of London and be available for public consultation in a site archive compatible with other archaeological archives in the Museum of London and adhering to standards set out in the following:

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

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

3.5.7 Pursuant to these agreements the archive will be presented to the archive officer or relevant curator of the Museum within 12 months of the completion of fieldwork (unless alternative arrangements have been agreed in writing with the local planning authority).

4 Programme, staffing and attendances

4.1 Timetable and staffing

4.1.1 The timing and overall duration of the archaeological watching brief 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 additional Archaeologists to assist with any recording work if required. Other archaeological specialists may be called in if necessary.

4.2 Attendances

4.2.1 For watching briefs, the attendances required by MOLA tend to be minimal as archaeologists are in fact attending the on-site works. However, some provision for welfare and working conditions will need to be anticipated. Some or all of the following attendances may be required and supplied by the client, or the client's agent.

4.2.2 If additional 'controlled excavation' is required as per para 2.3.4 there may be a need for additional or more extensive attendances. These will have to be discussed and agreed between the client and MOLA but will be as appropriate to and necessary for safe working conditions and adequate site facilities for any additional staff required.

4.2.3 Shoring: the need for the shoring of trenches will be determined by a competent person taking into account ground conditions, groundwater conditions, weather conditions, nature of work to be undertaken, how long the work will take, adjacent structures. The shoring will be installed and maintained in accordance with CDM 2007 and HSG 150 throughout the occupancy of the site by a competent person employed by the Principal Contractor/client or his agents. The shoring will be inspected by a competent contractor (Not MOLA) before each shift, any event which may have affected the strength of the shoring, or any un-intentional falls of material or equipment.

4.2.4 Where mechanical or electric hoists are to be used in shored shafts, MOLA Health and Safety policy requires staff working in shafts less than 4m x 4m to leave the shaft before hoisting of buckets takes place and not to re-enter until the bucket is lowered back into position. Time for such evacuation will not form part of excavation programme. Beyond a depth of 3m within such shafts gas monitoring equipment will be required to ensure appropriate air quality for those working there. Where mechanical or electrical hoists are in use in larger excavation trenches, the area in which the hoist is in use must be clearly demarcated and no staff will enter this area while the hoist is being raised or lowered.

4.2.5 Safety guard-rails and suitable access points into the site and areas of excavation, away from any site traffic and machinery.

4.2.6 Ladders into all areas of excavation when the excavated depth requires such access.

4.2.7 If ground-water is encountered in the trenches, adequate pumps will be required to remove it in order to complete the excavations.

4.2.8 A suitable security system to operate overnight, weekends and holidays.

5 Funding

5.1.1 The developer has already agreed to fund the appropriate archaeological watching brief coverage. The costs will be agreed in a separate document.

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